



North Carolina Department of Environmental Quality

July 18, 2025

Duke Energy Progress, LLC

Novo Nordisk

Draft Community Profile

It is the policy of the North Carolina Department of Environmental Quality (NCDEQ) that no person shall, on the ground of race, ethnicity, national origin, sex, age or disability be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any program or activity receiving federal financial assistance, as provided by Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Act of 1987, the Rehabilitation Act of 1973, and all other pertinent nondiscrimination laws and requirements.

In conducting this analysis, the Community Engagement Program pursues NCDEQ's mission to "Provide science-based environmental stewardship for the health and prosperity of all North Carolinians."



Table of Contents

List of Tables.....	5
List of Figures	5
Executive Summary.....	6
Objective.....	6
Key Findings.....	6
Recommendations	6
1. Introduction.....	7
2. Evaluation Approach.....	7
2.1 Sociodemographic Indicators.....	8
Race and Ethnicity	8
Age and Sex	8
Disability	9
Limited English Proficiency.....	9
Educational Attainment	9
Poverty and Low-income	9
3. Permit Information and Facility History Overview	10
Facility/Permit Details.....	10
Previous Public Engagement.....	11
4. Geographic Area	11
5. Sociodemographic Analysis.....	15
5.1 Race and Ethnicity	16
Potential for Concerns	16
Results.....	16
5.2 Age and Sex.....	18
Potential for Concerns	18
Results.....	18
5.3 Disability	19
Potential for Concerns	19
Results.....	20
5.4 Limited English Proficiency	20
Potential for Concerns	20
Results.....	20

5.5 Educational Attainment.....	21
Potential for Concerns	21
Results.....	22
5.6 Poverty and Low-income.....	23
Potential for Concerns	23
Results.....	23
6. Health & Cumulative Impacts	24
6.1 County Health Outcome Ranks	24
6.2 CDC/ATSDR Index	26
6.3 US EPA’s Indexes	27
6.4 Local Industrial Sites	28
7. Local Sensitive Receptors.....	30
8. Conclusion.....	31
Key Findings.....	31
Recommendations	32
Appendix.....	33
Appendix A: U.S. Census Data Sources	33
Appendix B: Additional Data Sources	33
Appendix C: Sociodemographic Indicators and US EPA Report	33
Race & Ethnicity	34
Age & Sex.....	35
Disability	35
Limited English Proficiency	36
Educational Attainment.....	38
Poverty & Low Income.....	39
US EPA Report.....	39
Appendix D: County-Level Health Rankings.....	44
Appendix E: CDC Index Model	45
Appendix F: Limitations	49
Census Data.....	49
Cumulative Impacts and Health	49
Appendix G: Glossary	49

List of Tables

Table 1. Summary of potential emissions for Duke Energy Progress, LLC – Novo Nordisk by pollutant ...	10
Table 2. Geographic area summary of the facility	12
Table 3. Race & Ethnicity percentage comparisons to the county and state	16
Table 4. Population of color percentage comparisons to the county and state	17
Table 5. Median Age & Sex for North Carolina and Johnston County.....	18
Table 6. Median Age & Sex for census tracts within a one-mile radius of the Duke Energy Progress – Novo Nordisk facility.....	19
Table 7. Age percentage comparisons to the county and state	19
Table 8. Disability percentage comparisons to the county and state	20
Table 9. Limited English Proficiency percentage comparisons to the county and state	21
Table 10. Educational Attainment percentage comparisons to the county and state (Populations between 18-24 years)	22
Table 11. Educational Attainment percentage comparisons to the county and state (Populations age 25 years and over).....	22
Table 12. Poverty percentage comparisons to the county and state	23
Table 13. CDC/ATSDR Index	26
Table 14. List of Permits, Incidents, and Sites within the one-mile Project Area Radius.....	30
Table 15. List of Sensitive Receptors within the One-Mile Project Area Radius	30

List of Figures

Figure 1. The Duke Energy Progress – Novo Nordisk facility with a one-mile radius in the NCDEQ Community Mapping System.....	14
Figure 2. Census tracts within a one-mile radius of the Duke Energy Progress – Novo Nordisk facility	15
Figure 3. Race & Ethnicity percentage comparisons to the county and state	17
Figure 4. Population of color percentage comparisons to the county and state	18
Figure 5. Poverty percentage comparisons to the county and state	24
Figure 6. NC County Population Health and Well-being Ranks for 2025.....	25
Figure 7. NC County Community Conditions Ranks for 2025.....	25
Figure 8. Census tracts within the one-mile radius and corresponding CDC Index scores.....	27
Figure 9. EPA Indexes for a one-mile radius around the Duke Energy Progress – Novo Nordisk facility ...	28
Figure 10. NCDEQ Community Mapping Tool Snapshot of the one-mile Project Area Radius.....	29
Figure 11. US EPA Snapshot of Potential Sensitive Receptors within the One-Mile Project Area Radius..	31
Figure 12. Histogram of health outcome ranges for national z-scores reported in 2024 County Health..	44
Figure 13. Histogram of health factor ranges for national z-scores reported in 2024 County Health.....	44

Executive Summary

Objective

The primary goal of this Community Profile is to encourage comments and suggestions from the surrounding community, industry, and environmental groups throughout the comment period for the Duke Energy Progress, LLC – Novo Nordisk Title V permit application. Using available data from sources including the US Census Bureau, Environmental Protection Agency (US EPA), and Centers for Disease Control (CDC), the report provides recommendations for appropriate enhanced public outreach and engagement to facilitate public input. Specifically, this report highlights census tracts within a one-mile radius of Duke Energy Progress – Novo Nordisk and the potential for community concerns.

Key Findings

Based on this report's analysis and using North Carolina Department of Environmental Quality (NCDEQ) Potentially Underserved Block Groups (on the basis of race, ethnicity, and poverty) and standard guidelines established by the US EPA and in the National Environmental Policy Act (NEPA) documentation, the potential concerns for particular populations within a one-mile radius of Duke Energy Progress, LLC – Novo Nordisk have been identified as follows:

- **Race and Ethnicity:**
 - Total people of color populations in the project area and Census Tract 410.01.
 - The following race/ethnic population categories:
 - Black or African American
 - Hispanic or Latino
 - Asian
- **Tribal Communities:**
 - The Triangle Native American Society serves Native Americans/Indigenous individuals and communities in Johnston County
- **Age and Sex:** Populations of individuals 5 years or younger in the project area, Census Tract 409.03, Census Tract 410.01, and Census Tract 409.06.
- **Limited English Proficiency:** Households that speak the following language categories with limited English-speaking proficiency:
 - Spanish
 - German or other West Germanic languages
 - Russian, Polish, or other Slavic languages
 - Arabic
- **Education:** Populations of individuals at least 18 years and older whose highest educational attainment is less than a high school graduate (or equivalency) in Census Tracts 409.03 and 410.01.
- **Poverty:** Populations experiencing poverty below 200% of the poverty level or below the poverty level in Census Tracts 409.03, 410.01, and 409.06.

Recommendations

Based on the sociodemographic indicator analysis, the Community Engagement Program recommends the following outreach and engagement for the Duke Energy Progress, LLC – Novo Nordisk Title V permit application public commenting period:

- Public notices and one-page fact sheets with public comment and public hearing information in English and Spanish.
- Consultation with community leaders about other outreach recommendations including known local American Indian-serving or related organizations and leaders.
- Mailed or emailed public notices and one-page fact sheets in English and Spanish to local sensitive receptors and the Town of Clayton.
- Evaluate options to distribute one-page fact sheets in English and Spanish in high-traffic community areas.
- Arrange an English and Spanish voicemail line to receive public comments.

1. Introduction

The North Carolina Department of Environmental Quality (NCDEQ) and its Community Engagement Program maintains an ongoing interest in integrating protections for human health, vulnerable communities, the environment, and civil rights into its programs.

The Community Engagement Program at NCDEQ works to ensure the fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

The US EPA defines overburdened communities as a minority, low-income, tribal or indigenous populations, or geographic locations in the United States that potentially experience disproportionate environmental harms and risks.¹ Disproportionality can result in greater vulnerability to environmental hazards, lack of opportunity for public participation, or other factors. Increased vulnerability may be attributable to an accumulation of negative environmental, health, economic, or social conditions within these populations or places.

The primary goal of this Community Profile is to encourage comments and suggestions from the surrounding community, industry, and environmental groups throughout the comment period for the Duke Energy Progress, LLC – Novo Nordisk Title V permit application. Using available data from sources including the US Census Bureau, US EPA, and CDC, the report provides recommendations for appropriate enhanced public outreach and engagement to facilitate public input. Specifically, this report highlights census tracts within a one-mile radius of Duke Energy Progress, LLC – Novo Nordisk and the potential for community concerns.

2. Evaluation Approach

NCDEQ has assessed the current permit conditions and the demographics of the communities in the area surrounding the facility. Accordingly, this Draft Community Profile includes:

- Permit information and facility history overview
- 2025 County Distress Ranking as determined by the NC Department of Commerce
- Sociodemographic analysis of census tracts within the one-mile radius and potential concerns based on a comparison of local area demographics to both county and statewide census data

¹ 2020 Glossary. Environmental Protection Agency (EPA). <https://www.epa.gov/caa-permitting/what-definition-overburdened-community-relevant-epa-actions-and-promising-practices>.

- Presence or absence of state or federally recognized Tribes or Urban Indian Associations
- County health assessment from the County Health Rankings and Roadmaps and potential cumulative impacts
- Local sensitive receptors
- Conclusions and outreach recommendations

2.1 Sociodemographic Indicators

The Community Engagement Program examined the following sociodemographic indicators:

- Race and Ethnicity
- Age and Sex
- Disability
- Limited English Proficiency (LEP)
- Educational Attainment
- Poverty and Low-income

The sociodemographic indicators examined are in alignment with NCDEQ’s policy that no person shall, on the grounds of race, color, Tribal affiliation, national origin, sex, age, or disability be excluded from participation in, be denied the benefits of or be subjected to discrimination under Title VI of the Civil Rights Act of 1964, the Civil Rights Restoration Action of 1987, the Rehabilitation Act of 1973, and all other pertinent nondiscrimination laws and regulations.

Demographics for the state of North Carolina and its counties are compared to the census tracts on a local geographic scale using data available through the U.S. Census Bureau. Demographic data is assessed at a census tract level for all census tracts within a one-mile radius around Duke Energy Progress, LLC – Novo Nordisk – which will be referred to as the project area in this report. See Appendix A for descriptions of all U.S. Census source data used in this report.

Race and Ethnicity

To analyze potential concerns based on race, color, national origin, and ethnicity, the Community Engagement Program examined populations in the following U.S. Census-defined race (not Hispanic and Latino) and ethnicity categories:

- White (Not Hispanic)
- Black or African American
- Hispanic or Latino
- American Indian or Alaska Native
- Asian
- Native Hawaiian and Other Pacific Islander
- Some Other Race
- Two or More Races

Age and Sex

To analyze potential concerns based on age and sex, the Community Engagement Program examined populations of two different age categories for both males and females. The populations of ≤5 years old

and ≥65 years old were examined because the Centers for Disease Control and Prevention (CDC) considers children and older adults to be vulnerable populations.²

Disability

To analyze potential concerns based on disability status, the total population with a disability was examined.

To analyze potential concerns regarding accessibility to public information and public hearings concerning public health or environmental impacts of programs, policies, and activities the types of difficulties experienced by the total population with a disability was also examined.

Limited English Proficiency

Eleven language categories with Limited English Proficiency (LEP; speak English “Less than Very Well”) ³ were analyzed. These LEP language categories are within the top LEP language categories in the State and are as follows:

- Spanish
- Chinese (including Mandarin and Cantonese)
- Vietnamese
- Arabic
- French (including Cajun)
- Korean
- Other Asian and Pacific Island Languages
- Russian, Polish or other Slavic Languages
- Other Indo-European Languages
- Tagalog (including Filipino)
- German or other West Germanic Languages

To analyze potential concerns regarding accessibility to public information concerning public health or environmental impacts of programs, policies, and activities, these identified populations with LEP were examined.

Educational Attainment

To analyze potential concerns based on socioeconomic status, populations with varying levels of educational attainment (bachelor’s degree and higher and high school degree and lower) for adults of 25 years or older were examined. Educational attainment (specifically those with a high school degree and lower) for those between 18 and 24 years old were also examined.

Poverty and Low-income

To analyze potential concerns based on income levels, populations below the poverty level and “low income” populations were examined. Poverty status is determined by annual income relative to the

² *Sensitive Populations and Chemical Exposure*. Centers for Disease Control and Prevention (CDC) and Agency for Toxic Substances Disease Registry (ATSDR). Archived September 27, 2024.
<https://web.archive.org/web/20240927202933/https://www.atsdr.cdc.gov/emes/public/docs/Sensitive%20Populations%20FS.pdf>

³ *Table B16001 2023: ACS 5-Year Estimates*. U.S. Census Bureau.
<https://data.census.gov/table/ACSDT5Y2023.B16001?t=Language+Spoken+at+Home&g=040XX00US37>

number of individuals and dependents living in a household. The poverty level for 2023 was defined as having a household income less than \$15,480 for a household with one individual or having a household income of less than \$31,200 for a household with four individuals.⁴ The U.S. Census Bureau considers a household to be all individuals that occupy a housing unit as their usual place of residence.⁵ Analyzed poverty data from the U.S. Census Bureau considered total populations in poverty as a count of individuals, which had already been determined on a household level according to these guidelines.

The US EPA Assesses income and poverty conditions using the threshold of “low income.” Low income is defined as a household income below twice the federal poverty level⁶. The low-income level for 2023 was defined as having a household income less than \$30,960 for a household with one individual or having a household income of less than \$62,400 for a household with four individuals. The US Census Bureau labels this value as “below 200% of the poverty level.”

3. Permit Information and Facility History Overview

Facility/Permit Details

Duke Energy One’s Energy Services (Duke Energy), a branch of Duke Energy Progress, LLC, has submitted an air permit application (No. 5100226.24A) for a greenfield Title V facility, Duke Energy Progress, LLC – Novo Nordisk, for the construction and operation of emergency generators to support backup power generation needs for an expanding large pharmaceutical company in Johnston County, North Carolina.

The facility currently operates seventeen emergency generators for a pharmaceutical customer in Clayton, NC. The sum of emissions from these seventeen generators was less than 100 tons per year (tpy) for any criteria pollutant, 10 tpy of any hazardous air pollutant (HAP), and 25 tpy of any combination of hazardous air pollutants. Therefore, the generators were previously exempt from receiving a permit under 15A North Carolina Administrative Code (NCAC) 02Q .0903.

Application No. 5100226.24A is requesting authorization to install an additional thirteen emergency generators, which will increase the potential to emit to over 100 tpy for nitrogen oxides (NO_x). The site has the potential to emit less than 10 tpy of any individual HAP and less than 25 tpy of total HAPs; therefore, it remains considered as an area source of HAPs. With a potential to emit of less than 250 tpy for each regulated New Source Review (NSR) pollutant, the proposed facility is considered to be a minor source under the Prevention of Significant Deterioration (PSD) program.

Table 1. Summary of potential emissions for Duke Energy Progress, LLC – Novo Nordisk by pollutant

Pollutant	Potential Emissions (tons per year)
Particulate matter (PM)	6.71
Particulate matter 10 micrometers or less in diameter (PM10)	6.71
Particulate matter 2.5 micrometers or less in diameter (PM2.5)	6.71
Nitrogen oxides (NO_x)	219

⁴ <https://www.census.gov/library/publications/2024/demo/p60-283.html>

⁵ Household Definition. (n.d.). In *US Census Bureau Glossary*. <https://www.census.gov/glossary/?term=Household>.

