DRAFT ENVIRONMENTAL JUSTICE REPORT

University of North Carolina at Chapel Hill

North Carolina DEQ
3/20/2021

1   Draft EJ Report

The draft EJ Report is an initial look at the demographics and socioeconomics of a facility's surrounding community area. This includes information within a radius determined by the North Carolina Department of Environmental Quality (Department or DEQ), race and ethnicity (decennial census year), poverty status, per capita income, and ability to speak English (most current American Community Survey (ACS) census range), the current North Carolina Department of Commerce county tier, and presence of Native American territory. The draft EJ Report does not include a reconnaissance of the community.

A draft EJ report will be conducted at the beginning of the permit application process when requested by the appropriate Division Director. This report will be distributed to interested community members (if known) and posted to the DEQ website with the relevant permit application before the close of the public comment period. The primary goal is to encourage feedback and suggestions from the surrounding community, industry, and environmental groups throughout the comment period.

It is important to keep in mind, that based on the data available, the following limitations of this evaluation exist: census data is from 2010 and may be outdated; the more recent American Community Survey data through 2018 are estimates; the U.S. EPA's EJSCREEN does not provide all of the data categories that were used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 evaluating the facility boundary; census tracts can be large areas that do not identify exact locations of each population.

The Department has prepared this overview of the demographic and socioeconomic data of the communities surrounding the University of North Carolina at Chapel Hill facility to foster communication prior to the Division of Air Quality's final action on the permit application.

2 Environmental Justice Evaluation

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 evaluation examines the demographic and environmental conditions in Orange County, census tracts 107.03, 107.05, 113, 114, 116.01, 116.02, 117, 122.02, and the one-mile buffer around the property boundary of the University of North Carolina at Chapel Hill (UNC-CH) facility. Finally, the demographics of the entire state of North Carolina are also considered as they compare to both the county and local census tract and radius settings.

The Department has assessed the permit application and the potential impact on communities surrounding the facility as proposed in the permit application. Accordingly, the draft Environmental Justice Report will include:

- Overview of the permit application submitted by UNC-CH
- Study of area demographics [determined by utilizing the US EPA 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 (using the NCDEQ Community Mapping System https://ncdenr.maps.arcgis.com/apps/webappviewer/index.html?id=1eb0fbe2bcfb4cccb3cc212af8a0b8c8).

Demographics (including race and ethnicity, poverty status, and per capita incomes) for Orange County will be compared to the local (census tracts and project radius) level data to identify any disparities surrounding the project area. Using standard environmental justice guidelines from the EPA and National Environmental Policy Act (NEPA) documentation, the following conditions will be flagged as potentially underserved communities:

- 10% or more in comparison to the county or state average

- 50% or more minority

- 5% or more in comparison to the county or state average for poverty

3   Proposed Project

This permitting action is the combination of four applications for The University of North Carolina at Chapel Hill (UNC-CH). Those applications include:

- Renewal of the facility's existing Title V air permit (**6800043.15B)**
- Modification to incorporate boiler operating limits into the Title V permit to match current federal Maximum Achievable Control Technology (MACT) standard (**6800043.15A)**
- Modification to supplement the baghouse emission control equipment to ensure compliance with federal MACT standard (**6800043.18A)**
- Modification to replace existing diesel-fired emergency generator engine (**6800043.19A)**

Each is summarized below:[1]

Application No. 6800043.15A (Title V Significant Application)

Air Permit Application No. **6800043.15A** was received on **May 18, 2015** for a significant modification to Boilers ID Nos. ES-001-Boiler #6 and ES-002-Boiler #7 to incorporate limestone injection rate and O_2 trim concentration operating limits into the Title V permit within 60-days following the N.C. Division of Air Quality's (DAQ) approval of the 112(j) performance test report. However, because the 112(j) permit condition sunset and as of May 20, 2019 all boilers at the facility are subject to 15A NCAC 02D .1111: Maximum Achievable Control Technology 40 CFR 63, Subpart DDDDD. No further processing of this application will be necessary as part of this permitting action.

Application No. 6800043.15B (Title V Renewal Application)

This permitting action is a renewal of an existing Title V permit pursuant to 15A NCAC 02Q .0513. The renewal application **6800043.15B** was received on **July 24, 2015**, or at least nine months prior to the original expiration date **April 30, 2016**. Therefore, the existing permit shall not expire until the renewal permit has been issued or denied. All terms and conditions of the existing permit shall remain in effect until the renewal permit has been issued or denied.

Application No. 6800043.18A (Title V Minor Modification Application)

Air Permit Application No. **6800043.18A** was received on **March 19, 2018** for a minor modification pursuant to 15A NCAC 02Q .0515 to add a dry sorbent injection system (DSI) (ID Nos. CD-004.3 and CD-005.3) on each of ES-001-Boiler #6 and ES-002-Boiler #7 to supplement the existing hydrogen chloride (HCl) control provided by the limestone injection/baghouse systems to ensure compliance with the 15A NCAC 02D .1111 Maximum Achievable Control Technology (MACT) 40 CFR 63, Subpart DDDDD, HCl emission limit. The following tables indicate the emissions change associated with this permit application on a per boiler basis:

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[1] These are subject to change throughout the permitting process before any final action is taken by DEQ.

