



ENVIVA SAMPSON, LLC

Draft Environmental Justice Report

North Carolina Department of Environmental Quality
April 27, 2021

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1 Introduction

Environmental justice is 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 (US EPA). This report will examine the demographic and environmental conditions in Duplin and Sampson Counties, as well as census tracts, and the two-mile radius around the property boundary of the Enviva Pellets Sampson, LLC facility. Finally, the demographics for North Carolina are also considered as they relate to both the county and local census tract and radius settings.

The Enviva Pellets Sampson, LLC (Enviva) was initially permitted to construct a wood pellets manufacturing plant in Sampson County, North Carolina under the authorization of Prevention of Significant Deterioration (PSD) Major (Title V fee class) Permit No. 10386R00 on November 17, 2014. On June 5, 2018, the Department of Environmental Quality (DEQ or Department) received an application for a PSD modification (Application 8200152.18A). The plant is currently permitted to produce up to 537,625 oven-dried tons (ODT) per year of wood pellets using up to 75 percent softwood on a 12-month rolling basis. The plant consists of the following processes: Log Debarker, Log Chipper, Bark Hog, Green Wood Hammermills, Rotary Dryer, Dry Hammermills, Pellet Presses and Coolers, Product Loadout operations and other ancillary activities.

An Environmental Justice (EJ) Snapshot was conducted at the beginning of this application process. The EJ Snapshot was distributed to interested community members (if known) and posted to the DEQ website with the relevant permit application. The primary goal of the EJ Snapshot is to encourage comments and suggestions from the surrounding community, industry, and environmental groups throughout the comment period. Public comments received were considered while writing this Environmental Justice (EJ) Report.

2 Environmental Justice Evaluation

The Department has assessed the potential impact on communities surrounding the proposed facility operation by reducing emission sources by implementation of control technology. The assessment of potential impacts has included:

- Modeled emissions rates;
- Study of area demographics [determined by using the Environmental Protection Agency's Environmental Justice tool (EJSCREEN) <https://ejscreen.epa.gov/mapper/and-current-available-census-data>.
<http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>];
- Comparison of local area demographics to both county and statewide census data;
- County health assessment;
- Surrounding sensitive receptors;
- Local industrial sites;
- Comparison of area demographics to project county's and state census data;
- A confirmation site visit to ensure current available census data was accurate; and
- Communication with public and public officials in neighboring communities.

3 Project Proposal

Enviva Pellets Sampson, LLC (Enviva) has requested a modification to its existing air quality permit that will make the facility a minor source under Prevention of Significant Deterioration (PSD) rules and an area source of hazardous air pollutants (HAPs). Enviva currently holds permit 10386R04, issued on October 2, 2019, and is permitted to produce up to 657,000 oven-dried tons (ODT) per year of wood pellets using up to 100 percent softwood on a 12-month rolling basis. A description of the wood pellet manufacturing process is detailed in the permit application (8200152.20B). Under this permit application, Enviva is proposing to install controls making the facility a minor source under PSD and an area source of HAPs. The proposed modifications will include the following:

- Install a Regenerative Catalytic Oxidizer / Regenerative Thermal Oxidizer (RCO/ RTO) to control emissions from the pellet presses and pellet coolers;
- Reroute exhaust from the baghouses on the dry hammermills to either the existing dryer furnace followed by the Wet Electrostatic Precipitator (WESP) followed by the RTO OR directly to the WESP followed by the RTO for emissions control;
- Remove the current throughput limitation on the dry hammermills;
- Add two natural gas/propane-fired duct burners to heat the dryer system ducts;
- Optimize operation of the RTO on the dryer line and increase the permitted heat input of the RTO to allow for injection of natural gas;
- Revise the potential emissions for dried wood handling and the dryer and green hammermills (both controlled by the RTO) to reflect the results from the December 2019 compliance testing;
- Increase the heat input of furnace idle mode from 5 MMBtu/hr to 10 MMBtu/hr;
- Combine the furnace bypass and the dryer bypass into one emission source; and
- Increase the fraction of particulate matter (PM) that is PM_{2.5} for the finished product handling baghouse because the estimated exit grain loading rate is cleaner than ambient air, which is not realistic.

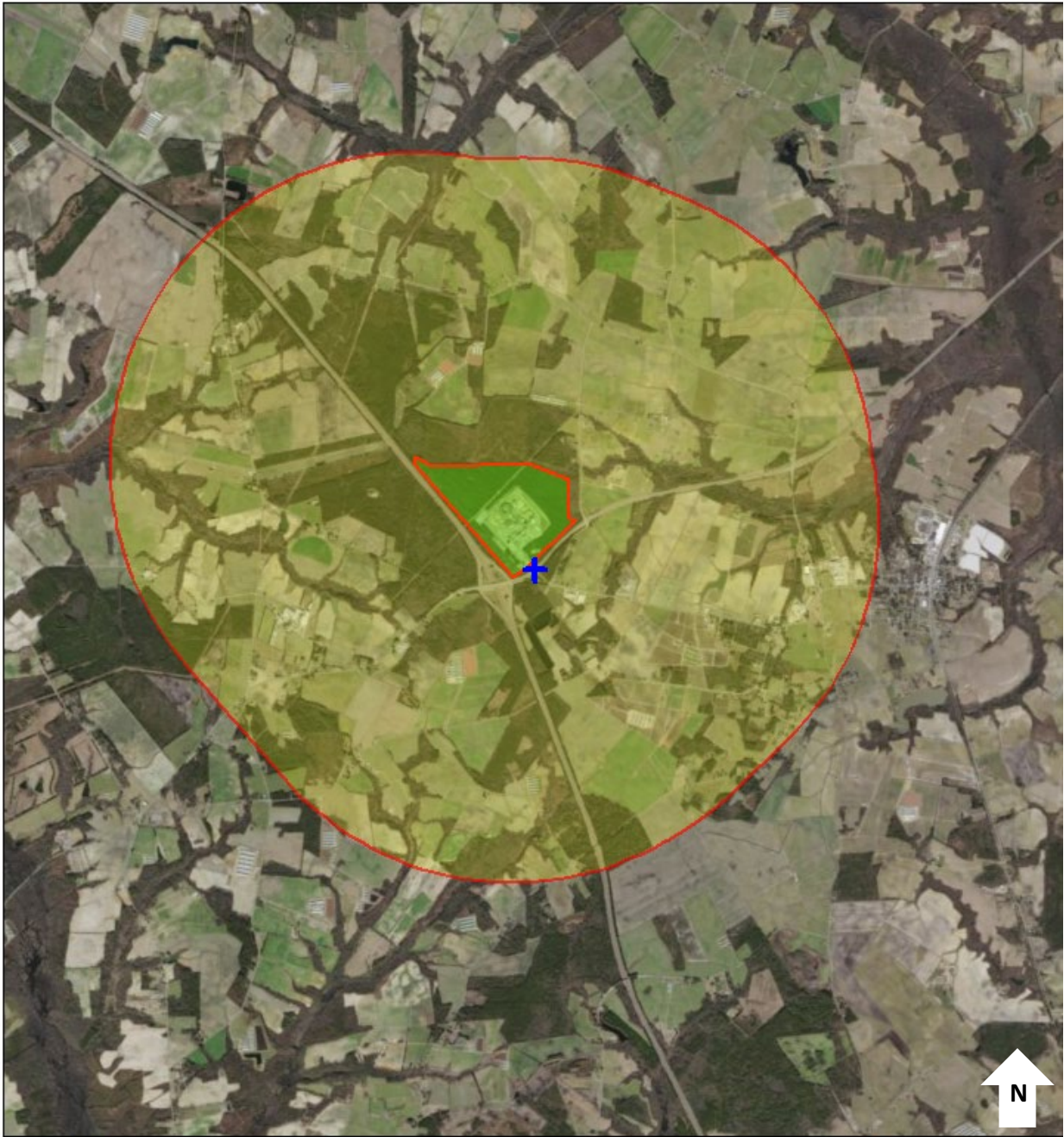
Potential emissions before and after this modification are provided in Table 1.

Pollutant	Potential Emissions before Modification (tpy)	Potential Emissions after Modification (tpy)	Change in Potential Emissions (tpy)
PM (TSP)	205	234	29
PM ₁₀	93	87.1	-6.2
PM _{2.5}	40	48.1	8.2
CO	219	107	-112
NO _x	221	111	-110
SO ₂	27.6	27.6	0
VOC	831	113	-718



Table 1. Emissions Associated with Permit Modification			
Pollutant	Potential Emissions before Modification (tpy)	Potential Emissions after Modification (tpy)	Change in Potential Emissions (tpy)
Largest HAP	83 (methanol)	6.8 (methanol)	-76.2
Total HAP	149	22.9	-126.1
CO ₂ e	256,263	272,322	15,846

4 Geographic Area

The facility is located at 5 Connector Road in Faison, NC, 28341 (Sampson County). According to DEQ's Division of Air Quality (DAQ), the highest off-site ambient air impacts from Enviva Pellets Sampson dispersion modeling occur at the plant fence line. A two-mile radius was used for analyzing the local demographics and socioeconomic factors in this report (Figure 1).