⁶ U.S. Department of Energy. (2024). *Weatherization assistance for low-income persons*, 10 C.F.R. § 440.3. <https://www.ecfr.gov/current/title-10/chapter-II/subchapter-D/part-440/section-440.3>

Carbon monoxide (CO)	98.4
Sulfur oxides (SO_x)	0.21
Volatile organic compounds (VOC)	11.05
Total hazardous air pollutants (HAP)	0.22
Largest HAP (benzene)	0.10

Duke Energy Progress, LLC – Novo Nordisk will be subject to federal standards including National Emissions Standards for Hazardous Air Pollutants (NESHAP) for Stationary Reciprocating Internal Combustion Engines (40 CFR Part 63, Subpart ZZZZ) and New Source Performance Standards (NSPS) for Stationary Compression Ignition Internal Combustion Engines (40 CFR Part 60, Subpart IIII).

The facility is subject to North Carolina air toxics (state only requirements) per 15A NCAC 02Q .0704(a) and (c). The facility has completed an air toxics dispersion modeling analysis for arsenic (ASC-Other), benzene (71-43-2), beryllium metal (unreacted) (7440-41-7), cadmium metal (elemental unreacted) (7440-43-9), soluble chromate compounds, as chromium (VI) equivalent, formaldehyde (50-00-0), and mercury vapor (7439-97-6). All pollutants were modeled at rates in compliance with the applicable Acceptable Ambient Levels (AALs). All other pollutants are expected to be emitted at rates below the applicable Toxics Permitting Emissions Rates (TPERs) per 15A NCAC 02Q .0711.

Previous Public Engagement

The Novo Nordisk Pharmaceutical Industries facility where the Duke Energy Progress, LLC– Novo Nordisk project will be located currently has four permits on site:

- 1 Air Quality Permit
- 2 NDPES Stormwater Permits
- 1 Hazardous Waste Site

The Division Water Resources issued a 401 Individual Certification on February 6, 2023 to Novo Nordisk Pharmaceutical Industries. When this permit was issued, NCDEQ engaged in a public participation process. There was not a Community Profile published by NCDEQ during this process. The following activities were conducted to engage community stakeholders during the permitting process⁷:

- Public comment period and public hearing noticed on DWR website
- Press release issued

4. Geographic Area

NCDEQ defines a Potentially Underserved Community (PUC) by examining the race/ethnicity and poverty criteria for each block group. The block group is then compared to both the county and the state and is classified by the Department as a Potentially Underserved Block Group if it meets the following criteria for race/ethnicity and poverty:

⁷ <https://www.deq.nc.gov/news/events/public-notice-2023-01-05-401-program-application-and-finding-fact-authorization-certificate-major>

- **Race/Ethnicity:** Share of people of color and Hispanic or Latino (of any race) is greater than or equal to fifty percent OR share of people of color and Hispanic or Latino (of any race) is at least ten percent higher than County or State share.
- AND**
- **Poverty:** Share of population experiencing poverty is greater than or equal to twenty percent OR share of households in poverty is at least five percent higher than the County or State share.

These selections occur on a block group level and this dataset is a selection of the 2023 American Community Survey (ACS) 5-year data from the data tables B03002—Hispanic or Latino Origin by Race—and S1701—Poverty Status in the Past 12 Months. Learn more about [NCDEQ's Potentially Underserved Block Groups 2024 - Overview](#).

Duke Energy Progress, LLC – Novo Nordisk is in Census Tracts 409.03 and 410.01 in Johnston County and by NCDEQ's definition, is not located in a Potentially Underserved Community. According to the NC Department of Commerce 2025 County Tier Designations for County Distress Rankings, Johnston County is a Tier 3 county (on a scale of Tiers 1-3 with Tier 1 being the most distressed), which is categorized as least distressed, and has an economic distress rank of 90 out of 100 (with a rank of 1 being most economically distressed and 100 being least economically distressed).

County tiers in the state are calculated by the NC Department of Commerce using four factors: average unemployment rate, median household income, percentage growth in population, and adjusted property tax base per capita. Tier 1 encompasses the 40 most distressed counties, Tier 2 encompasses the next 40, and Tier 3 encompasses the 20 least distressed counties. Visit the [NC Department of Commerce's County Distress Rankings](#) for more details on county tier calculations.

According to US EPA, the project area is in the 51st percentile in the state for broadband internet gaps (See Appendix C). This means 49% of areas in the state have more broadband internet gaps, meaning these areas may have sufficient internet access.

Demographics for the project area and census tracts intersecting the project area were analyzed for this report. **Table 2**, **Figure 1**, and **Figure 2** summarize the geographic area and census tracts within a one-mile radius of Duke Energy Progress – Novo Nordisk.

Table 2. Geographic area summary of the facility

GEOGRAPHIC AREA SUMMARY	
Facility Address	3612 & 3611 Powhatan Road Clayton, NC 27527 638 GLP One Way Clayton, NC 27527
Geographic Coordinates	35.61742, -78.40531
Located in a PUC (Yes/No)	No
County	Johnston County
2025 County Tier for County Distress Rankings	Tier 3

2025 Economic Distress Ranking out of 100	90
Census Tracts with the facility	409.03 and 410.01
Census Tracts within a one-mile radius of facility	409.06
Presence of State or Federally recognized Tribes or Urban Indian Organizations	The Triangle Native American Society serves Johnston County

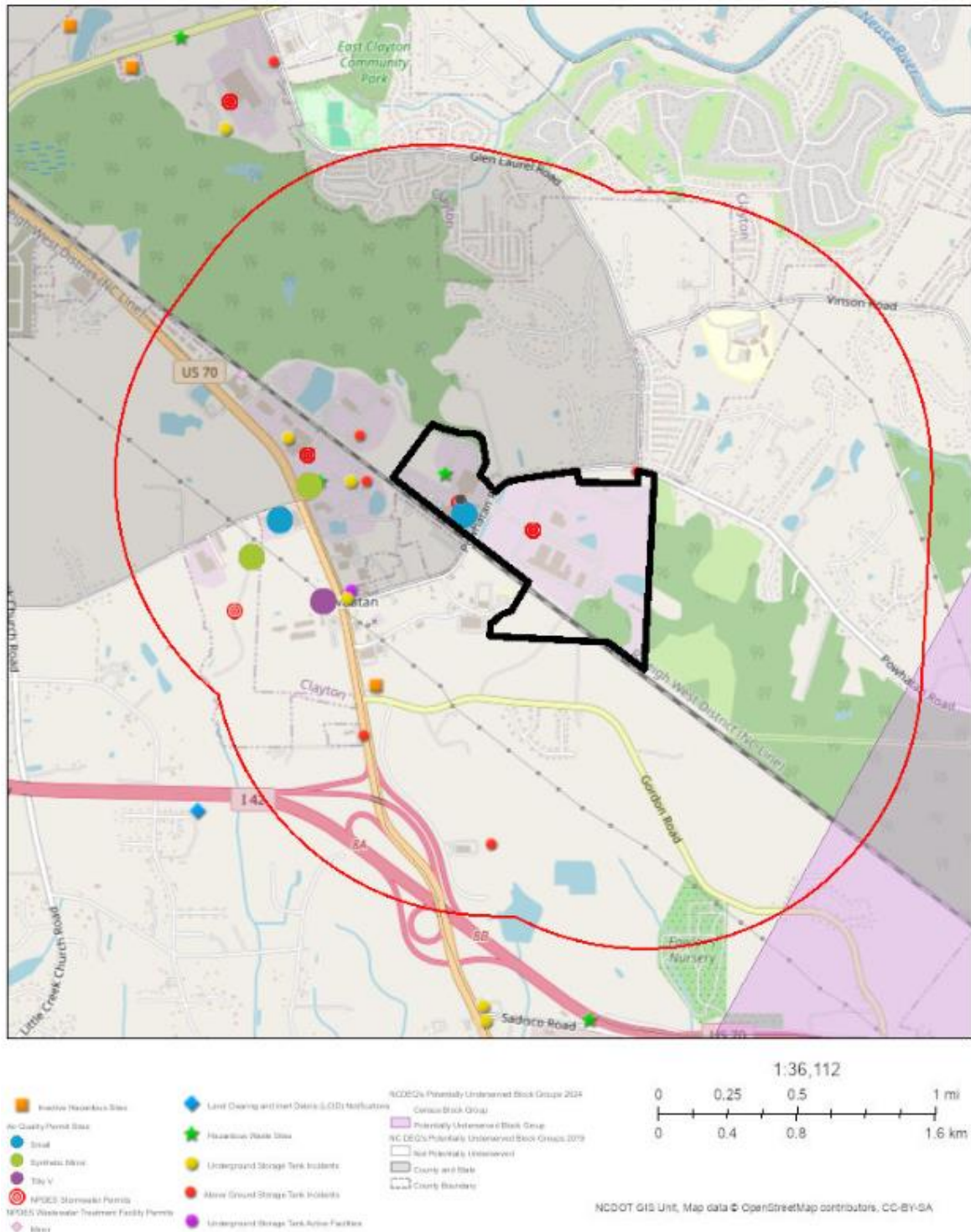


Figure 1. The Duke Energy Progress, LLC – Novo Nordisk facility with a one-mile radius in the NCDEQ Community Mapping System

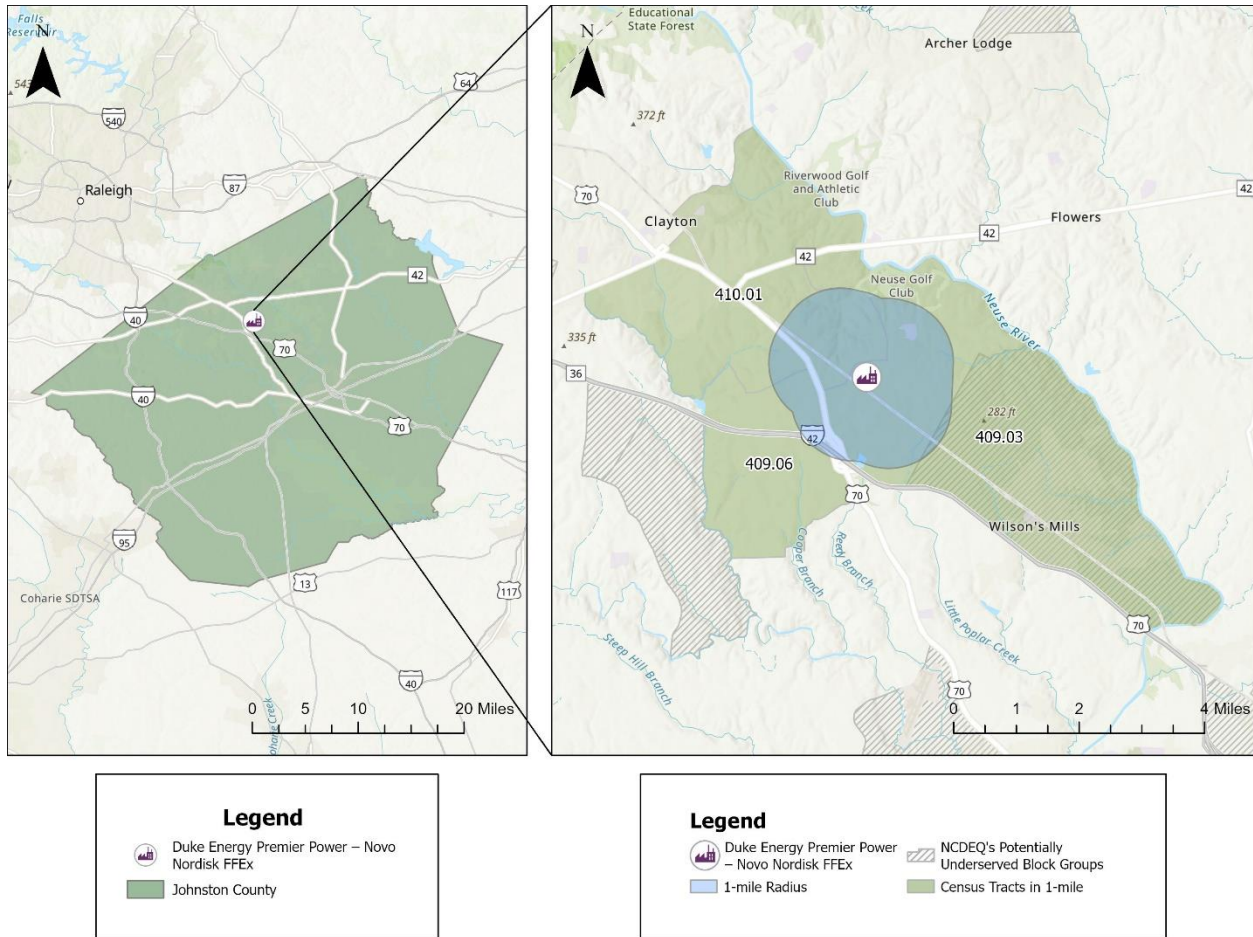


Figure 2. Census tracts within a one-mile radius of the Duke Energy Progress, LLC– Novo Nordisk facility

5. Sociodemographic Analysis

Using standard guidelines developed by the U.S. Environmental Protection Agency (US EPA) and pursuant to the National Environmental Policy Act (NEPA), the following conditions are highlighted as communities with the potential for concerns:

1. A 10% or more difference when compared to the county or state for race and ethnicity, age and sex, disability, and educational attainment (up to high school or equivalent level);
2. A 50% or more population of color;
3. Share of population experiencing poverty is 20% or more;
4. Percentage increase of 5% or more compared to the county or state average for poverty;
5. At least 5% of the population or 1,000 people (whichever is smaller) speaks English less than very well.

The U.S. Census Bureau uses and provides margins of error as an indicator of potential sampling errors and relative reliability. A larger margin of error corresponds to a higher degree of uncertainty. Estimates, margins of error, NCDEQ-calculated confidence intervals for sociodemographic indicators are provided in Appendix C (as available through the U.S. Census Bureau).

5.1 Race and Ethnicity

Potential for Concerns

- The project area and Census Tract 410.01 have an overall population of people of color greater than 10% higher when compared to the county and/or state.
- The project area and Census Tract 410.01 have a Black or African American population greater than 10% higher when compared to the county and state.
- Johnston County, the project area, Census Tract 409.03, and Census Tract 410.01 have an overall Hispanic or Latino population greater than 10% higher when compared to the state or the county.
- Census Tract 409.06 has an overall Asian population greater than 10% higher when compared to the county.

Results

Table 3. Race & Ethnicity percentage comparisons to the county and state

RACE & ETHNICITY (%)						
	NORTH CAROLINA (n=2672)	JOHNSTON COUNTY (n=53)	PROJECT AREA	CENSUS TRACT 409.03	CENSUS TRACT 410.01	CENSUS TRACT 409.06
White (Not Hispanic)	60.65	62.69	56	62.59	45.73	75.11
Black or African American	20.29	16.51	27*†	15.36	31.58*†	13.77
Hispanic or Latino	10.95	16.24*	17*	14.00*	20.57*†	6.52
American Indian or Alaska Native	0.85	0.27	0	0.04	0	0
Asian	3.12	0.79	0	0.56	0.45	1.71†
Native Hawaiian or Other Pacific Islander	0.05	0.03	0	0	0	0
Some other Race	0.44	0.42	0	2.16*†	0	1.86*†
Two or More Races	3.66	3.04	0	5.28*†	1.68	1.03
Total Population	10,584,340	226,623	3,445	9,584	12,117	2,041
Source: US Census Bureau, 2023 American Community Survey (ACS) 5-year estimate						
All bolded* cells indicate a percentage increase of 10% or more for non-white populations in the county or census tract compared to the state .						
All bolded† cells indicate a percentage increase of 10% or more for non-white populations in the census tract when compared to the county .						

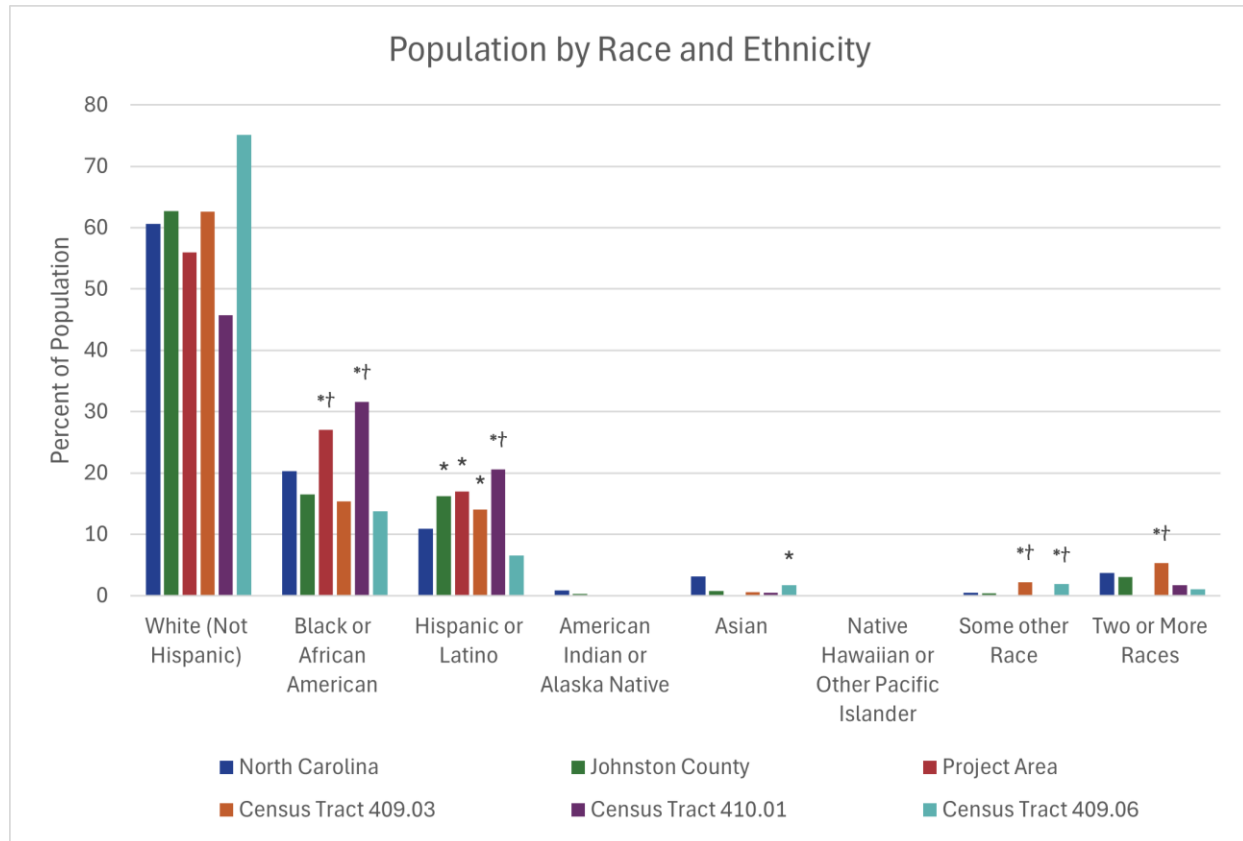


Figure 3. Race & Ethnicity percentage comparisons to the county and state

Table 4. Population of color percentage comparisons to the county and state

POPULATION OF COLOR (%)						
	NORTH CAROLINA (n=2672)	JOHNSTON COUNTY (n=53)	PROJECT AREA	CENSUS TRACT 409.03	CENSUS TRACT 410.01	CENSUS TRACT 409.06
Population of Color	39.35	37.31	44*[†]	37.41	54.27*[†]	24.89
Total Population	10,584,340	226,623	3,445	9,584	12,117	2,041
Source: US Census Bureau, 2023 American Community Survey (ACS) 5-year estimate						
All bolded* cells indicate a percentage increase of 10% or more for non-white populations in the county or census tract compared to the state .						
All bolded[†] cells indicate a percentage increase of 10% or more for non-white populations in the census tract when compared to the county .						

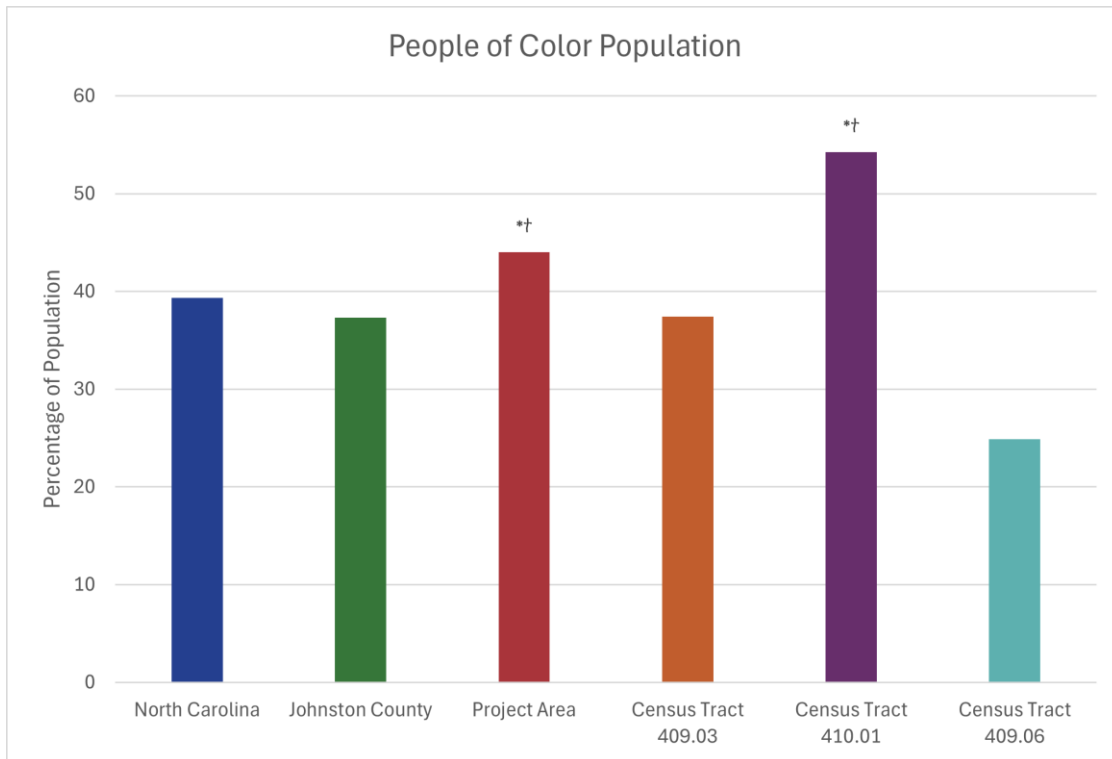


Figure 4. Population of color percentage comparisons to the county and state

5.2 Age and Sex

Potential for Concerns

- The project area, Census Tract 409.03, Census Tract 410.01, and Census Tract 409.06 have a population of individuals who are under 5 years old that is greater than 10% higher when compared to the state or county.

Results

Table 5. Median Age & Sex for North Carolina and Johnston County

MEDIAN AGE & SEX						
	NORTH CAROLINA (n=2672)			JOHNSTON COUNTY (n=53)		
	Male	Female	Both	Male	Female	Both
Median Age	37.7	40.4	39.1	37.4	39.0	38.3
Total (%)	48.92	51.08		49.33	50.67	
Source: US Census Bureau, 2023 American Community Survey (ACS) 5-year estimate						
All bolded* cells indicate a percentage increase of 10% or more in the county compared to the state .						

Table 6. Median Age & Sex for census tracts within a one-mile radius of the Duke Energy Progress, LLC – Novo Nordisk facility

MEDIAN AGE & SEX									
	CENSUS TRACT 409.03			CENSUS TRACT 410.01			CENSUS TRACT 409.06		
	Male	Female	Both	Male	Female	Both	Male	Female	Both
Median Age	30.5	32.1	30.9	30.6	30.9	30.7	48.6	40.1	42.1
Total (%)	49.25	50.75		46.17	53.83		47.38	52.62	
Source: US Census Bureau, 2023 American Community Survey (ACS) 5-year estimate									
All bolded* cells indicate a percentage increase of 10% or more in the county or census tract compared to the state .									
All bolded† cells indicate a percentage increase of 10% or more in the census tract when compared to the county .									

Table 7. Age percentage comparisons to the county and state

AGE (%)						
	NORTH CAROLINA (n=2672)	JOHNSTON COUNTY (n=53)	PROJECT AREA	CENSUS TRACT 409.03	CENSUS TRACT 410.01	CENSUS TRACT 409.06
Below 5 Years Old	5.65	6.09	8*†	8.06*†	6.91*†	6.37*
Above 65 Years Old	16.88	13.51	8	8.84	13.44	12.74
Source: US Census Bureau, 2023 American Community Survey (ACS) 5-year estimate						
All bolded* cells indicate a percentage increase of 10% or more in the county or census tract compared to the state .						
All bolded† cells indicate a percentage increase of 10% or more in the census tract when compared to the county .						

5.3 Disability

Potential for Concerns

- The population living with a disability in the area surrounding the facility is lower than the state average.

Results

Table 8. Disability percentage comparisons to the county and state

DISABILITY (%)					
	NORTH CAROLINA (n=2672)	JOHNSTON COUNTY (n=53)	CENSUS TRACT 409.03	CENSUS TRACT 410.01	CENSUS TRACT 409.06
Population with a Disability	13.33	13.02	11.36	12.30	9.16
Type of Difficulty					
Hearing	27.69	24.83	38.11^{*†}	31.22^{*†}	19.25
Vision	18.82	20.24	9.92	23.45^{*†}	32.09^{*†}
Cognitive	38.09	33.63	32.51	37.64[†]	19.79
Ambulatory	50.82	51.44	28.74	48.38	65.24^{*†}
Self-care	18.52	13.79	2.75	16.96[†]	27.27^{*†}
Independent Living	34.07	29.33	12.30	37.57^{*†}	46.52^{*†}
Source: US Census Bureau, 2023 American Community Survey (ACS) 5-year estimate					
All bolded* cells indicate a percentage increase of 10% or more in the county or census tract compared to the state .					
All bolded[†] cells indicate a percentage increase of 10% or more in the census tract when compared to the county .					

5.4 Limited English Proficiency

Potential for Concerns

- The population of Spanish-speaking households with limited-English proficiency in Johnston County and Census Tract 410.01 is greater than 5% higher when compared to the county and/or state.
- The population of German or other West Germanic language-speaking households with limited-English proficiency in Census Tract 409.06 is greater than 5% higher when compared to the state.
- The population of Russian, Polish, or other Slavic language-speaking households with limited-English proficiency in Johnston County, Census Tract 409.03, and Census Tract 410.01 is greater than 5% higher when compared to the state.
- The population of Arabic-speaking households with limited-English proficiency in Census Tract 410.01 and Census Tract 409.06 is greater than 5% higher when compared to the county and state.

Results

Table 9. Limited English Proficiency percentage comparisons to the county and state

LIMITED ENGLISH PROFICIENCY (%)					
	NORTH CAROLINA (n=2672)	JOHNSTON COUNTY (n=53)	CENSUS TRACT 409.03	CENSUS TRACT 410.01	CENSUS TRACT 409.06
Speak only English	86.98	84.67	87.83	74.13	88.38
Spanish	3.47	5.15*	1.77	8.65*†	1.26
French, Haitian, or Cajun	0.10	0	0	0	0
German or other West Germanic languages	0.04	0.03	0	0	1.36*†
Russian, Polish, or other Slavic languages	0.10	0.12*	0.24*†	2.08*†	0
Chinese (including Mandarin, Cantonese)	0.16	0.06	0	0	0
Vietnamese	0.16	0.05	0	0	0
Korean	0.08	0.02	0	0	0
Tagalog (including Filipino)	0.04	0.03	0	0	0
Other Asian and Pacific Island Languages	0.27	0.06	0	0	0
Other Indo-European Languages	0.27	0.08	0	0	0
Arabic	0.11	0.08	0	0.69*†	0.84*†
Total Population 5 Years and over	9,986,027	212,830	8,812	11,280	1,911
Source: US Census Bureau, 2023 American Community Survey (ACS) 5-year estimate					
All bolded* cells indicate a percentage increase of 5% or more in the county or census tract compared to the state .					
All bolded† cells indicate a percentage increase of 5% or more in the census tract when compared to the county .					

5.5 Educational Attainment

Potential for Concerns

- The population 18-24 years old with less than a high school education in Johnston County, Census Tract 409.03, and Census Tract 410.01 is greater than 10% higher when compared to the state.

- The population 25 and over with less than a 9th grade education in Johnston County is greater than 10% higher when compared to the state.

Results

Table 10. Educational Attainment percentage comparisons to the county and state (Populations between 18-24 years)

EDUCATIONAL ATTAINMENT (%)					
	NORTH CAROLINA (n=2672)	JOHNSTON COUNTY (n=53)	CENSUS TRACT 409.03	CENSUS TRACT 410.01	CENSUS TRACT 409.06
Less than High School Graduate	11.44	13.03*	13.44*	12.59*	0
High school graduate (includes equivalency)	34.20	36.25	20.58	44.19*†	30.38
Population age 18-24 years	999,707	18,182	967	1,247	266
Source: US Census Bureau, 2023 American Community Survey (ACS) 5-year estimate					
All bolded* cells indicate a percentage increase of 10% or more in the county or census tract compared to the state .					
All bolded† cells indicate a percentage increase of 10% or more in the census tract when compared to the county .					

Table 11. Educational Attainment percentage comparisons to the county and state (Populations age 25 years and over)

EDUCATIONAL ATTAINMENT (%)					
	NORTH CAROLINA (n=2672)	JOHNSTON COUNTY (n=53)	CENSUS TRACT 409.03	CENSUS TRACT 410.01	CENSUS TRACT 409.06
Less than 9th grade	3.97	4.52*	1.95	1.19	0
9th to 12th grade, no diploma	6.28	6.00	1.82	5.38	0
High school graduate (includes equivalency)	24.96	27.51*	25.06	29.03*	4.72
Bachelor's degree	34.72	27.63	42.60*†	28.28	20.59
Population age 25 years and over	7,261,810	151,489	5,542	7,493	1,418
Source: US Census Bureau, 2023 American Community Survey (ACS) 5-year estimate					

All bolded* cells indicate a percentage increase of 10% or more in the county or census tract compared to the state .
All bolded[†] cells indicate a percentage increase of 10% or more in the census tract when compared to the county .

5.6 Poverty and Low-income

Potential for Concerns

- Census Tract 410.01, and Census Tract 409.06 have a population below 200% of the poverty level greater than 5% higher when compared to the state and/or county.
- Census Tract 409.03 has a population below the poverty level greater than 5% higher when compared to the county.

Results

Table 12. Poverty percentage comparisons to the county and state

POVERTY (%)						
	NORTH CAROLINA (n=2672)	JOHNSTON COUNTY (n=53)	PROJECT AREA ⁸	CENSUS TRACT 409.03	CENSUS TRACT 410.01	CENSUS TRACT 409.06
Below Poverty Level	13.54	11.19		13.82[†]	9.58	8.04
Below 200% of the Poverty Level	31.99	28.45	14	25.67	37.67^{*†}	31.11[†]
Total Population for whom Poverty Status is Determined	10,186,155	223,985	3,445	9,574	12,011	2,041
Source: US Census Bureau, 2023 American Community Survey (ACS) 5-year estimate						
All bolded* cells indicate a percentage increase of 5% or more in the county or census tract compared to the state .						
All bolded[†] cells indicate a percentage increase of 5% or more in the census tract when compared to the county .						