June 3, 2019

-  2- mile radius
-  Enviva Sampson Facility

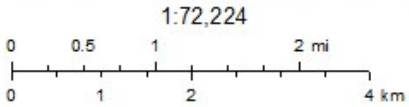


Figure 1. Facility Location with a two-mile radius.

The two-mile radius used in this analysis encompasses portions of Duplin and Sampson counties and extends into census tracts 902 and 9701 (Figure 3). Census tracts are small, relatively permanent statistical subdivisions of a county with a unique numeric code (US Census Bureau).

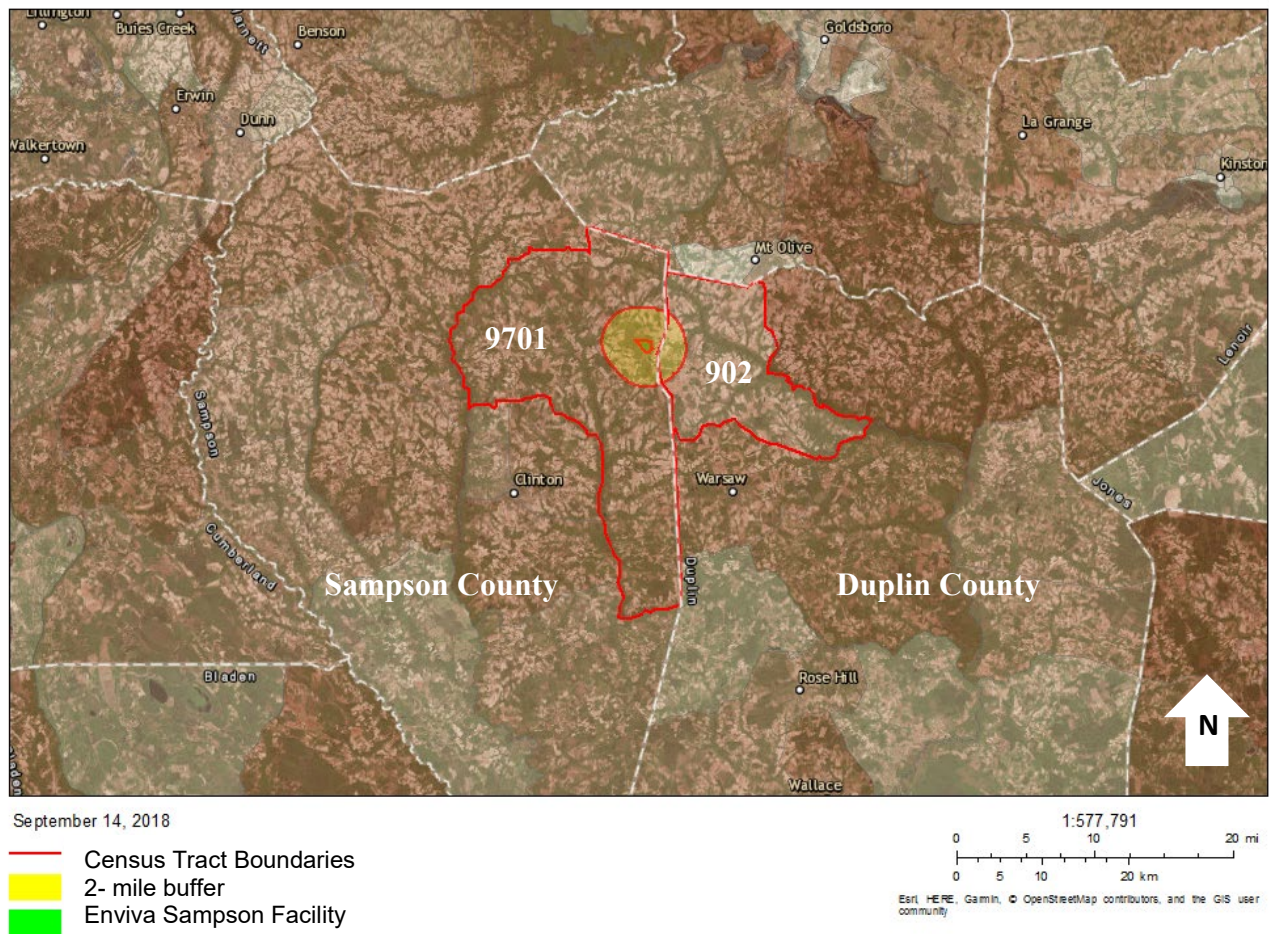


Figure 2. Census tracts and counties around facility location.

5 Regional and Local Settings

The below sections on race and ethnicity, age and sex, disability, poverty, household income, and Limited English Proficiency (LEP) populations are based on U.S. Census Bureau data, first at a state and county level (regional setting), and then at a census tract and project radius level (local setting). The surrounding census tracts that are included are those that overlap into the two-mile radius. Demographics of Duplin and Sampson counties will be compared to the local level data to identify any disparities surrounding the project area. Using standard environmental justice guidelines from the EPA and NEPA documentation, the following conditions will be flagged as potential communities of concern:

1. 10 percent or more in comparison to the county average,
2. 50 percent or more minority, and/or
3. 5 percent or more in comparison to the county average for poverty.

For example, if a census tract has 35% of the population classified as low-income but the county consists of 30% low-income, the census tract would exceed the county average by 10.5% and thus be flagged as a potential area of concern.

For this report, census data from 2010 and census data estimates from 2011-2015 and 2012-2016 were used. 2010 Census Bureau data is real data gathered every 10 years, whereas the estimates from the more recent years are modeled estimates based on the real data. For the data gathered from the 2012-2016 and 2011-2015 estimates, the margin of error (MOE) has been included. This value is a measure of the possible variation of the estimate around the population value (U.S. Census Bureau). The Census Bureau standard for the MOE is at the 90% confidence level and may be any number between 0 and the MOE value in either direction (indicated by +/-).

5.1 Race and Ethnicity

Regional Setting

According to the 2010 US Census Data QT-P3, Race and Hispanic Origin: 2010; 2010 Census Summary File 1 report, North Carolina' population totaled 9,535,483 individuals (Table 5-1). The three most common racial groups across the state were White (68.5%), Black or African-American (21.5%) and Hispanic or Latino (of any race) at 8.4%.

Duplin County had a total population of 58,505 individuals (Table 5-1). The three most common racial groups within the county were White (57.2%), Black or African-American (25.3%), and Hispanic or Latino (20.6%). The Black or African American population (25.3%) was greater than 10% different when compared to the state (21.5%). Hispanic or Latino (20.6%) was also greater than 10% different when compared to the state population of 8.4%.

Sampson County had a total population of 63,431 individuals (Table 5-1). The three most common racial groups within the county were White (56.7%), Black or African American (27%), and Hispanic or Latino (16.5%). Both Black or African American and Hispanic or Latino were greater than 10% different than their respective state population percentages.

Table 5-1. Regional Setting - Race and Ethnicity

Race and Ethnicity	North Carolina		Duplin County		Sampson County	
	Number	Percent	Number	Percent	Number	Percent
Total Population	9,535,483	100.0	58,505	100.0	63,431	100.0
White	6,528,950	68.5	33,449	57.2	35,985	56.7
Black or African American	2,048,628	21.5	14,773	25.3	17,128	27
American Indian or Alaska Native	122,110	1.3	267	0.5	1,297	2.0
Asian	208,962	2.2	155	0.3	242	0.4
Native Hawaiian and Other Pacific Islander	6,604	0.1	65	0.1	72	0.1
Some other Race	414,030	4.3	8,856	15.1	7,430	11.7
Two or More Races	206,199	2.2	940	1.6	1,277	2.0
HISPANIC OR LATINO (of any race)	800,120	8.4	12,059	20.6	10,440	16.5
Mexican	486,960	5.1	7,150	12.2	7,482	11.8
Puerto Rican	71,800	0.8	261	0.4	510	0.8
Cuban	18,079	2.3	83	0.1	50	0.1
Other Hispanic or Latino	223,281	2.3	4,565	7.8	2,398	3.8

All **bolded** and underlined cells indicate a difference that is greater than 10% when compared to the State.
Source: US Census, 2010

Local Setting

According to the 2010 US Census Data QT-P3, Race and Hispanic Origin: 2010; 2010 Census Summary File 1 report, the largest population within Census Tract 902 was White, with a population of 2,273 (52.4%) (Table 5-2). The next largest populations were Black or African American (25.1%), Hispanic or Latino (24.1%), and Some Other Race (19.9%). Some other Race in Census Tract 902 (19.9%) was greater than 10% different than the county population (Duplin) at 15.1%. Additionally, both Hispanic or Latino (of any race) and Mexican populations were greater than 10% when compared to both county and state populations at 24.1% and 19.4% for the census tract compared to 20.6% and 12.20% in Duplin County respectively.