⁸ The US EPA's tool estimates data reports the low-income population percentage for a one-mile radius. The agency defines low-income as the percent of a block group's population in households where the household income is less than or equal to twice the federal poverty level. Neither the "total population for whom poverty status is determined" nor population percentage for those "below poverty level" are reported for the one-mile radius US EPA report.

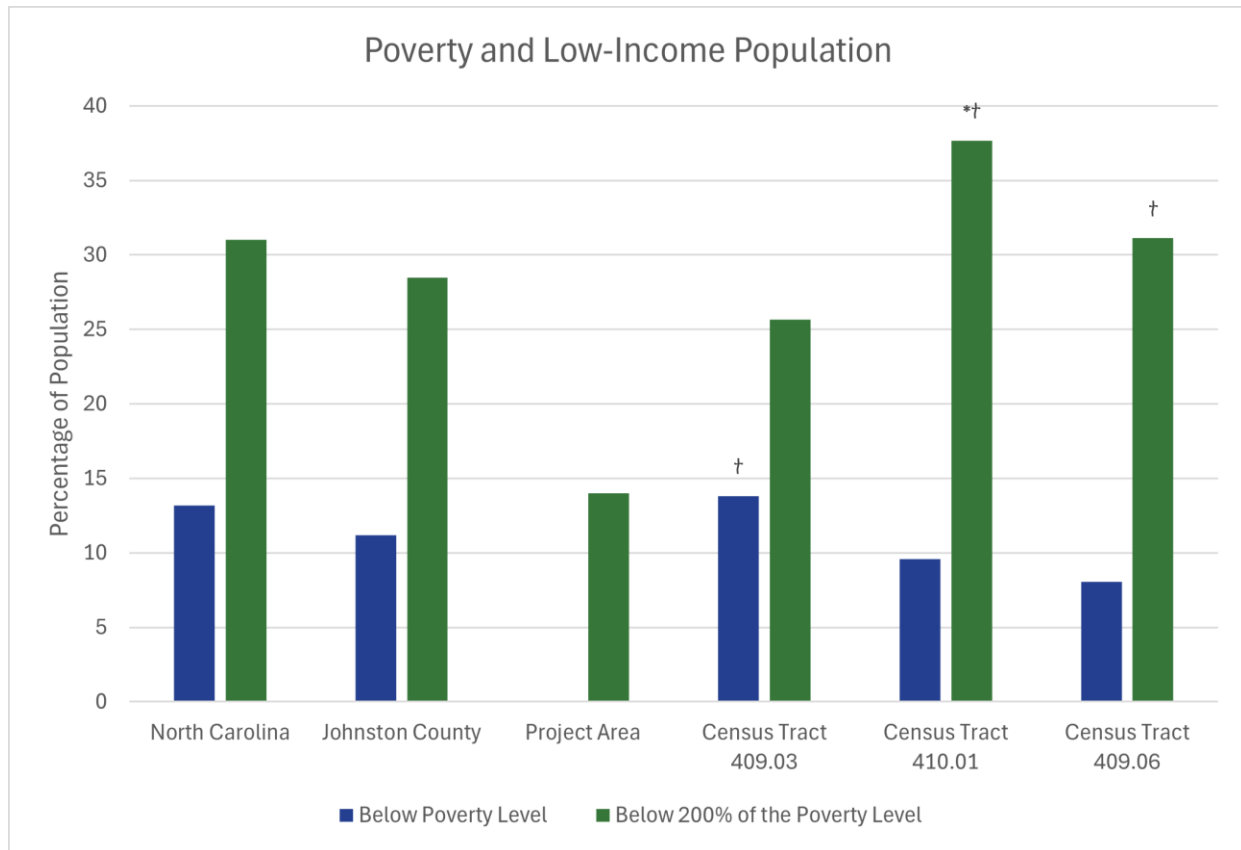


Figure 5. Poverty percentage comparisons to the county and state

6. Health & Cumulative Impacts

6.1 County Health Outcome Ranks

For this report, the Community Engagement Program examined how sensitive populations (specifically the census tracts identified in Section 4) compared to the rest of the state’s population health and well-being and community conditions. The University of Wisconsin Population Health Institute, in collaboration with the Robert Wood Johnson Foundation, calculated County Health Rankings for all the States in the United States (www.countyhealthrankings.org). This 2025 County Health Rankings National Data⁹ is based on population health and well-being (such as lifespan and self-reported health status) and community conditions (such as environmental, social, and economic conditions). **Figure 6** and **Figure 7** display rankings for all 100 counties in North Carolina on a scale from “least healthy” to “healthiest”.

Rankings are provided as a z-score value between –2 (healthiest) and 2 (least healthy), which are sorted into ranges. Out of the 100 counties in the state, Johnston County has a population health and well-being score of –0.54 and a community conditions score of –0.21. The population health and well-being score for Johnston County is not within the two least healthy ranges for the state. The community conditions score for Johnston County is not within the two least healthy ranges for the state.

⁹ County Health Rankings & Roadmaps, University of Wisconsin Population Health Institute. 2025 Annual Data Release. <https://www.countyhealthrankings.org/explore-health-rankings/rankings-data-documentation>.

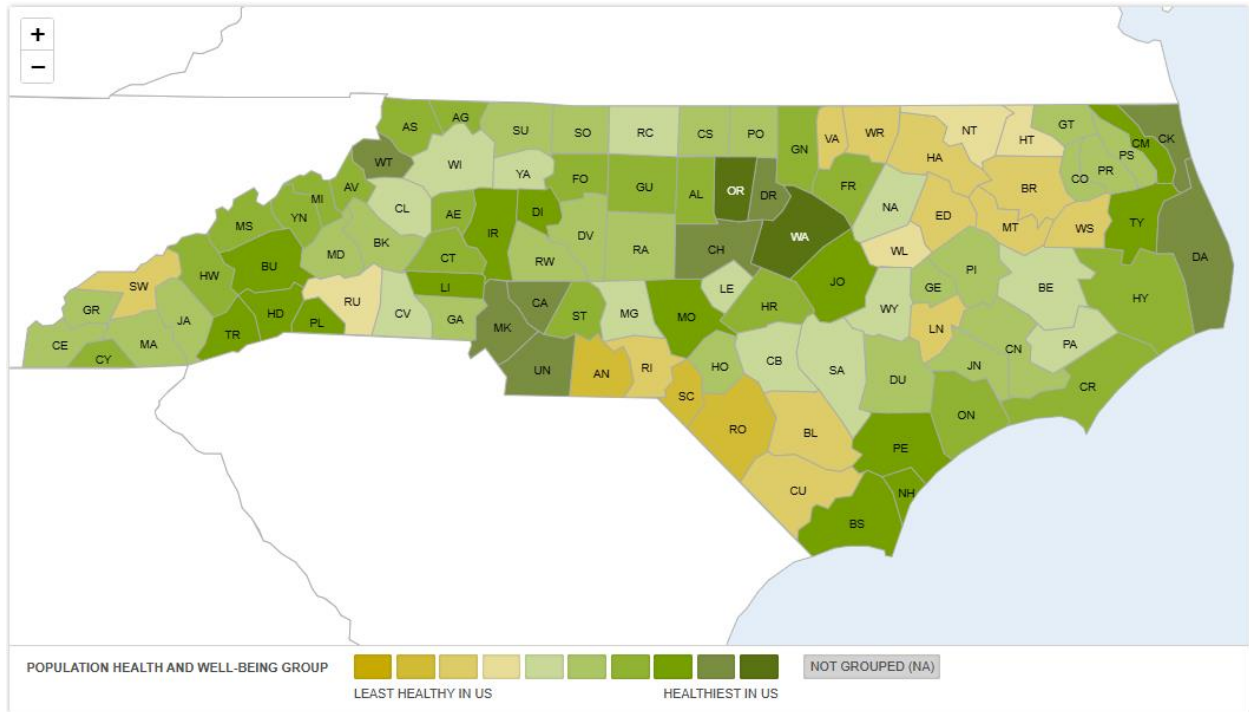


Figure 6. NC County Population Health and Well-being Ranks for 2025

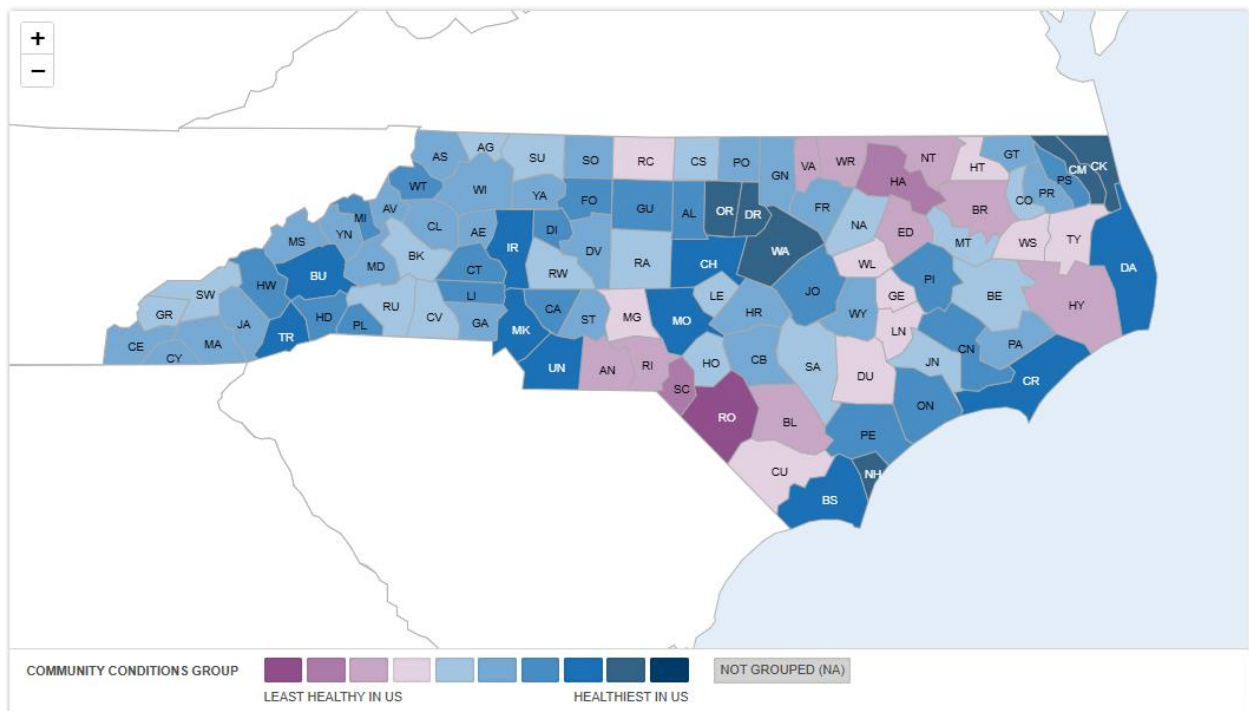


Figure 7. NC County Community Conditions Ranks for 2025

6.2 CDC/ATSDR Index

Cumulative impacts are the combined, environmental burdens, pre-existing health conditions, and social factors which may harm human health.¹⁰ At this time, there is no formal, standardized method to assess cumulative impacts. However, cumulative impacts that may affect public health and quality of life are a frequently raised concern among communities across the nation.

[CDC/ATSDR Index](#) (CDC Index) scores were sourced from the Centers for Disease Control and Prevention (CDC) and the Agency for Toxic Substances and Disease Registry (ATSDR; See Appendix E for more information on the CDC's Index score and model). CDC Index scores and **Figure 8**, were sourced from the CDC (See Appendix B).

The CDC Index a single score ranging from 0.0 – 1.0 with a score of 1.0 representing a community with the highest environmental burdens for each census tract. The composite score is calculated from a variety of social, environmental, and health indicators. The CDC Index considers census tracts with a score between 0.75 – 1.0 to be highly burdened areas. The CDC Index estimates that 13.7% of North Carolina residents live in highly burdened areas (See Appendix E).

According to the CDC Index, Census Tract 409.03 and Census Tract 410.01 – where Duke Energy Progress, LLC – Novo Nordisk is located – have CDC Index score of 0.18 and 0.46, respectively (**Figure 8**). This means 18% of census tracts in the United States have less environmental burden than Census Tract 409.03 and that 82% of census tracts in the United States have higher environmental burden. 46% of census tracts in the United States have less environmental burden than Census Tract 410.01 and 54% of census tracts in the United States have a higher environmental burden. Within a one-mile radius of the facility, Census Tract 409.06 has a score of 0.18, meaning 18% of census tracts in the United States have less environmental burden than Census Tract 409.03 and 82% of census tracts in the United States have higher environmental burdens. According to the CDC's definition, no census tracts within a mile of the facility are considered highly burdened areas (**Table 13**).

Table 13. CDC/ATSDR Index

CDC/ATSDR Index			
Census Tract	Environmental Burden Rank	Social Vulnerability CDC Index	CDC Index Rank
409.03	0.40	0.33	0.18
410.01	0.48	0.73	0.46
409.06	0.44	0.30	0.18
A * bolded value indicates that the census tract has a rank in the top 25 th percentile.			

¹⁰ *Federal Health Agencies Unveil National Tool to Measure Health Impacts of Environmental Burdens*. (2022). Centers for Disease Control and Prevention (CDC). <https://archive.cdc.gov/#/details?url=https://www.cdc.gov/media/releases/2022/p0810-environmental-burdens.html>

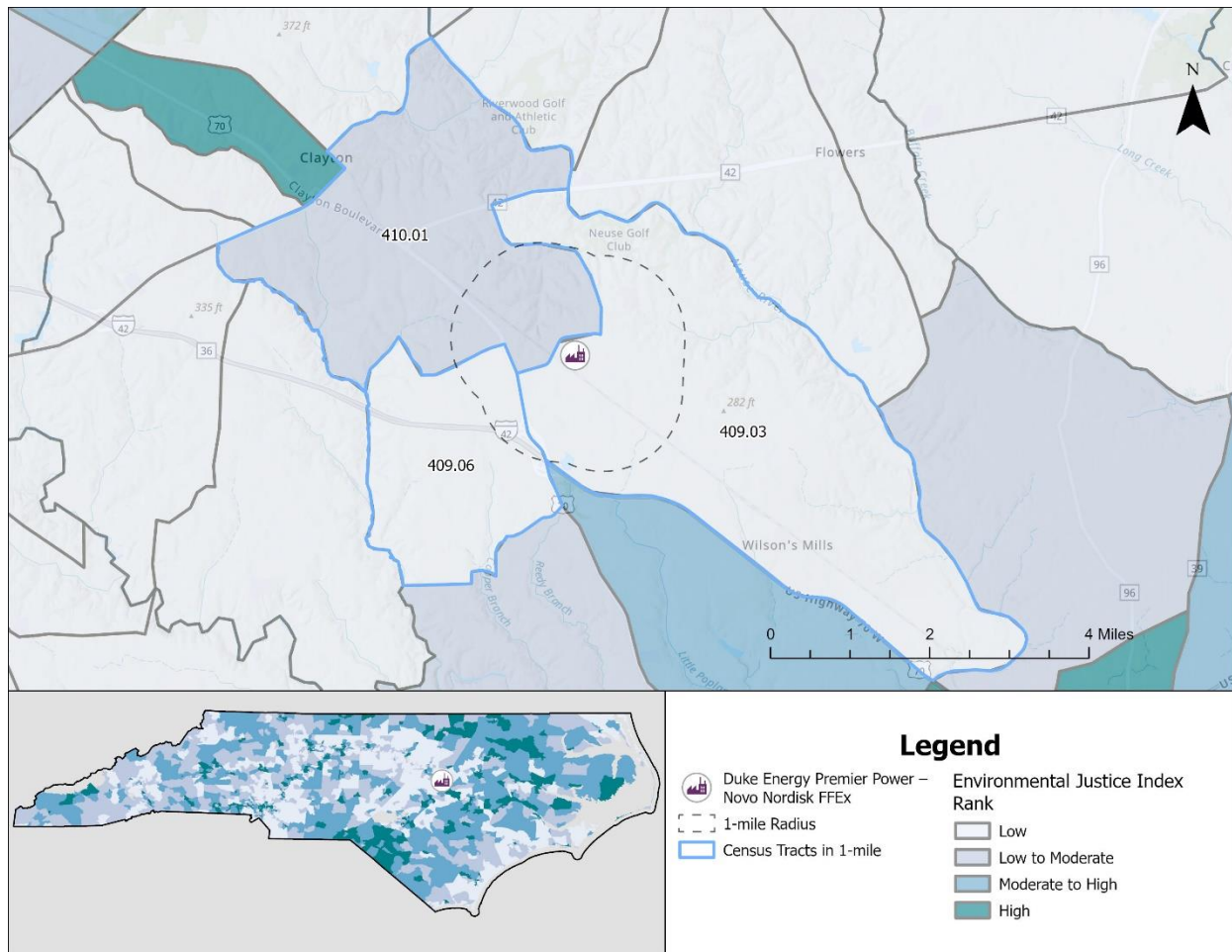


Figure 8. Census tracts within the one-mile radius and corresponding CDC Index scores

6.3 US EPA's Indexes

The [US EPA's Indexes](#) (EPA Indexes) analyze the relative potential vulnerability of an area as compared to the state, as well as the U.S., in the form of a percentile from 0 to 100. The higher the EPA Index, the higher the percentile, and the more vulnerable an area. The EPA Indexes combines demographic data to the listed environmental indicators:

- particulate matter,
- ozone,
- nitrogen dioxide (NO₂),
- diesel particulate matter,
- toxic releases to air, traffic proximity,
- lead paint,
- superfund proximity,
- Risk Management Program (RMP) facility proximity,
- hazardous waste proximity,
- underground storage tanks,
- wastewater discharge, and

- drinking water non-compliance.

Figure 9 displays the EPA Indexes as calculated with US EPA data within the one-mile radius of the facility. The area within one-mile of the facility is not in the top 25th percentile in the state or nation for any EPA Index.

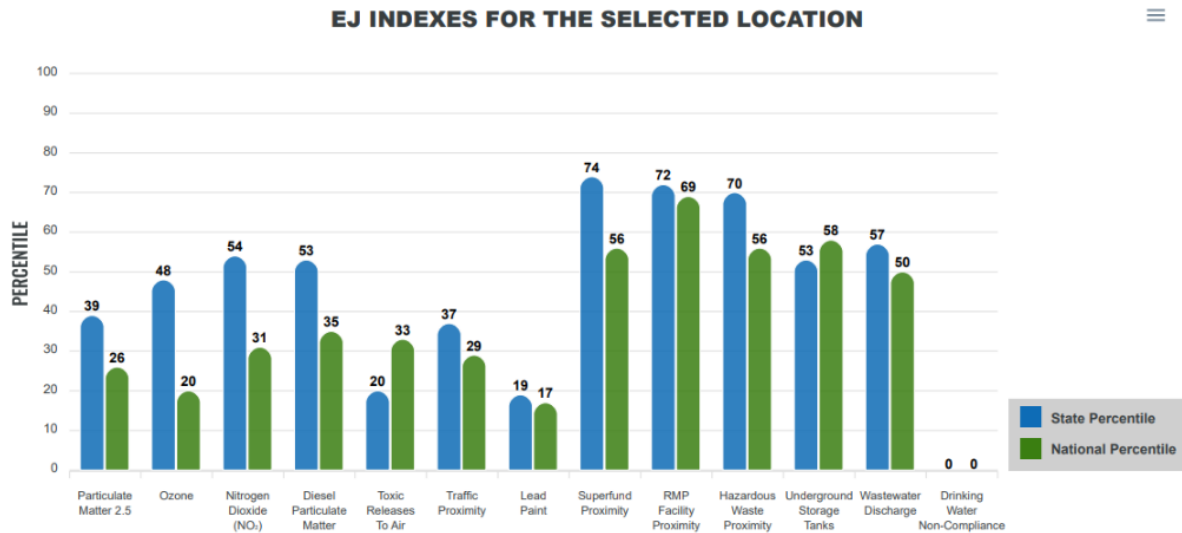


Figure 9. EPA Indexes for a one-mile radius around the Duke Energy Progress, LLC – Novo Nordisk facility

6.4 Local Industrial Sites

According to the NCDEQ Community Mapping System, there are a total of 21 permits and 9 incidents within the one-mile radius of the Duke Energy Progress, LLC – Novo Nordisk facility as of February, 2025 (**Figure 10; Table 14**). There are currently 8 permits listed at the Novo Nordisk Pharmaceutical facility:

- 1 Air Quality Permit
- 1 NPDES Wastewater Treatment Facility Permit
- 1 Hazardous Waste sites
- 5 NPDES Stormwater Permits

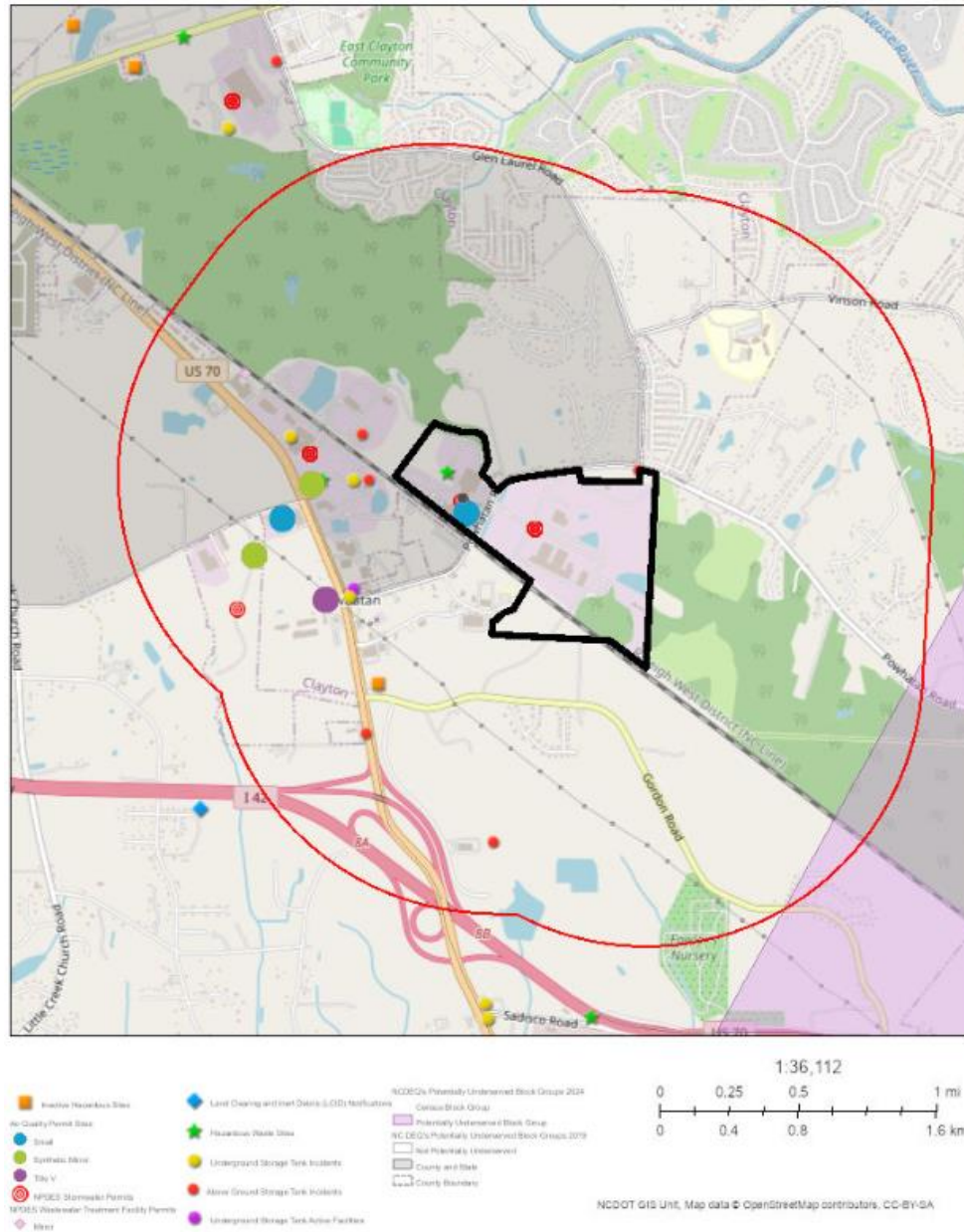


Figure 10. NCDEQ Community Mapping Tool Snapshot of the one-mile Project Area Radius

Table 14. List of Permits, Incidents, and Sites within the one-mile Project Area Radius

List of Permits, Incidents, and Sites		
Type	Quantity	Details
Permits	21	5 – Air Quality Permit Sites 1 – NPDES Wastewater Treatment Facility Permits 3 – Hazardous Waste Sites 12 – NPDES Stormwater Permits
Incidents	9	5 – Above Ground Storage Tank Incidents 4 – Underground Storage Tank Active Facilities

7. Local Sensitive Receptors

The US EPA suggests that sensitive receptors include, but are not limited to, hospitals, schools, daycare facilities, elderly housing, and convalescent facilities. These are areas where the occupants are more susceptible to the adverse effects of exposure to toxic chemicals, pesticides, and other pollutants. Extra care must be taken when dealing with contaminants and pollutants in close proximity to areas recognized as sensitive receptors. For instance, children and the elderly may have a higher risk of developing asthma from elevated levels of certain air pollutants than healthy individuals aged between 18 and 64.

Within and near the one-mile radius surrounding the facility location, the following US EPA and NCDEQ-identified sensitive receptors are listed below (**Table 15; Figure 11**):

Table 15. List of Sensitive Receptors within the One-Mile Project Area Radius

Sensitive Receptor Type	Name
SCHOOLS & DAYCARES	Powhatan Elementary School
	Childcare Network
PLACES OF WORSHIP	Powhatan Original Free Will Baptist Church
	New Bethel Church
COMMUNITY CENTERS	East Clayton Community Park

Additional sensitive receptors may be identified during the remainder of the permit application process.

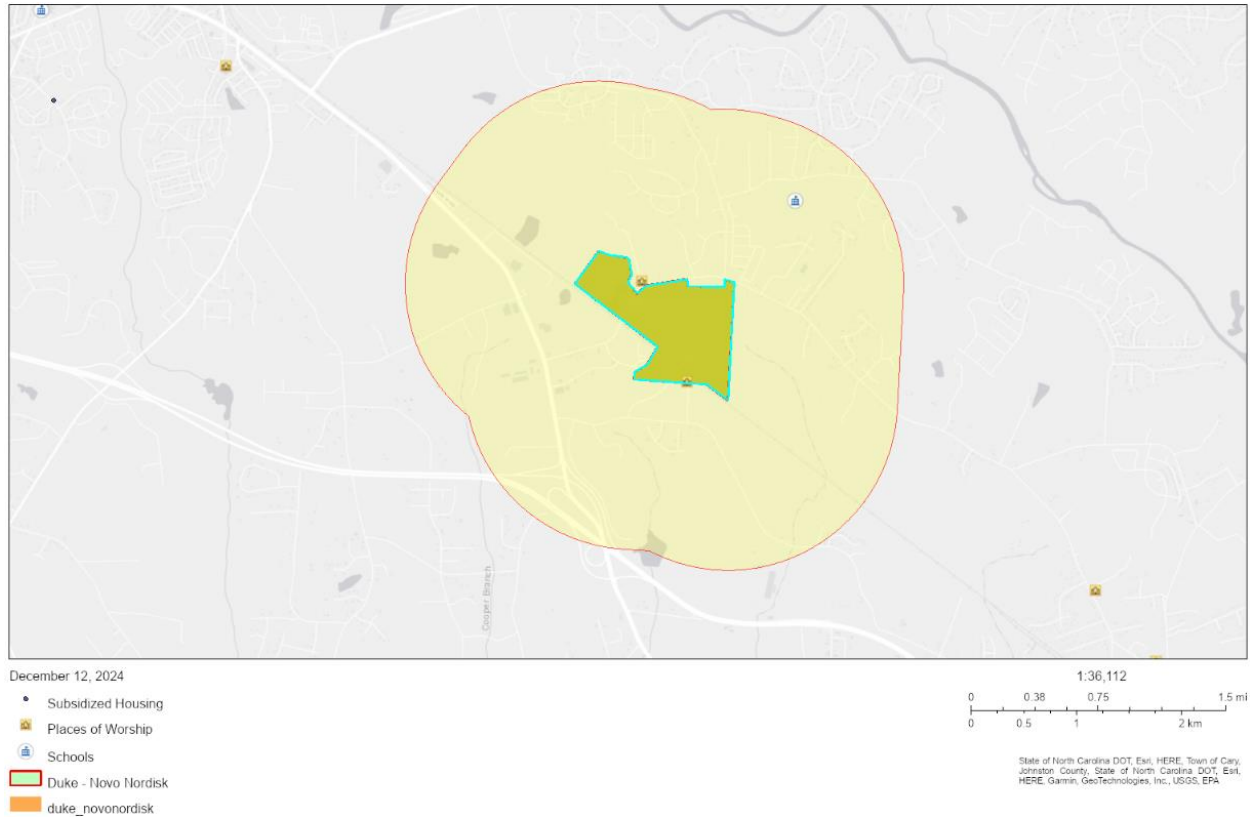


Figure 11. US EPA Snapshot of Potential Sensitive Receptors within the One-Mile Project Area Radius

8. Conclusion

If an affected community has a large percentage of LEP individuals (typically greater than 5%), the Department will implement appropriate LEP measures. These measures may include having a bilingual NCDEQ staff member or interpreter present at public hearings or information sessions, disseminating Department information sheets or public notices in multiple languages, distributing media notices in different languages, or communicating with community organizations and leaders to determine other appropriate measures to reach LEP individuals.

Key Findings

Based on this report's analysis and using North Carolina Department of Environmental Quality (NCDEQ) Potentially Underserved Block Groups (on the basis of Race/Ethnicity and Poverty) and standard guidelines established by the US EPA and in National Environmental Policy Act (NEPA) documentation, the potential concerns for particular populations within an area of interest of Duke Energy Progress, LLC – Novo Nordisk facility have been identified as follows:

- **Race and Ethnicity:**
 - Total people of color populations in the project area and Census Tract 410.01.
 - The following race/ethnic population categories:
 - Black or African American
 - Hispanic or Latino

- Asian
- **Tribal Communities:**
 - The Triangle Native American Society serves Native Americans/Indigenous individuals in Johnston County
- **Age and Sex:** Populations of individuals 5 years or younger in the project area, Census Tract 409.03, Census Tract 410.01, and Census Tract 409.06.
- **Limited English Proficiency:** Households that speak the following language categories with limited English-speaking proficiency:
 - Spanish
 - German or other West Germanic languages
 - Russian, Polish, or other Slavic languages
 - Arabic
- **Education:** Populations of individuals at least 18 years and older whose highest educational attainment is less than a high school graduate (or equivalency) in Census Tracts 409.03 and 410.01.
- **Poverty:** Populations experiencing poverty below 200% of the poverty level or below the poverty level in Census Tracts 409.03, 410.01, and 409.06.

Recommendations

Based on the sociodemographic indicator analysis, the Community Engagement Program recommends the following outreach and engagement for the Duke Energy Progress, LLC – Novo Nordisk Title V permit application public commenting period:

- Public notices and one-page fact sheets with public comment and public hearing information in English and Spanish.
- Consultation with community leaders about other outreach recommendations including known local American Indian-serving or related organizations and leaders.
- Mailed or emailed public notices and one-page fact sheets in English and Spanish to local sensitive receptors and the Town of Clayton.
- Evaluate options to distribute one-page fact sheets in English and Spanish in high-traffic community areas.
- Arrange an English and Spanish voicemail line to receive public comments.