The largest population within Census Tract 9701 was White, with a population of 3,756 (52.8%). The next three largest populations were Black or African-American (26.3%), Hispanic or Latino (24.6%), and Some Other Race (17.5%). Census Tract 9701 showed a greater than 10% difference in the Black or African American (26.3%), Two or More Races (1.9%), and Puerto Rican (1%) populations when compared to the state. However, those populations were not greater than 10% different when compared to the county population percentages. Like Census Tract 902, Census Tract 9701 had a greater than 10% difference in Some Other Race (17.5%), Hispanic or Latino of any race (24.6%), and Puerto Rican (18.7%) populations compared to both Sampson County and the state. Additionally, Census Tract 9701 had a greater than 10% difference for the Other Hispanic or Latino population at 4.8%, compared to both the county and the state at 3.8% and 2.3%, respectively. Census tracts 902 and 9701 showed significant Hispanic or Latino populations at 24.1% and 17.5% compared to the state total population of 8.4%

Within the two-mile radius, EJSCREEN identified a total population of 845 individuals (Table 5-2). The largest population within the two-mile radius was White, with a total of 364 individuals (43% of the total population). There was a significant Hispanic or Latino population within both

the one- and two-mile radiuses at 36% and 35%, respectively. This population percentage is much larger than even the census tracts which reported 26.3% (9701) and 25.1% (902) Hispanic or Latino populations. There were several populations within the project area with a 10% difference when compared to the state.

Table 5-2. Local Setting – Race and Ethnicity

Race and Ethnicity	Project Area - 1 Mile		Project Area - 2 Miles		Census Tract 902		Census Tract 9701	
	Number	Percent	Number	Percent	Number	Percent	Number	Percent
Total Population	189	100	845	100	4,341	100.0	7,110	100.0
White	74	39	364	43	2,273	52.4	3,756	52.8
Black or African American	55	29	219	26	1,089	25.1	1,870	<u>26.3</u>
American Indian or Alaska Native	5	3	12	1	15	0.3	83	1.2
Asian	0	0	2	0	10	0.2	13	0.2
Native Hawaiian and Other Pacific Islander	0	0	0	0	4	0.1	11	0.2
Some other Race	48	26	223	26	863	<u>19.9</u>	1,241	<u>17.5</u>
Two or More Races	6	3	24	3	87	2	136	<u>1.9</u>
HISPANIC OR LATINO (of any race)	69	<u>36</u>	295	<u>35</u>	1,048	<u>24.1</u>	1,748	<u>24.6</u>
Mexican					843	<u>19.4</u>	1,331	<u>18.7</u>
Puerto Rican					9	0.2	71	1.0
Cuban					1	0	5	0.1
Other Hispanic or Latino					195	4.5	341	<u>4.8</u>
% Minority (2010 Census)		68		63				
All orange highlighted cells indicate a difference that is greater than 10% when compared to the respective county All bolded and underlined cells indicate a difference that is greater than 10% when compared to the State. Source: US Census, 2012-2016 ACS 5-Year Estimates								

5.1 Age and Sex

Regional Setting

According to the U.S. Census Bureau, QT-P1, Age Groups and Sex: 2010 Census Summary File 1, North Carolina had a total population of 9,535,483 individuals. The largest percentage of the total state population (63.1%) was between the ages of 18 and 64, with an overall median age of 36 for males and 38.7 for females (Table 5-3).

Table 5-3. Regional Setting - Age Groups and Sex

Age	North Carolina					
	Number			Percent		
	Both sexes	Male	Female	Both sexes	Male	Female
Total Population	9,535,483	4,645,492	4,889,991	100	100	100
Under 5 years	632,040	322,871	309,169	6.6	7	6.3
Under 18 years	2,281,635	1,167,303	1,114,332	23.9	25.1	22.8
18 to 64 years	6,019,769	2,954,233	3,065,536	63.1	63.6	62.7
65 years and over	1,234,079	523,956	710,123	12.9	11.3	14.5
Median Age	37.4	36	38.7			

Age	Duplin County						Sampson County					
	Number			Percent			Number			Percent		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
Total Population	58,505	28,758	29,747	100	100	100	63,431	31,108	32,323	100	100	100
Under 5 years	4,284	2,167	2,117	7.3	7.5	7.1	4,405	2,202	2,203	6.9	7.1	6.8
Under 18 years	14,870	7,701	7,169	25.4	26.8	24.1	16,277	8,334	7,943	25.7	26.8	24.6
18 to 64 years	35,340	17,583	17,757	60.4	61.1	59.7	38,110	19,023	12,087	60.1	61.2	59.1
65 years and over	8,295	3,474	4,821	14.2	12.1	16.2	9,044	3,751	5,293	14.3	12.1	16.4
Median Age	37.8	36.1	39.5				38.2	36.9	39.4			

All **bolded** and underlined cells indicate a difference that is greater than 10% when compared to the State.
Source: US Census, 2010

Duplin County had a total population of 58,505 individuals. The largest percentage of the total county population (60.4%) was between the ages of 18 and 64, with a median age of 36.1 for males and 39.5 for females (Table 5-3). Sampson County had a total population of 63,431 individuals. The largest percentage of the total county population (60.1%) was between the ages of 18 and 64, with a median age of 36.9 for males and 39.4 for females (Table 5-3).

Local Setting

Within the two-mile radius, EJSCREEN identified a total population of 845 individuals (Table 5-4). The largest percentage of the population for the two-mile radius was 18+ at 73%.

According to the US Census Bureau, QT-P1, Age Groups and Sex: 2010 Census Summary File 1, census tracts 902 and 9701 had total populations of 4,341 and 7,110, respectively. The largest percentage of the population for Census Tract 902 (61.9%) was between the ages of 18 and 64, with a median age of 36.7 for males and 40 for females (Table 5-5). The largest percentage of

the population for Census Tract 9701 (60.2%) was between the ages of 18 and 64, with a median age of 35 for males and 37.9 for females (Table 5-5).

Table 5-4. Local Setting - Age Groups and Sex (Project Area)

Age	Project Area - 1 Miles						Project Area - 2 Miles					
	Number			Percent			Number			Percent		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Total Population	189	96	93	100	51	49	845	425	420	100	50	50
Under 5 years	16			9			73			9		
Under 18 years	52			27			230			27		
18+	137			73			615			73		
65 years and over	21			11			106			13		

Table 5-5. Local Setting - Age Groups and Sex (Census Tracts)

Age	Census Tract 902						Census Tract 9701					
	Number			Percent			Number			Percent		
	Both Sexes	Male	Female	Both Sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Total Population	4,341	2,180	2,161	100%	100%	100%	7,110	3,570	3,540	100	100	100
Under 5 years	317	152	165	7.3	7	7.6	536	279	257	<u>7.5</u>	7.8	7.3
Under 18 years	1,074	548	526	24.7	25.1	24.3	1,926	1,035	891	<u>27.1</u>	29	25.2
18 to 64 years	2,687	1,373	1,314	61.9	63	60.8	4,278	2,150	2,128	60.2	60.2	60.1
65 years and over	580.0	259.0	321.0	13.4	11.9	14.9	906	385	521	12.7	10.8	14.7
Median Age	38.1	36.7	40.0				36.4	35	37.9			

All **orange** highlighted cells indicate a difference that is greater than 10% when compared to the county
All **bolded** and **underlined** cells indicate a difference that is greater than 10% when compared to the State.
Source: US Census, 2010

5.2 Disability

Regional Setting

According to the 2012-2016 American Community Survey 5-Year Estimates, S1810 from the U.S. Census Bureau, the State of North Carolina had an estimated total population of 9,745,671 noninstitutionalized citizens. Of those individuals, an estimated 13.7% (MOE +/- 0.1%) had a disability. The largest population of disabled civilians were 65 years and over (37.0%, MOE +/- 0.4%). The second largest population was the 18 to 64-year-old population at 11.7% (MOE +/- 0.1%). By race, American Indian and Alaskan Native had the highest estimated disability rate of 17.8% (MOE +/- 0.7%). Black or African-American, White, and Two or More Races were the next three highest population estimates with disabilities in North Carolina, at 15.2% (MOE +/- 0.2%), 14.5% (MOE +/- 0.1%), and 12.1% (MOE +/- 0.6%), respectively (Table 5-6).

Table 5-6. Regional Setting- North Carolina Disability Rates

Subject	Total		With a Disability		Percent with a Disability	
	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-
Total civilian noninstitutionalized population	9,745,671	1,984	1,331,570	9,030	13.7	0.1
Population under 5 years	605,854	577	5,472	618	0.9	0.1
Population 5 to 17 years	1,678,393	820	95,959	2,436	5.7	0.1
Population 18 to 64 years	6,043,522	2,047	706,159	4,315	11.7	0.1
Population 65 years and over	1,417,902	1,060	523,980	2,503	37.0	0.4
SEX						
Male	4,684,967	2,276	635,546	6,205	13.6	0.1
Female	5,060,704	1,416	696,024	5,292	13.8	0.1
RACE AND HISPANIC OR LATINO ORIGIN						
White	6,249,094	2,339	908,963	7,348	14.5	0.1
Black or African-American	2,080,284	4,902	315,319	3,945	15.2	0.2
American Indian and Alaska Native	114,361	1,780	20,409	838	17.8	0.7
Asian	252,557	1,686	12,401	812	4.9	0.3
Native Hawaiian and Other Pacific Islander	6,081	887	725	431	11.9	7.0
Some other Race	294,651	8,124	14,358	1,153	4.9	0.4
Two or more races	237,452	5,743	28,705	1,429	12.1	0.6
Hispanic or Latino	867,538	802	51,132	2,008	5.9	0.2
Source: US Census, 2012-2016 ACS 5-Year Estimates						

Duplin County had an estimated total population of 58,551 noninstitutionalized citizens. Of those individuals, an estimated 18.2% (MOE +/- 1.1%) had a disability. The total population with disabilities in Duplin County was more than 10% different than the state level of 13.7%. The largest population of disabled civilians were 65 years and older (48.7%, MOE +/-4.9%). The second largest population was the 18 to 64-year old population at 16.2% (MOE +/- 2.0%). By race, Black or African American had the highest estimated disability rate of 24.2% (MOE +/-2.5%). White, Two or More Races, and American Indian and Alaskan Native were the next three highest population estimates with disabilities in North Carolina, at 20.9% (MOE +/- 1.7%), 14.2%

(MOE +/- 10.4%), and 8.8% (MOE +/- 19.1%), respectively (Table 5-7). All of these populations with the exception American Indian and Alaskan Native had populations greater than 10% difference when compared to the state.

Sampson County had an estimated total population of 63,135 noninstitutionalized citizens. Of those individuals, an estimated 19.7% (MOE +/- 1.3%) had a disability. The total population with disabilities in Sampson County was more than 10% greater than the state level of 13.7%. The largest population of disabled civilians were 65 years and older (48.7%, MOE +/-4.8%). The second largest population was the 18 to 64-year population at 17.7% (MOE +/- 2.4%). The only age group that did not have a population with disability greater than 10% different from the state was the population under 5. By race, Black or African American had the highest estimated disability rate of 25.0% (MOE +/- 2.5%). White, Two or More Races, and Asian were the next three highest population estimates with disabilities in Sampson County, at 22.0% (MOE +/- 2.1%), 18.7% (MOE +/- 6.7%), and 14.9% (MOE +/- 8.3%) respectively (Table 5-7). All of these populations had populations greater than 10% difference when compared to the state.

Table 5-7. Regional Setting- Sampson and Duplin Counties Disability

Subject	Duplin County						Sampson County					
	Total		With a Disability		Percent with a Disability		Total		With a Disability		Percent with a Disability	
	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-
Total civilian noninstitutionalized population	58,551	158	10,674	665	<u>18.2</u>	1.1	63,135	136	12,398	836	<u>19.6</u>	1.3
Population under 5 years	3,898	19	16	20	0.4	0.5	4,150	41	6	13	0.1	0.3
Population 5 to 17 years	10,762	116	569	163	5.3	1.5	11,647	46	950	212	<u>8.2</u>	1.8
Population 18 to 64 years	34,749	126	5,635	335.5	<u>16.2</u>	2.0	37,404	114	6,609	451	<u>17.7</u>	2.4
Population 65 years and over	9,142	112	4,454	228	<u>48.7</u>	4.9	9,934	149	4,833	236	<u>48.7</u>	4.8
SEX												
Male	28,606	142	4,981	460	<u>17.4</u>	1.6	30,956	87	6,093	561	<u>19.7</u>	1.8
Female	29,945	134	5,693	424	<u>19.0</u>	1.4	32,179	105	6,305	520	<u>19.6</u>	1.6
RACE AND HISPANIC OR LATINO ORIGIN												
White	30,409	99	6,359	521	<u>20.9</u>	1.7	32,867	88	7,234	685	<u>22.0</u>	2.1
Black or African American	14,476	249	3,499	358	<u>24.2</u>	2.5	16,031	363	4,007	406	<u>25.0</u>	2.5
American Indian and Alaska Native	114	97	10	18	8.8	19.1	1,210	251	233	77	19.3	5.6
Asian	181	56	0	28	0.0	16.4	296	29	44	26	<u>14.9</u>	8.3
Native Hawaiian and Other Pacific Islander	25	40	0	28	0.0	59.3	11	19	0	28	0.0	89.4
Some other Race	5,008	934	190	106	3.8	2.0	4,468	877	201	98	4.5	2.2
Two or more races	904	284	128	86	<u>14.2</u>	10.4	1,769	400	331	154	<u>18.7</u>	6.7
Hispanic or Latino	12,574	27	698	226	5.6	1.8	11,579	41	640	173	5.5	1.5

All **bolded** and underlined cells indicate a difference that is greater than 10% when compared to the State.
Source: US Census, 2012-2016 ACS 5-Year Estimates

Local Setting

According to the 2012-2016 American Community Survey 5-Year Estimates, S1810 from the US Census Bureau, census tracts 902 and 9701 had a total civilian noninstitutionalized population of 4,488 and 7,391, respectively. The largest percentage of the total Census Tract 902 population with a disability (32.3%, MOE +/- 13.8%) was the population 65 years and over. The second largest was at 10.7% (MOE +/- 4.7%) for the 18 to 64-year old age range. The White population had the highest estimated disability rate by race at 18.0% (MOE +/- 4.8%) which was greater than 10% different from the state population. Black or African-American, Two or More races, and Hispanic or Latino were the next three highest population estimates with disabilities in the census tract, at 15.0% (MOE +/- 4.8%), 5.7% (MOE +/- 10.5%), and 0.2% (MOE +/- .4%), respectively (Table 11). None of the population groups had a greater than 10% difference when compared to the county, and only the White population had a greater than 10% difference when compared to the state.

The largest percentage of the total Census Tract 9701 population with a disability (48.5%, MOE +/- 18.2%) was the population 65 years and over. The second largest was at 26.6% (MOE +/- 8.0%) for the 18 to 64-year age range. American Indian and Alaska Native had the highest disability rate at 100%. However, it is important to note that the margin of error for this rate is +/- 100. Black or African American (34.1%, MOE +/- 8.3%), White (27.0%, MOE +/- 7.3%), and Hispanic or Latino (9.6%, MOE +/- 5.1%) populations were the next three highest estimates of groups with disabilities in Census Tract 9701 (Table 5-8). All populations with the exception of individuals under the age of 5 and Two or More Races saw a greater than 10% difference in comparison to their respective state populations.

Table 5-8. Local Setting- Census Tract Disability

Subject	Census Tract 902						Census Tract 9701					
	Total		With a Disability		Percent with a Disability		Total		With a Disability		Percent with a Disability	
	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-
Total civilian noninstitutionalized population	4,488	529	471	108	10.5	2.7	7,391	731	1,793	312	24.3	4.2
Population under 5 years	312	133	4	8	1.3	2.4	327	198	0	17	0.0	9.5
Population 5 to 17 years	931	244	4	6	0.4	0.7	1,470	290	107	89	7.3	5.9
Population 18 to 64 years	2,710	215	290	62	10.7	4.7	4,487	325	1,149	191	25.6	8.0
Population 65 years and over	535	71	173	43	32.3	13.8	1,107	144	537	117	48.5	18.2
SEX												
Male	2,276	328	205	66	9.0	3.2	3,956	482	1,005	251	25.4	6.5
Female	2,212	303	266	79	12.0	3.7	3,435	375	788	171	22.9	4.7
RACE AND HISPANIC OR LATINO ORIGIN												
White	1,718	241	309	85	18.0	4.8	3,400	566	917	263	27.0	7.3
Black or African American	1,020	314	153	85	15.0	8.0	2,045	581	698	233	34.1	8.3
American Indian and Alaska Native	0	12	0	12	-	-	2	4	2	4	100.0	100.0
Asian	30	43	0	12	0.0	54.1	41	43	6	11	14.6	33.0
Native Hawaiian and Other Pacific Islander	0	12	0	12	-	-	0	17	0	17	-	-
Some other Race	634	311	0	12	0.0	5.0	914	577	81	68	8.9	7.4
Two or more races	88	87	5	7	5.7	10.5	249	201	35	56	14.1	7.1
Hispanic or Latino	1,655	511	4	7	0.2	0.4	1,774	607	170	93	9.6	5.1

All **orange** highlighted cells indicate a difference that is greater than 10% when compared to the county
All **bolded** and underlined cells indicate a difference that is greater than 10% when compared to the State.
Source: US Census, 2012-2016 ACS 5-Year Estimates

5.3 Poverty

Regional Setting

According to the Census Table S1701, Poverty Status in the Past 12 Months, 2012-2016 American Community Survey 5-Year Estimates, from the US Census Bureau, North Carolina had an estimated population of 9,685,511, with 16.8% (MOE +/- 0.2%) below the poverty level (Table 5-9). Across all subjects, Some Other Race had the highest percent living below the poverty level at 33.7% (MOE +/- 1.5%). The next three subjects with the highest poverty level were American Indian and Alaska Native (28.1%, MOE +/- 1.5%), followed by Black or African-American (26.1%, MOE +/- .4%) and Hispanic or Latino and Two or more Races, both at 24.6% (MOE +/- 0.8% and +/- 1.1%, respectively). The age group with the highest population below poverty was Under 18 (23.9%, MOE +/- 0.4%), followed by 18 to 64 (15.9%, MOE +/- 0.2%).