Appendix

Appendix A: U.S. Census Data Sources

All data for this report accessed from data.census.gov and collected at a census tract level for all tracts in North Carolina. Data is from 2023 American Community Survey (ACS) 5-year estimates.

Dataset ID	Name
B03002	“Hispanic or Latino Origin by Race”
S0101	“Age and Sex”
S1810	“Disability Characteristics”
C16001	“Language Spoken at Home for the Population 5 Years and Older”
S1501	“Educational Attainment”
S1701	“Poverty Status in the Last 12 Months”

Appendix B: Additional Data Sources

DATA SOURCES			
Organization	Source	Date Accessed	Year Published
NC Department of Commerce	2025 County Distress Rankings	2/10/25	2025
University of Wisconsin Population Health Institute	2025 County Health Rankings National Data	2/10/25	2025
CDC/ATSDR	ATSDR Index	3/14/25	2025

Appendix C: Sociodemographic Indicators and US EPA Report

The tables below display estimates and margins of error as available from the U.S. Census Bureau 2023 ACS 5-year estimates and calculations performed for each sociodemographic indicator. Calculations are displayed as averages and upper and lower confidence intervals.

Race & Ethnicity

RACE & ETHNICITY										
	NORTH CAROLINA (n=2672)					JOHNSTON COUNTY (n=53)				
	Estimate	MOE (+/-)	Average	95% CI (+/-)		Estimate	MOE (+/-)	Average	95% CI (+/-)	
				Lower	Upper				Lower	Upper
White	6,419,285	3,661	2402.43	2348.06	2456.80	142,071	805	2680.58	2295.72	3065.45
Black or African American	2,147,308	6,402	803.63	770.70	836.56	37,414	727	705.92	521.20	890.65
Hispanic or Latino	1,158,750	0	433.66	415.32	452.01	36,811	0	694.55	563.18	825.91
American Indian and Alaska Native	89,481	1,201	33.49	25.60	41.38	614	208	11.58	4.42	18.75
Asian	330,720	2,729	123.77	112.40	135.15	1,785	291	33.68	22.72	44.64
Native Hawaiian and other Pacific Islander	5,548	614	2.08	1.62	2.53	79	82	1.49	-0.30	3.28
Some Other Race	46,117	3,192	17.26	15.63	18.89	957	513	18.06	4.13	31.98
Two or More Races	387,131	7,694	144.88	139.59	150.18	6,892	1,092	130.04	89.54	170.54
Total Population	10,584,340					226,623				

RACE & ETHNICITY						
	CENSUS TRACT 409.03		CENSUS TRACT 410.01		CENSUS TRACT 409.06	
	Estimate	MOE (+/-)	Estimate	MOE (+/-)	Estimate	MOE (+/-)
White	5,999	1,049	5,541	937	1,533	300
Black or African American	1,472	489	3,826	493	281	178
Hispanic or Latino	1,342	533	2,492	580	133	142
American Indian and Alaska Native	4	6	0	21	0	14
Asian	54	39	55	60	35	32
Native Hawaiian and other Pacific Islander	0	19	0	21	0	14
Some Other Race	207	328	0	21	38	60
Two or More Races	506	333	203	178	21	28
Total Population	9,584		12,117		2,041	

Age & Sex

AGE										
	NORTH CAROLINA (n=2672)					JOHNSTON COUNTY (n=53)				
	Estimate	MOE (+/-)	Average	95% CI (+/-)		Estimate	MOE (+/-)	Average	95% CI (+/-)	
				Lower	Upper				Lower	Upper
≤5 Years	598,313	714	223.92	217.62	230.21	13,793	42	260.25	213.90	306.59
≥65 Years	1,787,027	840	668.80	654.32	683.27	30,615	74	577.64	491.98	663.30
SEX										
Male	5,177,887	1,414	1937.83	1903.20	1972.46	111,795	110	2109.34	1812.68	2406.00
Female	5,406,453	1,484	2023.37	1987.97	2058.78	114,828	110	2166.57	1859.86	2473.27

AGE						
	CENSUS TRACT 409.03		CENSUS TRACT 410.01		CENSUS TRACT 409.06	
	Estimate	MOE (+/-)	Estimate	MOE (+/-)	Estimate	MOE (+/-)
≤5 Years	772	294	837	333	130	77
≥65 Years	847	229	1,629	432	260	41
SEX						
Male	4,720	758	5,595	762	967	135
Female	4,864	579	6,522	636	1,074	175

Disability

DISABILITY										
	NORTH CAROLINA (n=2672)					JOHNSTON COUNTY (n=53)				
	Estimate	MOE (+/-)	Average	95% CI (+/-)		Estimate	MOE (+/-)	Average	95% CI (+/-)	
				Lower	Upper				Lower	Upper
Population with a Disability	1,386,506	10,541	518.90	508.16	529.65	29,279	1,690	552.43	476.22	628.65
Type of Difficulty										
Hearing	383,698	10,541	143.60	139.79	147.41	7,269	710	137.15	109.11	165.19
Vision	261,386	5,572	97.82	94.63	101.01	5,927	1,100	111.83	79.55	144.11
Cognitive	535,055	5,645	200.25	195.06	205.43	9,846	820	185.77	154.27	217.28
Ambulatory	696,828	7,066	260.79	254.52	267.06	15,062	1,180	284.19	237.18	331.20
Self-care	252,232	6,705	94.40	91.38	97.41	4,039	554	76.21	59.94	92.47
Independent Living	466,517	4,769	174.59	170.02	179.17	8,587	803	162.02	132.49	191.55
Total civilian noninstitutionalized population	10,366,704	2,441				224,851	158			

DISABILITY						
	CENSUS TRACT 409.03		CENSUS TRACT 410.01		CENSUS TRACT 409.06	
	Estimate	MOE (+/-)	Estimate	MOE (+/-)	Estimate	MOE (+/-)
Population with a Disability	1089	504	1480	416	187	84
Type of Difficulty						
Hearing	415	263	462	261	36	30
Vision	108	94	347	205	60	63
Cognitive	354	195	557	274	37	41
Ambulatory	313	136	716	259	122	70
Self-care	30	40	251	156	51	44
Independent Living	134	87	556	185	87	65
Total civilian noninstitutionalized population	9,584	1,177	12,036	1,055	2,041	251

Limited English Proficiency

LIMITED ENGLISH PROFICIENCY										
	NORTH CAROLINA (n=2672)					JOHNSTON COUNTY (n=53)				
	Estimate	MOE (+/-)	Average	95% CI (+/-)		Estimate	MOE (+/-)	Average	95% CI (+/-)	
				Lower	Upper				Lower	Upper
Speak only English	8,685,846	10,932	3250.69	3195.41	3305.97	180,203	1,718	3400.06	2912.24	3887.87
Spanish	346,393	6,442	129.64	121.65	137.62	10,952	858	206.64	151.66	261.62
French, Haitian, or Cajun	9,907	1,591	3.71	2.90	4.52	0	32	0.00	0.00	0.00
German or other West Germanic languages	3,643	714	1.36	0.96	1.77	54	58	1.02	-0.20	2.24
Russian, Polish, or other Slavic languages	10,007	1,187	3.75	3.09	4.40	256	341	4.83	-3.88	13.54
Chinese (including Mandarin, Cantonese)	16,417	1,301	6.14	5.20	7.09	119	124	2.25	-0.78	5.27
Vietnamese	15,622	1,792	5.85	4.56	7.13	112	112	2.11	-0.81	5.03
Korean	7,532	741	2.82	2.26	3.38	35	47	0.66	-0.63	1.95
Tagalog (including Filipino)	4,281	646	1.60	1.27	1.93	67	82	1.26	-0.68	3.21
Other Asian and Pacific Island Languages	26,602	1,464	9.96	8.73	11.18	124	127	2.34	-0.60	5.28
Other Indo-European Languages	26,989	2,016	10.10	8.77	11.43	166	152	3.13	-0.77	7.03
Arabic	10,907	1,339	4.08	3.31	4.86	176	127	3.32	0.05	6.59
Total Population 5 Years and over	9,986,027	714				212,830	42			

LIMITED ENGLISH PROFICIENCY						
	CENSUS TRACT 409.03		CENSUS TRACT 410.01		CENSUS TRACT 409.06	
	Estimate	MOE (+/-)	Estimate	MOE (+/-)	Estimate	MOE (+/-)
Speak only English	7,740	1,112	8,362	1,371	1,689	172
Spanish	156	79	976	632	24	44
French, Haitian, or Cajun	0	19	0	21	0	14
German or other West Germanic languages	0	19	0	21	26	42
Russian, Polish, or other Slavic languages	21	33	235	339	0	14
Chinese (including Mandarin, Cantonese)	0	19	0	21	0	14
Vietnamese	0	19	0	21	0	14
Korean	0	19	0	21	0	14
Tagalog (including Filipino)	0	19	0	21	0	14
Other Asian and Pacific Island Languages	0	19	0	21	0	14
Other Indo-European Languages	0	19	0	21	0	14
Arabic	0	19	78	110	16	26
Total Population 5 Years and over	8,812	1,038	11,280	1,003	1,911	222

Educational Attainment

EDUCATIONAL ATTAINMENT										
	NORTH CAROLINA (n=2672)					JOHNSTON COUNTY (n=53)				
	Estimate	MOE (+/-)	Average	95% CI (+/-)		Estimate	MOE (+/-)	Average	95% CI (+/-)	
				Lower	Upper				Lower	Upper
Less than High School Graduate	114,342	2,700	42.79	40.86	44.73	2,369	387	44.70	30.38	59.02
High school graduate (includes equivalency)	341,857	4,141	127.94	120.27	135.61	6,591	582	124.36	95.84	152.88
Population age 18-24 years	999,707					18,182				
Less than 9th grade	288,456	4,800	107.96	103.40	112.51	6,852	737	129.28	99.77	158.80
9th to 12th grade, no diploma	456,125	7,346	170.71	165.41	176.00	9,089	925	171.49	136.91	206.07
High school graduate (includes equivalency)	1,812,528	12,817	678.34	663.53	693.15	41,679	1,811	786.40	674.22	898.58
Bachelor's degree	2,521,353	18,699	943.62	913.88	973.36	41,857	2,022	789.75	602.41	977.10
Population age 25 years and over	7,261,810					151,489				

EDUCATIONAL ATTAINMENT						
	CENSUS TRACT 409.03		CENSUS TRACT 410.01		CENSUS TRACT 409.06	
	Estimate	MOE (+/-)	Estimate	MOE (+/-)	Estimate	MOE (+/-)
Less than High School Graduate	130	144	157	140	0	14
High school graduate (includes equivalency)	199	119	551	285	82	65
Population age 18-24 years	967		1,247		266	
Less than 9th grade	108	103	89	106	0	14
9th to 12th grade, no diploma	101	52	403	244	67	43
High school graduate (includes equivalency)	1,389	333	2,175	524	292	115
Bachelor's degree	2,361	381	2,119	500	578	159
Population age 25 years and over	5,542		7,493		1,418	

Poverty & Low Income

POVERTY										
	NORTH CAROLINA (n=2672)					JOHNSTON COUNTY (n=53)				
	Estimate	MOE (+/-)	Average	95% CI (+/-)		Estimate	MOE (+/-)	Average	95% CI (+/-)	
				Lower	Upper				Lower	Upper
Below Poverty Level	1,355,827	16,940	507	492	523	25,065	2,847	473	366	580
Below 200% of the Poverty Level	3,195,199	26,486	1,196	1,168	1,224	63,729	3,694	1,202	994	1,411
Total Population for whom Poverty Status is Determined	10,297,193	2,274				223,985	509			

POVERTY						
	CENSUS TRACT 409.03		CENSUS TRACT 410.01		CENSUS TRACT 409.06	
	Estimate	MOE (+/-)	Estimate	MOE (+/-)	Estimate	MOE (+/-)
Below Poverty Level	1,323	578	1,151	901	164	145
Below 200% of the Poverty Level	2,458	774	4,524	1,238	635	246
Total Population for whom Poverty Status is Determined	9,574	1,177	12,011	1,057	2,041	251

US EPA Report

The following ACS 2018-2022 report shows the demographics and information provided through US EPA for the one-mile radius around the Duke Energy Progress, LLC – Novo Nordisk facility.

12/12/24, 8:21 AM

EJScreen Community Report

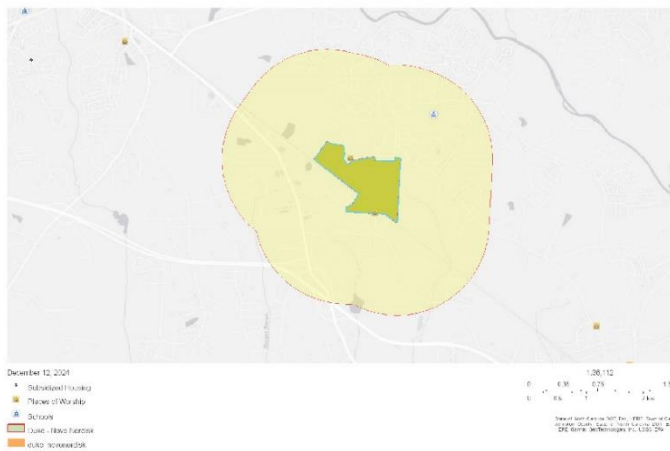


EJScreen Community Report

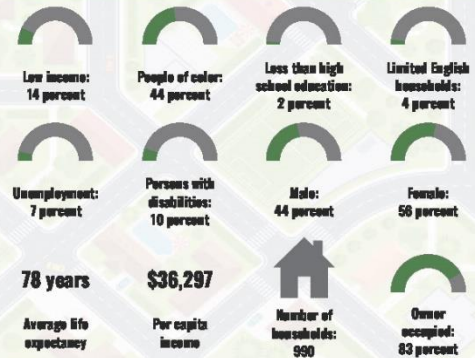
This report provides environmental and socioeconomic information for user-defined areas, and combines that data into environmental justice and supplemental indexes.

Duke - Novo Nordisk

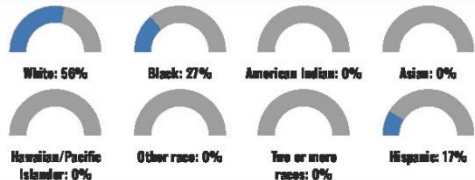
1 mile Ring around the Area
Population: 3,445
Area in square miles: 6.65



COMMUNITY INFORMATION



BREAKDOWN BY RACE



BREAKDOWN BY AGE



LIMITED ENGLISH SPEAKING BREAKDOWN



Notes: Numbers may not sum to totals due to rounding. Hispanic population can be of any race. Source: U.S. Census Bureau, American Community Survey (ACS) 2013-2022. Life expectancy data comes from the Centers for Disease Control.