Table 5-9. Poverty Status -North Carolina

Subject	Total		Below poverty level		Percent below poverty level	
	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-
Population for whom poverty status is determined	9,685,511	1,782	1,631,704	17,281	16.8	0.2
AGE						
Under 18	2,254,721	2,050	539,417	8,484	23.9	0.4
18 to 64	6,012,888	1,258	955,430	9,789	15.9	0.2
65 years and over	1,417,902	1,068	136,857	2,562	9.7	0.2
SEX						
Male	4,684,761	2,068	719,985	8,902	15.4	0.2
Female	5,000,750	1,846	911,719	9,880	18.2	0.2
RACE AND HISPANIC OR LATINO ORIGIN						
White	6,220,770	2,615	718,254	11,602	11.5	0.2
Black or African-American	2,056,688	4,872	537,538	7,834	26.1	0.4
American Indian and Alaska Native	114,277	1,759	32,101	1,831	28.1	1.5
Asian	248,665	1,763	32,044	1,973	12.9	0.8
Native Hawaiian and Other Pacific Islander	6,227	910	1,229	363	19.7	5.3
Some other Race	293,512	8,038	98,899	5,189	33.7	1.5
Two or more Races	233,951	5,773	57,525	2,970	24.6	1.1
Hispanic or Latino	867,229	835	273,081	2,970	24.6	0.8
All individuals below:						
50 percent of poverty level	709,029	10,824				
125 percent of poverty level	2,156,665	18,666				
150 percent of poverty level	2,675,626	22,058				
185 percent of poverty level	3,374,865	23,762				
200 percent of poverty level	3,649,420	24,199				
Source: US Census, 2012-2016 ACS 5-Year Estimates						

Duplin County had an estimated total population of 58,308, with 27.6% below poverty (MOE +/- 2.7%). Some other Race had the highest percent living below the poverty level at 52.3% (MOE +/- 5.1%). The next three groups based on race with the highest poverty level were Hispanic or Latino 46.9% (MOE +/- 6.6%), Two or More Races (41.70%, MOE +/- 18.1%), and Black or African American (35.5%, MOE +/- 5.1%). The age group with the highest population below poverty was Under 18 (41.2%, MOE +/- 4.6%), followed by 18 to 64 (25.4%, MOE +/- 2.9%). All population subjects with the exception of American Indian and Alaska Native, Native Hawaiian and Other Pacific Islander, and Asian had greater than 5% differences in comparison to their respective state populations (Table 5-10).

Sampson County had an estimated total population of 62,915, with 24.2% below poverty (MOE +/- 2.0%). Native Hawaiian and Other Pacific Islander had the highest percent living below the poverty level at 100% (MOE +/- 89.40%). The next three groups based on race with the highest poverty level were Hispanic or Latino 39.8% (MOE +/- 6.9%), Some other Race (37.0%, MOE +/- 12.7%), and Black or African American (33.5%, MOE +/- 4.5%). The age group with the highest population below poverty was Under 18 (35.5%, MOE +/- 4.4%), followed by 18 to 64 (22.3%, MOE +/- 2.0%). All populations with the exception of American Indian and Alaska Native and Asian had greater than 5% differences in comparison to their respective state populations (Table 5-10).

Table 5-10. Poverty Status - Duplin and Sampson Counties

Subject	Duplin County						Sampson County					
	Total		Below poverty level		Percent below poverty level		Total		Below poverty level		Percent below poverty level	
	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-
Population for whom poverty status is determined	58,308	240	16,106	1,594	<u>27.6</u>	2.7	62,915	191	15,207	1,269	<u>24.2</u>	2.0
AGE												
Under 18	14,332	195	5,898	665	<u>41.2</u>	4.6	15,534	122	5,520	679	<u>35.5</u>	4.4
18 to 64	34,834	143	8,833	1,025	<u>25.4</u>	2.9	37,447	135	8,350	744	<u>22.3</u>	2.0
65 years and over	9,142	169	1,375	238	<u>15.0</u>	2.6	9,934	163	1,337	221	<u>13.5</u>	2.2
SEX												
Male	28,477	187	7,313	860	<u>25.7</u>	3.0	30,890	124	6,960	714	<u>22.5</u>	2.3
Female	29,831	169	8,793	914	<u>29.5</u>	3.0	32,025	152	8,247	759	<u>25.8</u>	2.4
RACE AND HISPANIC OR LATINO ORIGIN												
White	30,534	99	4,808	846	<u>15.7</u>	2.8	32,775	126	4,637	756	<u>14.1</u>	2.3
Black or African American	14,346	238	5,094	756	<u>35.5</u>	5.1	15,966	371	5,342	746	<u>33.5</u>	4.5
American Indian and Alaska Native	92	94	-	28	0.0	29.0	1,210	251	243	102	20.1	8.7
Asian	181	56	24	32	13.3	17.6	291	29	12	17	4.1	5.9
Native Hawaiian and Other Pacific Islander	25	40	-	28	0.0	59.3	11	19	11	19	<u>100.0</u>	89.4
Some other Race	4,948	920	2,590	842	<u>52.3</u>	11.3	4,409	889	1,632	619	<u>37.0</u>	12.7
Two or more races	904	284	377	222	<u>41.7</u>	18.1	1,770	397	509	250	<u>28.8</u>	12.1
Hispanic or Latino	12,439	110	5,838	832	<u>46.9</u>	6.6	11,541	65	4,598	794	<u>39.8</u>	6.9
All individuals below:												
50 percent of poverty level	6,041	1,062					5,777	988				
125 percent of poverty level	21,302	1,542					19,478	1,403				
150 percent of poverty level	26,328	1,452					23,857	1,403				
185 percent of poverty level	30,457	1,471					29,450	1,394				
200 percent of poverty level	32,201	1,452					31,952	1,313				

All **bolded** and underlined cells indicate a difference that is greater than 10% when compared to the State.

Source: US Census, 2012-2016 ACS 5-Year Estimates

Local Setting

According to the Census Table S1701, Poverty Status in the Past 12 Months, 2012-2016 American Community Survey 5-Year Estimates, from the US Census Bureau, Census Tracts 902 and 9701 had estimated populations of 4,481, with 24.7% (MOE +/- 7.6%) and 7,307, with 23.3% (MOE +/- 5.3%) below the poverty level, respectively (Table 5-11). All population groups within Census Tract 902 had a greater than 5% difference in comparison to their respective state populations with the exception of Asian and Two or More Races. Additionally, all populations greater than 5% different from the state were also greater than 5% difference in comparison to their respective county populations. The Census Bureau was unable to estimate the population of individuals of American Indian and Alaska Native and Native Hawaiian and Other Pacific Islander within Census Tract 902, and therefore no data is available. All populations within Census Tract 9701, with the exception of Two or More Races, American Indian and Alaska Native, and Black or African American, had greater than 5% differences in comparison to their respective state and county populations.

Table 5-11. Poverty Status – Census Tracts 902 and 9701 (Duplin and Sampson Counties)

Subject	Census Tract 902						Census Tract 9701					
	Total		Below poverty level		Percent below poverty level		Total		Below poverty level		Percent below poverty level	
	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-
Population for whom poverty status is determined	4,481	527	1,109	404	<u>24.7</u>	7.6	7,307	728	1,703	414	<u>23.3</u>	5.3
AGE												
Under 18	1,236	326	492	243	39.8	14.6	1,713	358	536	200	31.3	11.9
18 to 64	2,710	328	530	188	19.6	6.2	4,487	465	1,114	303	24.8	6.2
65 years and over	535	87	87	60	16.3	11	1,107	239	53	49	4.8	4.4
SEX												
Male	2,276	328	599	248	26.3	9.4	3,941	482	839	214	21.3	4.9
Female	2,205	299	510	194	23.1	7.3	3,366	366	864	288	25.7	8.6
RACE AND HISPANIC OR LATINO ORIGIN												
White	1,718	241.0	126.0				3367.0	559.0	462.0	251.0	13.7	7.0
Black or African American	1,020	314.0	462.0	289.0	45.3	21.1	1994.0	552.0	460.0	291.0	23.1	12.5
American Indian and Alaska Native	-	12.0	0.0	12.0	-	-	2.0	4.0	0.0	17.0	0.0	100.0
Asian	30	43.0	0.0	12.0	0.0	54.1	41.0	43.0	8.0	16.0	19.5	41.0
Native Hawaiian and Other Pacific Islander	-	12.0	0.0	12.0	-	-	0.0	17.0	0.0	17.0	-	-
Some other Race	634	311.0	278.0	202.0	43.8	24.1	914.0	577.0	387.0	274.0	42.3	29.7
Two or more races	88	87.0	0.0	12.0	0.0	29.9	249.0	201.0	4.0	9.0	1.6	4.2
Hispanic or Latino	1,648	510.0	521.0	284.0	31.6	14.5	1774.0	607.0	769.0	336.0	43.3	16.7
All individuals below:												
50 percent of poverty level	566	274					794	338				
125 percent of poverty level	1,716	485					2,337	497				
150 percent of poverty level	1,946	573					2,790	542				
185 percent of poverty level	2,254	576					3,573	704				
200 percent of poverty level	2,390	570					3,996	712				

All **orange** highlighted cells indicate a difference that is greater than 10% when compared to the county
All **bolded** and **underlined** cells indicate a difference that is greater than 10% when compared to the State.
Source: US Census, 2012-2016 ACS 5-Year Estimates

5.4 Household Income

Regional Setting

The following table (Table 5-12) was compiled using data from the Census Table S1901, Income in the Past 12 Months (in 2016 Inflation-Adjusted Dollars) 2012-2016 American Community Survey 5-Year Estimates for North Carolina. The North Carolina household income range with the highest percent was for \$50,000 to \$74,999, at 18.0%. The median household income was \$48,256 and the mean income was \$67,367. The household income range for Duplin County with the highest percent was \$15,000 to \$24,999, at 14.5%. The median household income was \$35,364 and the mean income was \$47,131. All income ranges below \$35,000 had percentages that were more than 10% higher than the state. Sampson County also showed a greater than 10% difference for all ranges below \$35,000 when compared to the state. Sampson County had the most concentrated household incomes in the \$15,000 to \$24,000 range at 15.3%. the Medium income of Sampson County was \$36,742 and the mean income was \$51,123.

Table 5-12. Household Income

Subject	North Carolina		Duplin County		Sampson County		Census Tract 902		Census Tract 9701	
	Households		Households		Households		Households		Households	
	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-
Total	3,815,392	9,701	21,770	485	23,451	446	1,483	123	2,480	198
Less than \$10,000	7.70	0.10	<u>12</u>	1.7	<u>10.0</u>	1.2	6.4	3.5	7.2	3.1
\$10,000 to \$14,999	6.10	0.10	<u>8.8</u>	1.3	<u>8.9</u>	1.3	3.7	2.6	6.4	3.8
\$15,000 to \$24,999	11.50	0.10	<u>14.5</u>	1.8	<u>15.3</u>	1.9	12.1	4.9	17.7	7.2
\$25,000 to \$34,999	11.40	0.10	<u>14.2</u>	1.7	<u>14.1</u>	1.6	18.7	5.5	13.9	5.8
\$35,000 to \$49,999	14.70	0.10	14.8	1.8	15.2	1.5	19.7	6.4	16.7	6.1
\$50,000 to \$74,999	18.00	0.10	16.6	1.7	17.7	1.8	18.2	4.6	20.5	6.9
\$75,000 to \$99,999	11.60	0.10	10.2	1.5	9.0	1.3	10.7	3.7	8.8	5.3
\$100,000 to \$149,999	11.10	0.10	6.4	1.2	6.7	1.1	6.3	2.7	5.8	3.5
\$150,000 to \$199,999	3.90	0.10	1.4	0.5	1.7	0.5	4.0	3.4	3.1	2.7
\$200,000 or more	3.90	0.10	1	0.5	1.5	0.5	0.1	0.2	0.0	1.3
Median income (dollars)	48,256	229	<u>35,364</u>	2,170	<u>36,742</u>	2,066	<u>41,452</u>	5,418	<u>39,130</u>	6,758
Mean income (dollars)	67,367	267	47,131	2,497	51,123	2,791	52,358	5,167	48,186	5,765

All **orange** highlighted cells indicate a difference that is greater than 10% when compared to the county
 All **bolded** and **underlined** cells indicate a difference that is greater than 10% when compared to the State.
 Source: US Census, 2012-2016 ACS 5-Year Estimates

Local Setting

According to the Census Table S1901, Income in the Past 12 Months (in 2016 Inflation-Adjusted Dollars) 2012-2016 American Community Survey 5-Year Estimates, Census Tract 902 had a median income of \$41,452 (Table 5-12). Income ranges within Census Tract 902 of \$25,000 to \$34,999 and \$35,000 to \$49,999 were greater than 10% different when compared to the state and county averages. The \$50,000 to \$74,999 income range was greater than 10% different than Duplin County, but not the state.

The income ranges within Census Tract 9701 of from \$15,000 to \$74,999 were all greater than 10% different when compared to the state averages. Additionally, the income ranges from \$15,000 to \$24,99 were greater than 10% different compared to the county averages. The median income for Census Tract 9701 was \$39,130. While both census tracts had median incomes greater than 10% less than the state, both median incomes are higher than their respective county averages (Table 5-12). Within the two-mile radius of the proposed permit location, the highest percent (29%) was in the \$25,000 to \$50,000 income range¹ (Table 5-13). Mean and median household income data is not provided in EJSCREEN, but per capita income is included.

Table 5-13. Household Income– Project Radius

Subject	1 miles			2 miles		
	Number	Percent	MOE	Number	Percent	MOE
Number of Households	69	100		338	100	
Owner Occupied	50	72		231	68	
Renter Occupied	20	28		107	32	
Per Capita Income (dollars)	15,432			15,513		
Household Income						
<\$15,000	21	31	78	82	24	91
\$15,000-\$25,000	19	27	87	54	16	99
\$25,000-\$50,000	17	25	88	99	29	125
\$50,000-\$75,000	7	10	60	61	18	60
\$75,000+	5	7	37	42	12	75

Per Capita Income

Per capita income is the mean income computed for every man, woman, and child in a particular group including those living in group quarters. It is derived by dividing the aggregate income of a particular group by the total population in that group (US Census Bureau). Per Capita Income data was obtained through the Census Table B19301, Per Capita Income in the Past 12 Months (In 2016 Inflation-Adjusted Dollars), 2012-2016 American Community Survey 5-Year Estimates. The per capita income was \$15,513 within the two-mile radius, lower than the census tracts, counties and the state. Duplin County had a per capita income of \$17,960. Sampson County had a per capita income of \$19,871. The per capita income within the two census tracts were \$17,865 (902) and \$16,985 (9701). North Carolina as a state had a significantly larger per capita income (\$26,779) than all of the local settings (Table 5-14).

¹ Income ranges provided in EJSCREEN provide fewer income ranges, making data less specific than US Census data.

Table 5-14. Per Capita Income

	North Carolina		Duplin County		Sampson County	
Subject	Per Capita Income		Per Capita Income		Per Capita Income	
	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-
Per Capita Income in Last 12 Months (Dollars)	26,779	127	17,960	924	19,871	1,063

	Census Tract 902		Census Tract 9701		One Mile		Two Miles	
Subject	Per Capita Income		Per Capita Income		Per Capita Income		Per Capita Income	
	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-
Per Capita Income in Last 12 Months (Dollars)	17,865	2,433	16,985	1,859	15,432	-	15,513	-
Source: US Census, 2012-2016 ACS								

6 Limited English Proficiency (LEP)

The following table (Table 6-1) was completed using data from Census Table B16001, Language Spoken at Home by Ability to Speak English for the population 5 years and over, 2011-2015 American Community Survey 5-Year Estimates for Duplin and Sampson Counties and census tracts 902 and 9701. These are the potential languages the Department could encounter around the project area where English assistance or translation may be necessary. Per the Safe Harbor Guidelines, should an LEP Group be identified during the pre-permit issuance process, written translations of vital documents for each eligible LEP language group that constitutes five percent or includes 1,000 members (whichever is less) of the population of persons eligible to be served or likely to be affected or encountered. If there are fewer than 50 persons in a language group that reaches the five percent trigger, then DEQ would not translate vital written materials but provide written notice in the primary language of the LEP language group of the right to receive competent oral interpretation of those written materials, free of cost. The Safe Harbor Guidelines apply to the translation of written documents only. Safe Harbor Guidelines are per the EPA guidance for LEP persons, and followed by DEQ when deemed appropriate. Across both census tracts, Spanish or Spanish Creole is the major language with 1,659 individuals identified who “speak English less than very well”. Census Tract 902 may have individuals who speak French Creole and speak English less than very well, although there is a high margin of error (9 individuals MOE +/- 15 individuals). All the languages (other than Spanish or Spanish Creole on the county level) have a relatively high margin of error. Only languages with a value greater than 0 for speaking English less than “very well” within one of the census tracts are included in this table. Vital documents relating to this permit application were translated into Spanish, per the Safe Harbor Guidelines.