LANGUAGES SPOKEN AT HOME

LANGUAGE	PERCENT
English	84%
Spanish	12%
Other Indo-European	1%
Arabic	2%
Total Non-English	16%

Report for 1 mile Ring around the Area

Report produced December 12, 2024 using EJSscreen Version 2.3

12/12/24, 8:21 AM

EJScreen Community Report

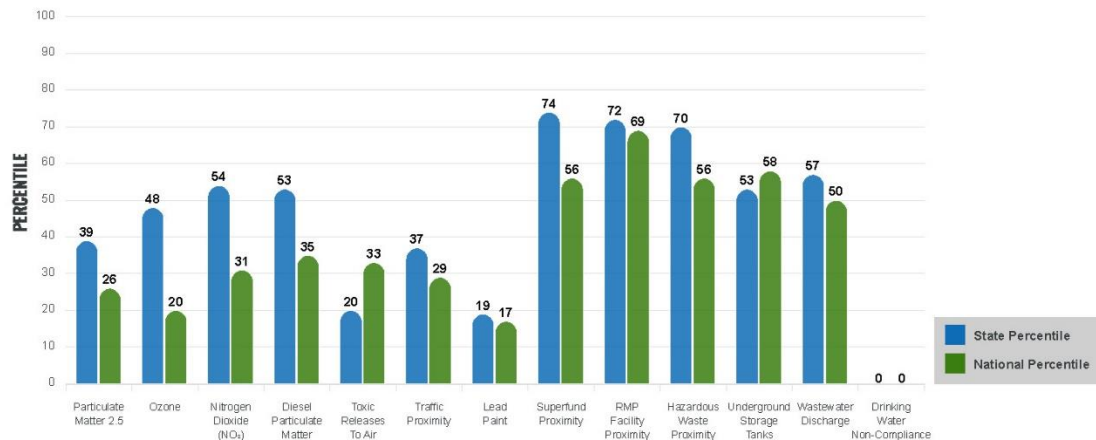
Environmental Justice & Supplemental Indexes

The environmental justice and supplemental indexes are a combination of environmental and socioeconomic information. There are thirteen EJ Indexes and supplemental indexes in EJScreen reflecting the 13 environmental indicators. The indexes for a selected area are compared to those for all other locations in the state or nation. For more information and calculation details on the EJ and supplemental indexes, please visit the [EJScreen website](#).

EJ INDEXES

The EJ indexes help users screen for potential EJ concerns. To do this, the EJ index combines data on low income and people of color populations with a single environmental indicator.

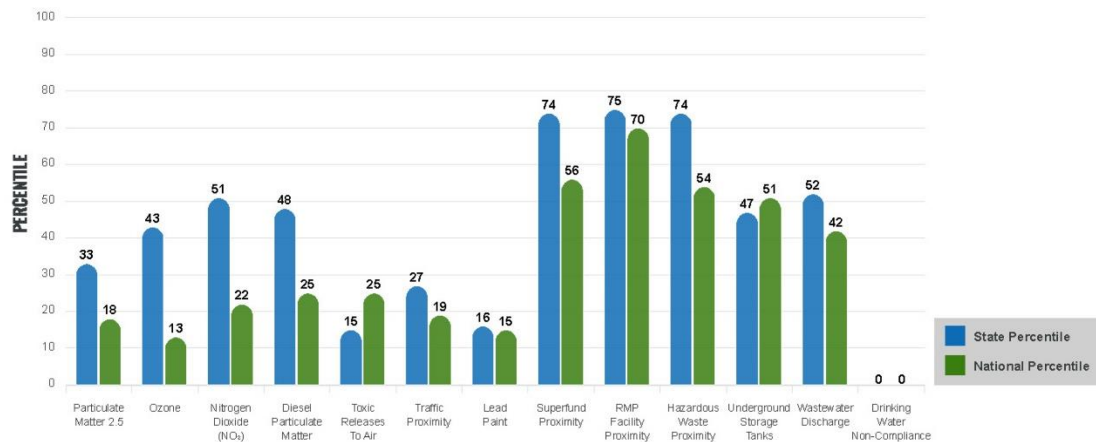
EJ INDEXES FOR THE SELECTED LOCATION



SUPPLEMENTAL INDEXES

The supplemental indexes offer a different perspective on community-level vulnerability. They combine data on percent low income, percent persons with disabilities, percent less than high school education, percent limited English speaking, and percent low life expectancy with a single environmental indicator.

SUPPLEMENTAL INDEXES FOR THE SELECTED LOCATION



Report for 1 mile Ring around the Area

Report produced December 12, 2024 using EJScreen Version 2.3

12/12/24, 8:21 AM

EJScreen Community Report

EJScreen Environmental and Socioeconomic Indicators Data

SELECTED VARIABLES	VALUE	STATE AVERAGE	PERCENTILE IN STATE	USA AVERAGE	PERCENTILE IN USA
ENVIRONMENTAL BURDEN INDICATORS					
Particulate Matter 2.5 ($\mu\text{g}/\text{m}^3$)	7.03	6.99	40	8.45	19
Ozone (ppb)	53.7	54	47	61.8	15
Nitrogen Dioxide (NO_2) (ppbv)	5	5	56	7.8	23
Diesel Particulate Matter ($\mu\text{g}/\text{m}^3$)	0.097	0.102	52	0.191	27
Toxic Releases to Air (toxicity-weighted concentration)	130	3,100	19	4,600	26
Traffic Proximity (daily traffic count/distance to road)	150,000	690,000	31	1,700,000	22
Lead Paint (% Pre-1960 Housing)	0.017	0.17	21	0.3	18
Superfund Proximity (site count/km distance)	0.00034	0.11	74	0.39	56
RMP Facility Proximity (facility count/km distance)	1.3	0.29	95	0.57	86
Hazardous Waste Proximity (facility count/km distance)	2	0.94	85	3.5	59
Underground Storage Tanks (count/km ²)	1.5	3.8	55	3.6	58
Wastewater Discharge (toxicity-weighted concentration/m distance)	35	1300	60	700000	46
Drinking Water Non-Compliance (points)	0	0.58	0	2.2	0
SOCIOECONOMIC INDICATORS					
Demographic Index USA	1.01	N/A	N/A	1.34	43
Supplemental Demographic Index USA	1.25	N/A	N/A	1.64	31
Demographic Index State	1.12	1.49	40	N/A	N/A
Supplemental Demographic Index State	1.47	1.91	26	N/A	N/A
People of Color	44%	37%	63	40%	61
Low Income	14%	34%	18	30%	25
Unemployment Rate	7%	5%	73	6%	71
Limited English Speaking Households	3%	2%	81	5%	70
Less Than High School Education	2%	11%	18	11%	20
Under Age 5	8%	5%	75	5%	74
Over Age 64	8%	18%	15	18%	17

*Diesel particulate matter index is from the EPA's Air Toxics Data Update, which is the Agency's ongoing, comprehensive evaluation of air toxics in the United States. This effort aims to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that the air toxics data presented here provide broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the Air Toxics Data Update can be found at: <https://www.epa.gov/region9/air-toxics-data-update>.

Sites reporting to EPA within defined area:

Superfund	0
Hazardous Waste, Treatment, Storage, and Disposal Facilities	3
Water Dischargers	6
Air Pollution	5
Brownfields	0
Toxic Release Inventory	5

Other community features within defined area:

Schools	1
Hospitals	0
Places of Worship	2

Other environmental data:

Air Non-attainment	Yes
Impaired Waters	No

Selected location contains American Indian Reservation Lands*	No
Selected location contains a "Justice40 (CEJST)" disadvantaged community	No
Selected location contains an EPA IRA disadvantaged community	No

Report for 1 mile Ring around the Area

Report produced December 12, 2024 using EJScreen Version 2.3

12/12/24, 8:21 AM

EJScreen Community Report

EJScreen Environmental and Socioeconomic Indicators Data

HEALTH INDICATORS					
INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Low Life Expectancy	20%	21%	44	20%	57
Heart Disease	5	6.1	29	5.8	37
Asthma	9.9	10.1	48	10.3	42
Cancer	5.9	6.5	31	6.4	36
Persons with Disabilities	10.5%	14.2%	28	13.7%	33

CLIMATE INDICATORS					
INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Flood Risk	4%	10%	28	12%	38
Wildfire Risk	0%	9%	80	14%	77

CRITICAL SERVICE GAPS					
INDICATOR	VALUE	STATE AVERAGE	STATE PERCENTILE	US AVERAGE	US PERCENTILE
Broadband Internet	12%	14%	51	13%	57
Lack of Health Insurance	12%	11%	63	9%	76
Housing Burden	No	N/A	N/A	N/A	N/A
Transportation Access Burden	Yes	N/A	N/A	N/A	N/A
Food Desert	Yes	N/A	N/A	N/A	N/A

Report for 1 mile Ring around the Area

Report produced December 12, 2024 using EJScreen Version 2.3

Appendix D: County-Level Health Rankings

County health ranks and corresponding quartiles for both the health outcomes and health factors categories were taken from the University of Wisconsin Population Health Institute 2025 County Health Rankings National Data. Distributions of z-score ranges as reported by the 2025 County Health Rankings National Data for data present in the state of North Carolina for population health and well-being and community conditions are represented in **Figure 12** and **Figure 13**.

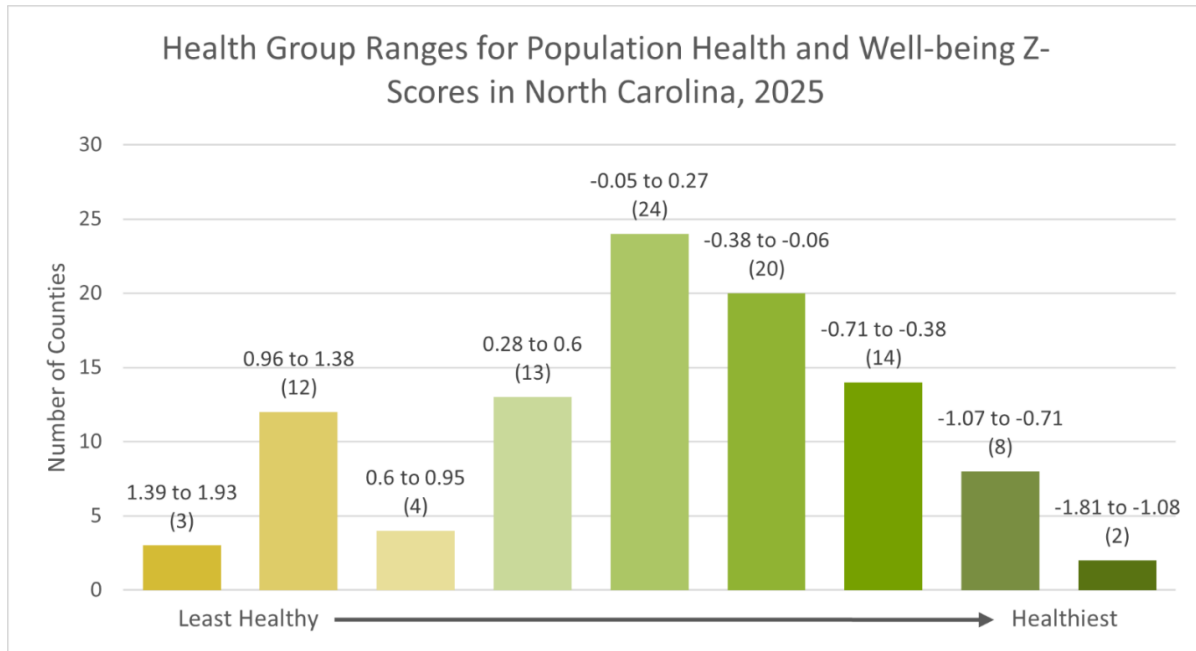


Figure 12. Histogram of population health and well-being ranges for national z-scores reported in 2025 County Health Rankings data.

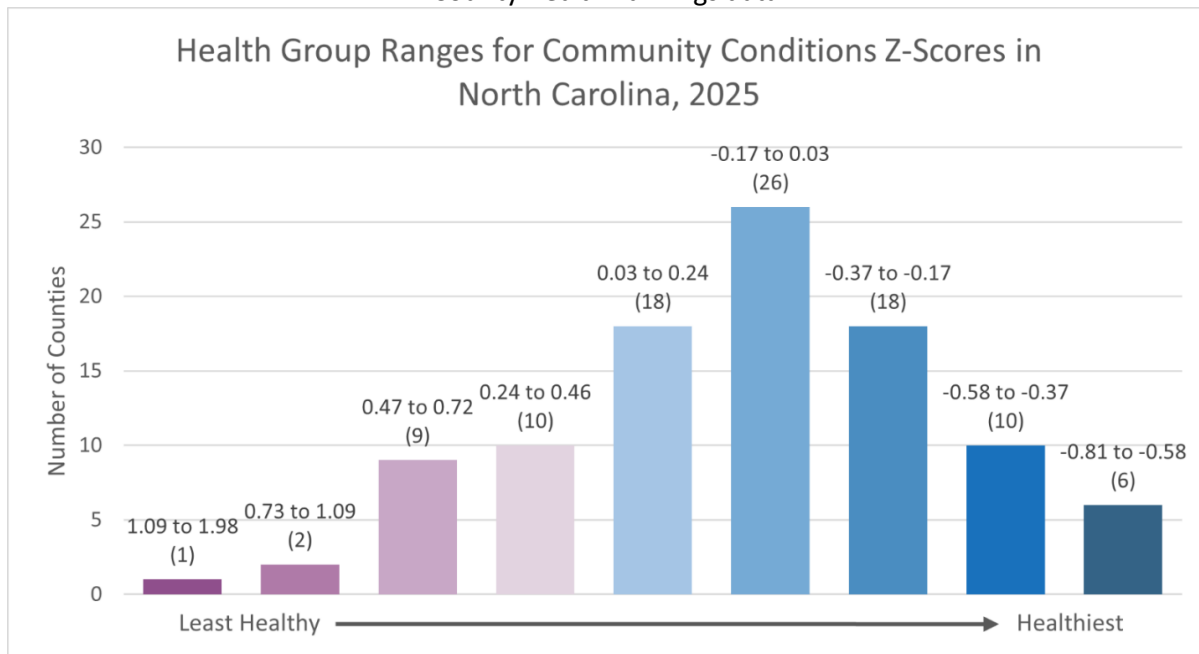


Figure 13. Histogram of community conditions ranges for national z-scores reported in 2025 County Health Rankings data.

Appendix E: CDC Index Model

The CDC Index is intended to evaluate the cumulative impacts to health by ranking census tracts based on combined social, environmental burden, and health vulnerability indicators. Social vulnerability indicators include racial/ethnic minority status, socioeconomic status, household characteristics, and housing type. Environmental burden indicators include air pollution, potentially hazardous and toxic sites, built environment, transportation infrastructure, and water pollution. Health vulnerability is determined based on pre-existing chronic disease burden. The CDC Index delivers a single score for each census tract to identify areas most at risk for the health impacts of environmental burden.

Ranking calculated by multiplying the sum of health vulnerability flags ($n = 5$) by 0.2 to produce a number between 0 - 1. Note: Due to a lack of scientific evidence supporting a specific weighting scheme, all modules are weighted equally in calculating the Overall Index Score. This method of equal weighting for all modules aligns with established methods to assess cumulative impact and social vulnerability.¹¹ Overall Scores are percentile ranked to produce a final ranking with a range of between 0 – 1.

The CDC Index County Map profile for Guilford County is included below.

¹¹ Sadd, J. L, et. al. (2011). Playing It Safe: Assessing Cumulative Impact and Social Vulnerability... *International Journal of Environmental Research and Public Health*, 8(5), 1441-1459.
<https://pubmed.ncbi.nlm.nih.gov/21655129/>

Environmental Justice Index

Johnston County, North Carolina

The **Environmental Justice Index (EJI)** measures the cumulative impacts of environmental injustice in communities across the United States. The EJI ranks are based on percentile rankings of all tracts in the contiguous United States¹.