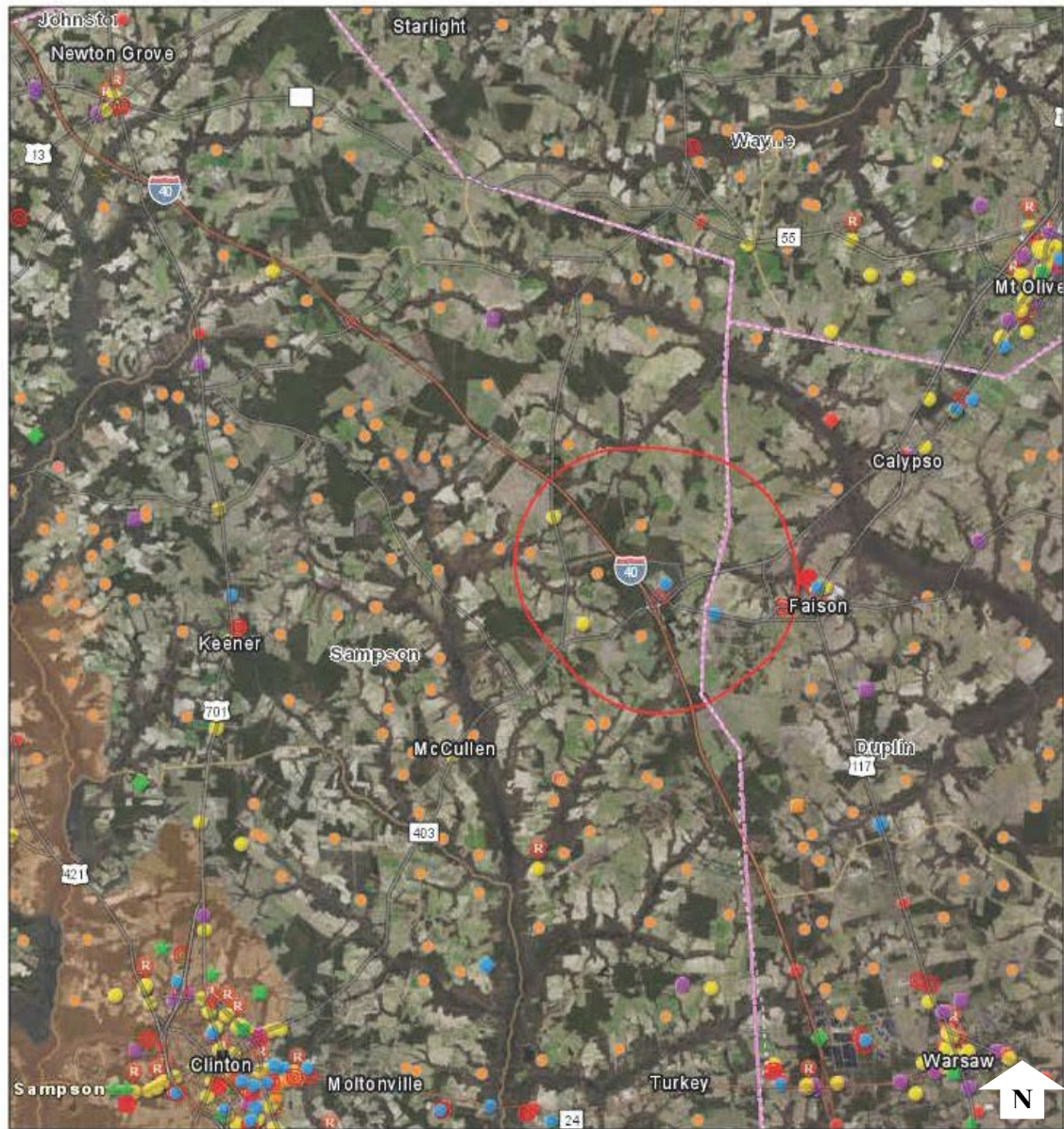
Table 6-1. Limited English Proficiency

1. LANGUAGE SPOKEN AT HOME	Duplin County		Sampson County		Census Tract 902		Census Tract 9701	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Total (population 5 years and over):	55440	28	59,743	26	3,969	424	6,755	635
Speak only English	44,834	465	50,319	388	2,668	314	5,352	507
Spanish or Spanish Creole:	10,291	430	8,993	383	1,288	444	1,396	454
Speak English "very well"	3,452	470	3,481	454	486	240	539	196
Speak English less than "very well"	6,839	617	5,512	379	802	266	857	336
French Creole	9	15	64	49	9	15	0	17
Speak English "very well"	0	28	12	20	0	12	0	17
Speak English less than "very well"	9	15	52	37	9	15	0	17
Other Native North American Languages	0	28	10	18	0	12	7	18
Speak English "very well"	0	28	3	5	0	12	0	17
Speak English less than "very well"	0	28	7	18	0	12	7	18

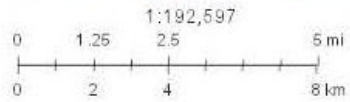
Source: US Census 2011-2015 ACS

7 Local Industrial Sites

The facility location of 5 Connector Road, Faison, NC, 28341 (Sampson County), is mostly surrounded by industrial and agricultural areas. Within the two-mile radius, there are nine permitted activities, facilities, or incidents (as of April 22, 2021), not including Enviva’s air quality and NPDES permits (Figure 3). Of those nine, four are swine animal feeding operations permits, 1 Above Ground Storage Tank Incident, and three are underground storage tank incidents. The remaining are one National Pollutant Discharge Elimination System (NPDES) stormwater permit for Southern Produce Distributors, Inc, and one synthetic minor air quality permit for Barnhill Contracting Faison Plant.



- Air Quality Permitted Facilities
- NPDES Wastewater Treatment Facility Permits
- Animal Operation Permits
- Major
- Swine State COC
- Minor
- Swine NPDES COC
- Solid Waste Septage Sites
- Animal Individual State
- NPDES_Stormwater_Permits



Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community, NC Counties, NCCGIA, NC OneMap, US EPA, NCDOT

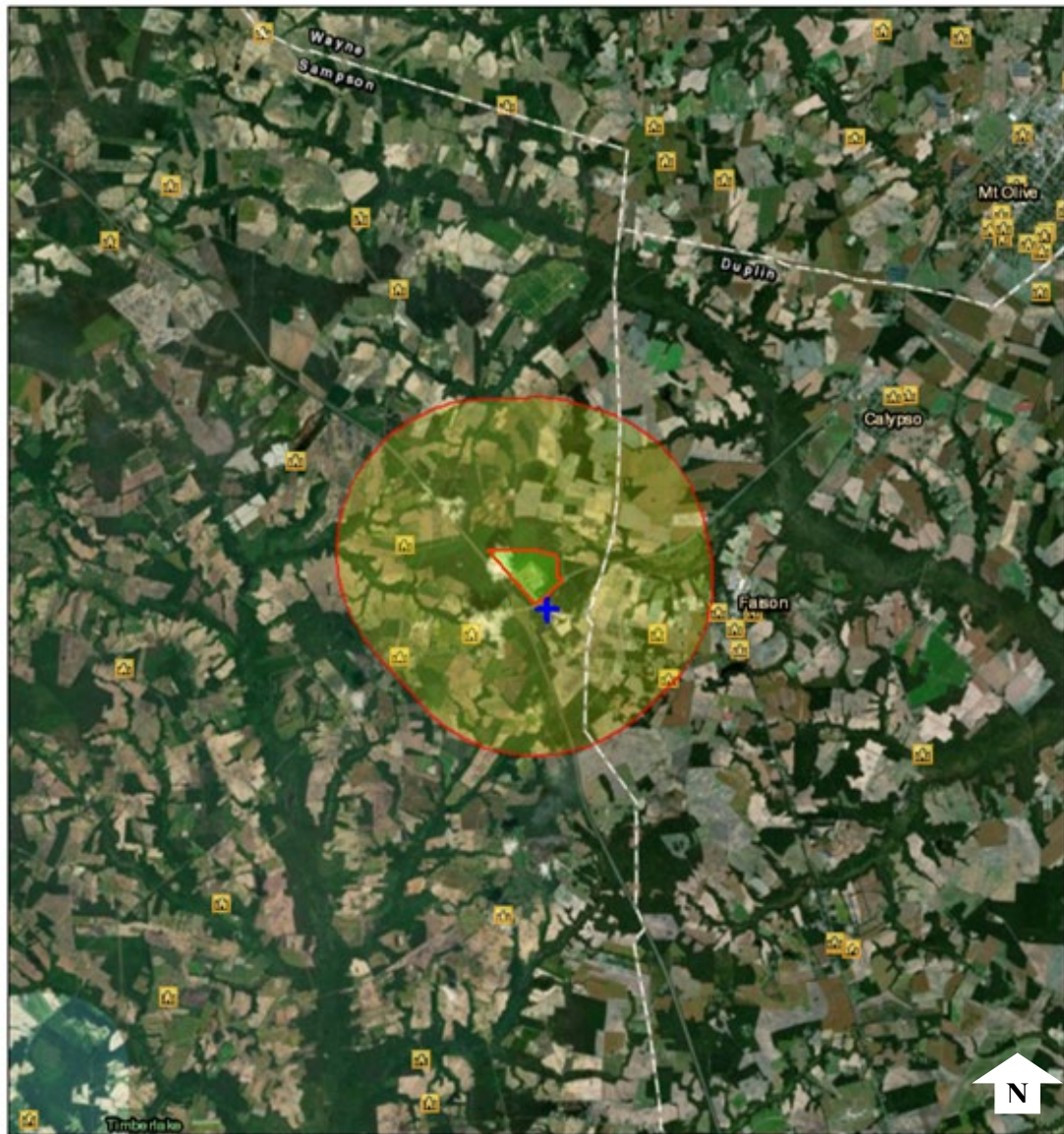
Figure 3. Permitted facilities and incidents within the 2-mile radius surrounding the Enviva Facility.