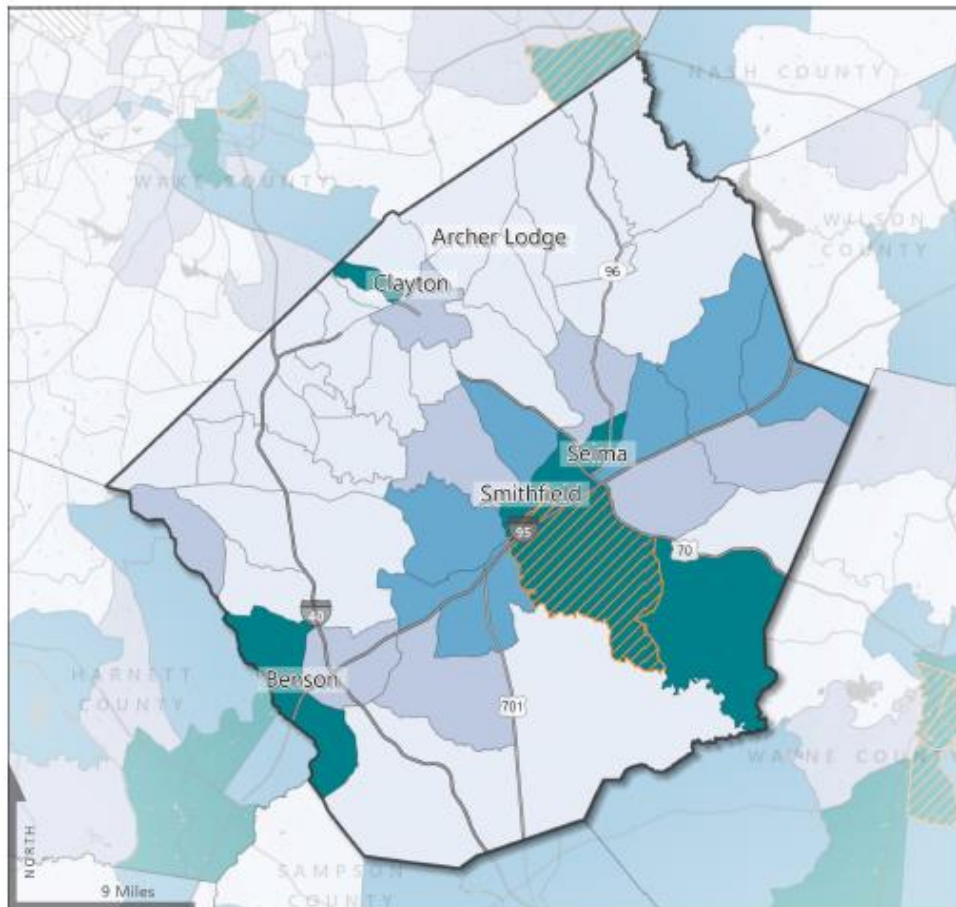
The EJI ranks communities on 36 indicators and 3 modules, which are then combined to create 1 overall EJI rank.

36 Environmental, Social, and Health Indicators

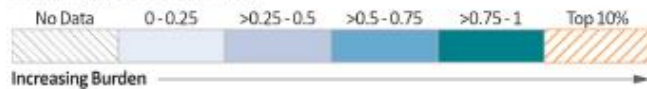
3 Overarching Modules

1 EJI Rank

27,876 | Number of Johnston County Residents Living In **Highly Burdened Areas**



EJI Rank (by U.S. Census Tract)



¹Alaska, Hawaii, and territories were not included due to data limitations.

Let's Compare!

What percent of residents are living in highly burdened areas?

12.7%
Johnston County

13.7%
North Carolina



22.9%
United States



Scan to learn more or visit
<https://eji.cdc.gov>



Geospatial Research, Analysis & Services Program (GRASP)
Agency for Toxic Substances and Disease Registry (ATSDR)
Centers for Disease Control and Prevention



Environmental Justice Index

Johnston County, North Carolina

Indicator View



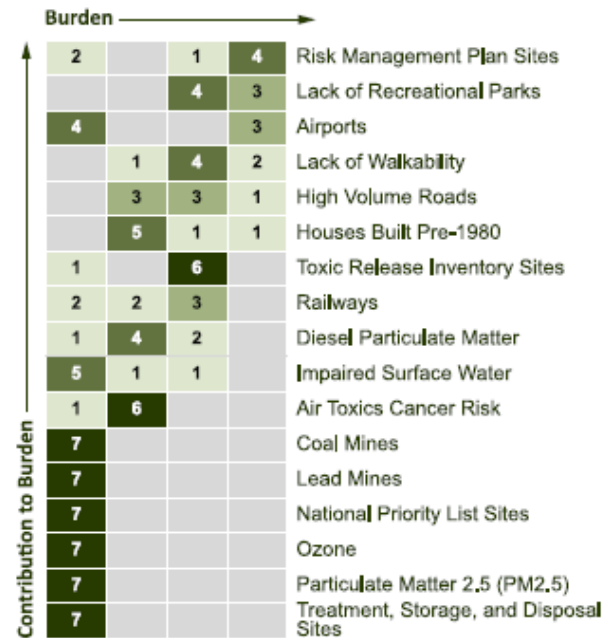
7 of 53 tracts are Highly Burdened

Highly burdened tracts for Johnston County are tracts with EJI ranks of > 0.75. These are tracts that might need special attention or additional action when addressing environmental injustice and health inequities.

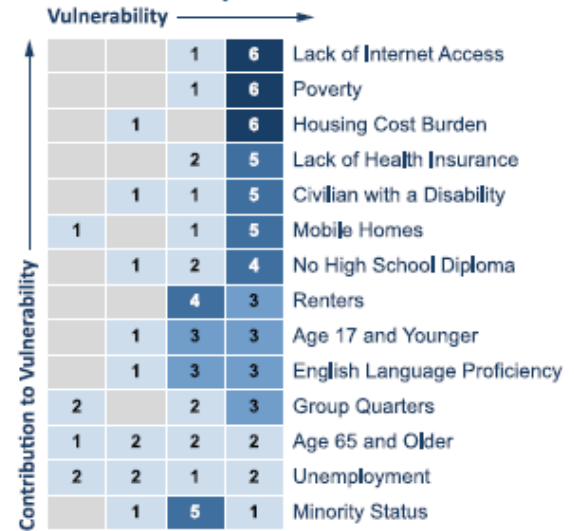
Indicator Rank Distribution

Among these 7 tracts, which **environmental burden** and **social vulnerability** indicators are contributing the most to burden? The figures below display the number of tracts by categories of burden or vulnerability. Higher numbers to the right indicate more tracts experiencing high burden.

Environmental Burden



Social Vulnerability



Health Vulnerability

Among these 7 tracts, how many are **flagged for high prevalence** in the following **pre-existing chronic health conditions**?

For each condition, **flagged tracts** have a higher prevalence than $\frac{2}{3}$ of all tracts in the United States.



Diabetes
7/7 Tracts



Heart Disease
6/7 Tracts



Poor Mental Health
5/7 Tracts



Asthma
4/7 Tracts



Cancer
0/7 Tracts



Geospatial Research, Analysis & Services Program (GRASP)
Agency for Toxic Substances and Disease Registry (ATSDR)
Centers for Disease Control and Prevention

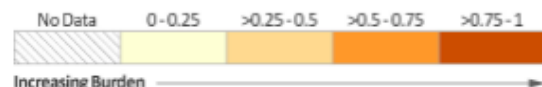
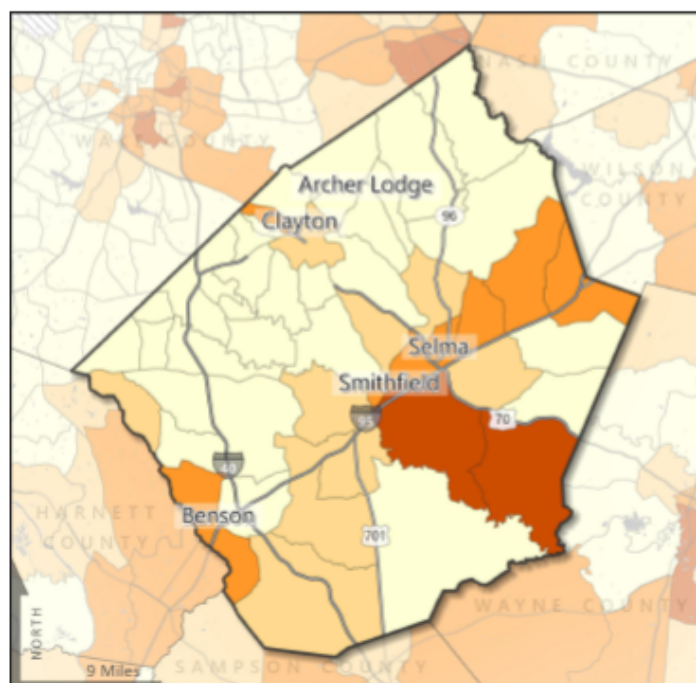
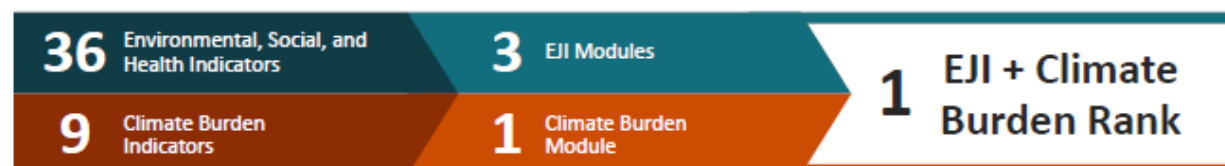


Environmental Justice Index

Johnston County, North Carolina

EJI + Climate Burden

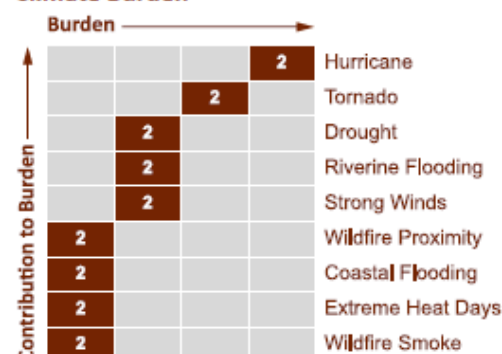
The EJI + **Climate Burden** Rank is a supplement to the base EJI Rank. The supplement measures cumulative impacts, including climate-related burdens, on the health of U.S. communities. EJI + **Climate Burden** is based on the ranks for all 3 base EJI Modules and the EJI **Climate Burden Module Rank**.

**2**

Highly burdened tracts for Johnston County are tracts with EJI + Climate ranks of > 0.75. Climate burdens can add to existing burdens and stressors.

Among these 2 tracts, indicators are listed in order of contribution to burden. For each indicator, the figure displays the number of tracts that fall into progressively higher categories of burden or vulnerability.

Climate Burden



Questions? Email ejc_coordinator@cdc.gov or visit <https://ejc.cdc.gov>

Notes: For more information on data selection, data sources, and on the methodology used to calculate indicators and EJI ranks, please see the EJI Technical Documentation located at: https://www.atsdr.cdc.gov/placeandhealth/eji/technical_documentation.html

Data Sources: U.S. Census Bureau American Community Survey; U.S. Environmental Protection Agency: AirToxScreen, AQS, FRS, NWI, WSIO; U.S. Mine Safety and Health Administration Mine Data Retrieval System; U.S. Geological Survey PAD-US 4.0; U.S. Department of Transportation National Transportation Atlas Database; U.S. Department of Transportation National Highway System; OpenStreetMap; U.S. Centers for Disease Control and Prevention PLACES data; Agency for Toxic Substances and Disease Registry



Geospatial Research, Analysis & Services Program (GRASP)
Agency for Toxic Substances and Disease Registry (ATSDR)
Centers for Disease Control and Prevention



Appendix F: Limitations

Census Data

Census data is collected at a national level every 10 years. Data used in this report was collected between 2018 - 2023. For each sociodemographic indicator described, the most recent available data since 2022 at a census tract level was utilized. Since not all data from the 2022 census has been published, all data utilized was collected before 2022 to maintain comparability at the tract level. Specific data tables and years available are listed in Appendix A.

Furthermore, reporting affects sample size which then affects interpretation of data. The U.S. Census Bureau uses and provides margins of error which is used as an indicator of potential sampling errors and relative reliability. A larger margin of error corresponds to a larger degree of uncertainty. Margins of error for sociodemographic indicators are provided in Appendix C as available through the U.S. Census Bureau.

- Data available from US EPA is not compatible with all categories of data from U.S. Census Bureau data. Therefore, not all comparison tables contain the project area percentages or estimates.
- Data retrieved from the US EPA is based on a one-mile radius of the Duke Energy Progress, LLC – Novo Nordisk facility whereas U.S. Census Bureau data is based on census tracts. As such, the evaluated populations will differ.
- A significantly smaller portion of 409.06 is included within the one-mile radius of the Duke Energy Progress, LLC – Novo Nordisk facility compared to other intersecting census tracts. Despite this, the census tract is still included in the analysis as it is still within proximity of the facility.

For more information about census data collection methods and sources, please visit www.data.census.gov.

Cumulative Impacts and Health

As previously mentioned, there is no standardized methodology to assess for cumulative impacts at this current time. This analysis does however examine the factors that may contribute to cumulative impacts. However, this analysis does not establish or imply any direct causal link between the environmental source exposures used in this analysis and health outcomes.

Appendix G: Glossary

TERM	DEFINITION
Age	The length of time in completed years that a person has lived.
Block Group	A block is the smallest geographic unit for which the Census Bureau tabulates decennial census data. Statistical divisions of census tracts are generally defined to contain between 600 and 3,000 people and are used to present data and control block numbering. A block group consists of clusters of blocks within the same census tract that have the same first digit of their four-digit census block number.

Census Tract	<p>A small, relatively permanent statistical subdivision of a county delineated by a local committee of census data users for the purpose of presenting data. Census tracts ideally contain about 4,000 people and 1,600 housing units.</p> <p>Small, relatively permanent statistical subdivisions of a county or statistically equivalent entity that can be updated by local participants prior to each decennial census as part of the Census Bureau's Participant Statistical Areas Program. Census tracts generally have a population size between 1,200 and 8,000 people, with an optimum size of 4,000 people. A census tract usually covers a contiguous area; however, the spatial size of census tracts varies widely depending on the density of settlement. Census tracts occasionally are split due to population growth or merged as a result of substantial population decline.</p>
Civil Rights Restoration Action of 1987	Amends several anti-discrimination laws, including the Civil Rights Act of 1964, to define the phrase "program or activity" and the term "program" to mean <i>all operations</i> of a (non-religious) entity that receives Federal financial assistance.
Disability	A long-lasting physical, mental, or emotional condition. This condition can make it difficult for a person to do activities such as walking, climbing stairs, dressing, bathing, learning, or remembering. This condition can also impede a person from being able to go outside the home along or to work at a job or business.
Disproportionate Effects	Term used in Executive Order 12898 to describe situations of concern where there exists significantly higher and more adverse health and environmental effects on minority populations, low-income populations, or indigenous peoples.
Income	The money income received on a regular basis (exclusive of certain money receipts such as capital gains and lump-sum payments) before payments for personal income taxes, social security, union dues, Medicare deductions, etc.
Limited English Proficiency (LEP)	The language currently used by respondents at home, either "English only" or a non-English language which is used in addition to English or in place of English.
People of Color Populations	According to the U.S. Census Bureau, population of people who are not single-race white and not Hispanic. Populations of individuals who are members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic.

Title VI of the Civil Rights Act of 1964	Title VI of the Civil Rights Act of 1964 and the U.S. Environmental Protection Agency (US EPA) regulations prohibit discrimination on the basis of race, color, or national origin in any program or activity receiving federal financial assistance. NCDEQ is a recipient of financial assistance from the US EPA and is subject to the provisions of Title VI and US EPA's implementing regulations.
Race	A person's self-identification with one or more social groups. An individual can report [to the U.S. Census] as White, Black or African American, Asian, American Indian and Alaska Native, Native Hawaiian and Other Pacific Islander, or some other race.
Sensitive Receptors	Areas where the occupants are more susceptible to the adverse effects of exposure to toxic chemicals, pesticides, and other pollutants. Sensitive receptors include, but are not limited to, hospitals, schools, daycare facilities, elderly housing and convalescent facilities.
Sex	A person's biological sex.