8 Local Sensitive Receptors

The 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 a healthy individual aged between 18 and 64.

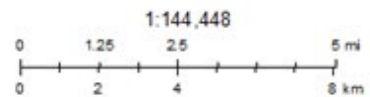
Within the two-mile project radius, the following were identified as potential sensitive receptors:

- East Coast Migrant Headstart,
- Poplar Grove Baptist Church,
- Bethlehem Church, and
- New Church of Christ.



September 13, 2018

- 2-mile Radius
- Enviva Facility
- ⛪ Churches



Esri, HERE, Garmin, © OpenStreetMap contributors, and the GIS user community
 Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community
 EPA OEI, OFA

EJSCREEN 2018

Figure 4. Sensitive receptors surrounding the Enviva Sampson facility

9 Health

The University of Wisconsin Population Health Institute, in collaboration with the Robert Wood Johnson Foundation, calculated a County Health Rankings system for all the states within the United States (www.countyhealthrankings.org). This ranking is based on health outcomes (such

as lifespan and self-reported health status) and health factors (such as environmental, social and economic conditions). According to this 2021 report, out of all 100 counties in North Carolina (with 1 indicating the healthiest), Sampson County is ranked 80th in health factors and 67th in health outcomes. Duplin County is ranked 85th in health factors and 58th in health outcomes (Figure 5).

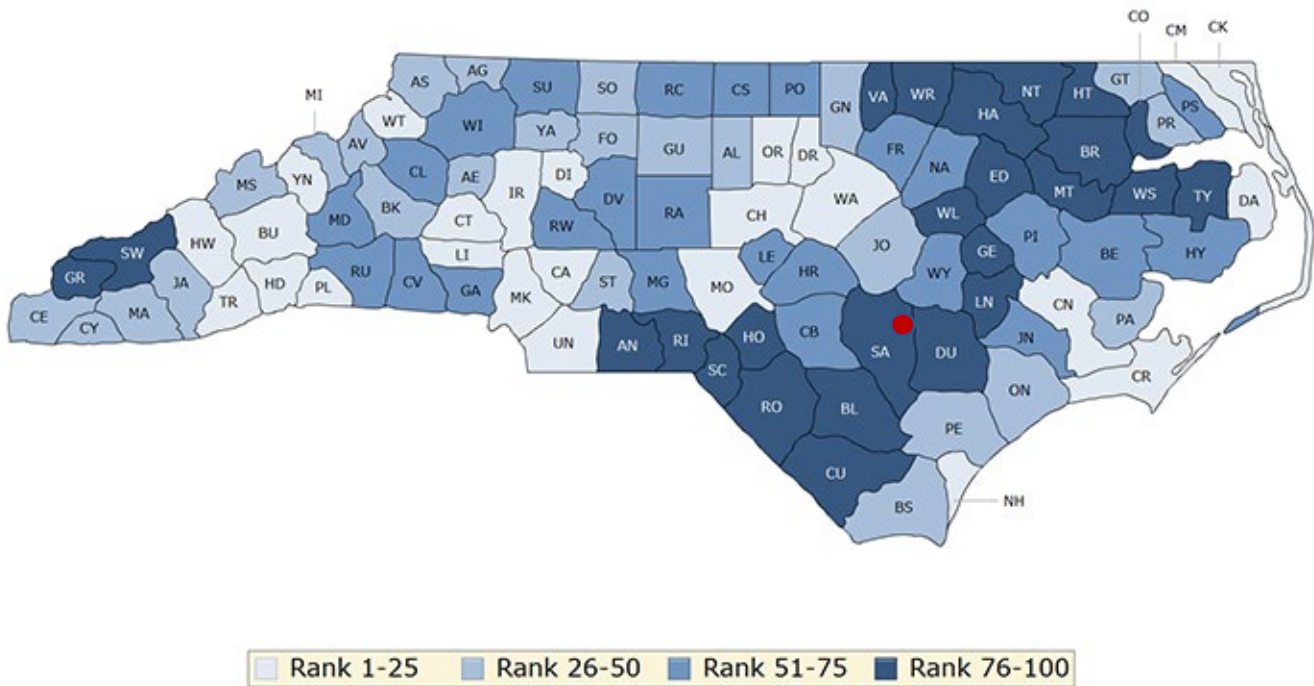


Figure 5. County health rankings for North Carolina, provided by the University of Wisconsin Public Health Institute.

According to the DEQ Community Mapping System Environmental Justice Tool, all causes of death (per 100,000 deaths) identified showed a higher rate across the two counties than the state as a whole (Table 9-1). However, total asthma hospitalizations for the two counties (50) were lower than the state average (90). Preterm birth rates for the 2 counties (9.6) were also slightly lower than the state average (10).

Table 9-1. Health Assessment - Causes of Death (Duplin and Sampson Counties vs. North Carolina)

Cause of Death	Counties	North Carolina
Cancer	173.75	169.1
Heart Disease	173.4	163.7
Stroke	51.1	43.1
Cardiovascular Disease	240.55	221.9
Diabetes	37.95	22.8

Source: NCDEQ 2019 EJ Tool

10 Conclusion

Environmental justice is 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 (EPA). This report examined the demographic and environmental conditions in North Carolina, Sampson and Duplin Counties, census tracts 902 and 9701, and the one and two-mile radius around the Enviva Sampson facility. Emission control plans outlined in the permit modification application and county level health data were also included.

Enviva Sampson, LLC has applied for a modification to their existing permit. The modification application and draft permit includes greater emission control measures and an increase in production. The additional air pollution control devices will lower the potential and actual emissions from the facility, so that it can be classified as a PSD minor source and a minor source of HAP emissions.

It is important to keep in mind that based on the available data, the following limitations of this evaluation: census data is from 2010 and may be outdated; the more recent census data through 2016 are estimates; EJSCREEN does not provide all of the data categories that were used in this analysis so the census tract and county data cannot be compared to the radius used surrounding the facility boundary; census tracts can still be large areas and do not allow for exact locations of each population; some of the census tracts slightly overlap with the two-mile radius; and the Department cannot determine which populations are in that small amount of overlap around the facility.

The Department has assessed the available demographic and socioeconomic data of the communities surrounding the Enviva Sampson, LLC facility in regards to its permit application for enhanced emission controls. The racial composition showed a large population of Hispanic or Latino, Black or African American and Some Other Race closest to the facility within the one and two-mile radius. The Hispanic or Latino population was higher in both counties, though slightly higher in Duplin County, and even a larger percentage in the 1 and 2-mile radius (36% and 35%, respectively) and the local census tracts (24.1% and 24.6%). Both the county level and census tract data showed relatively large estimates of individuals who speak Spanish or Spanish Creole and speak English less than "very well." Additional outreach strategies were planned and implemented to connect with the elevated number of Hispanic or Latino individuals in the area, with the potential for many who are considered LEP persons. Both Sampson and Duplin counties showed much higher rates of individuals living below the poverty level when compared to the state. However, Census Tract 9701 in Sampson County showed a lower poverty rate for almost all subjects than the county as a whole. Alternatively, Census Tract 902 showed a higher rate of poverty across nearly all subjects when compared to both the state and the county. Slightly contradictory to the poverty levels were the household incomes, which showed higher percentages in the lowest income brackets for the counties, but not for the census tracts. However, when looking at the one and two-mile radius data, the percent of households in the two lowest income brackets decreased from the one-mile radius to the two-mile radius, indicating the lowest income earning households are located closer to the facility. There was also a high concern for disability within Census Tract 9701 (overall disability rate of 24.3%).

Based on the EJ Report, the following outreach will be conducted:

1. Translate notices or other essential documents into Spanish;
2. Contact known interest community organizations;
3. Post notices to both the Sampson and Duplin County Papers;
4. Ensure the state-recognized Coharie tribe is kept up to date throughout the permitting process;
5. Consult the list of sensitive receptors when conducting outreach; and
6. Notify Sampson and Duplin County health officials of the permit application.