Table 1. Boiler No. 6 – Coal Fired Emission Changes

Pollutant	Potential Pre-DSI Installation			Potential Post-DSI Installation			Delta	
	lb/MMbtu (CO-ppm)	lb/hr	ton/yr	lb/MMbtu (CO-ppm)	lb/hr	ton/yr	lb/hr	ton/yr
PM	0.004	1.29	5.66	0.00204	0.66	2.89	-0.63	-2.77
HCl	0.033	10.66	46.71	0.0195	6.30	27.60	-4.36	-19.11
Hg	4.30E-07	1.39E-04	6.09E-04	6.5E-08	2.10E-05	9.2E-05	-1.18E-04	-5.17E-04
CO	26.8 ppm	-	-	29.6 ppm	-	-	-	2.8 ppm

Table 2. Boiler No. 7 – Coal Fired Emission Changes

Pollutant	Potential Pre-DSI Installation			Potential Post-DSI Installation			Delta	
	lb/MMbtu (CO-ppm)	lb/hr	ton/yr	lb/MMbtu (CO-ppm)	lb/hr	ton/yr	lb/hr	ton/yr
PM	0.0025	0.81	3.54	0.00185	0.60	2.62	-0.21	-0.92
HCl	0.033	10.66	46.71	0.015	4.85	21.23	-5.81	-25.48
Hg	2.75E-07	8.89E-05	3.89E-04	6.70E-08	2.17E-05	9.48E-05	-6.72E-05	-2.94E-04
CO	35.4 ppm	-	-	35.5 ppm	-	-	-	0.10 ppm

Application No. 6800043.19A (Title V Minor Modification Application)

Air Permit Application No. **6800043.19A** was received on **June 5, 2019** for a minor modification pursuant to 15A NCAC 02Q .0515 to replace one existing 168 Hp (125 kW) diesel-fired emergency generator engine with one new 609 Hp (400 kW) diesel-fired emergency generator engine. In addition to this change, the Permittee also requested modifications to the list of insignificant activities to remove equipment no longer in service. The following table indicates the emissions change associated with this permit application (Table 3).

Table 3.Total Modeled Emission Changes

Pollutant	Potential Emissions – 125kW Emergency Generator			Potential Emissions – 400kW Emergency Generator			Delta	
	Emission Factor (lb/hp-hr)[1,2]	lb/hr	ton/yr	Emission Factor (lb/hp-hr)[3,4]	lb/hr	ton/yr	lb/hr	ton/yr
Criteria Air Pollutants Emissions								
NO_x[4]	3.10E-02	5.21	1.30	5.79E-03	3.10	0.78	-2.11	-0.52
CO[4]	6.68E-03	1.12	0.28	5.75E-03	3.09	0.77	1.97	0.49
SO_2[2,4]	1.21E-05	0.0020	0.0005	1.21E-05	0.0065	0.0016	0.0045	0.0011
PM[4]	2.20E-03	0.37	0.092	3.29E-04	0.18	0.044	-0.19	-0.048
VOC	2.51E-03	0.42	0.11	7.89E-04	0.42	0.11	0	0
Hazardous Air Pollutants Emissions								
Acetaldehyde	5.37E-06	9.02E-04	2.25E-04	1.76E-07	9.44E-05	2.36E-05	-8.08E-04	-2.01E-04
Acrolein	6.48E-07	1.09E-04	2.72E-05	5.52E-08	2.96E-05	7.40E-06	-7.94E-05	-1.98E-05
Benzene	6.53E-06	1.10E-03	2.74E-04	5.43E-06	2.91E-03	7.28E-04	1.81E-03	4.54E-04
Benzolapyrene	1.32E-09	2.21E-07	5.53E-08	1.80E-09	9.66E-06	2.41E-07	9.44E-06	1.86E-07
Formaldehyde	8.26E-06	1.39E-03	3.47E-04	5.52E-07	2.96E-04	7.40E-05	-1.09E-03	-2.73E-04
Napthalene	5.94E-07	9.97E-05	2.49E-05	9.10E-07	4.88E-04	1.22E-04	3.88E-04	9.71E-05
PAH	-	-	-	1.48E-06	7.94E-04	1.98E-04	7.94E-04	1.98E-04
Toluene	2.86E-06	4.81E-04	1.20E-04	1.97E-06	1.06E-03	2.64E-04	5.79E-04	1.44E-04
Xylene	2.00E-06	3.35E-04	8.38E-05	1.35E-06	7.24E-04	1.81E-04	3.89E-04	9.72E-05

In addition to the four applications described above, UNC performed 1-hr facility-wide National Ambient Air Quality Standards (NAAQS) modeling in response to third party modeling indicating potential 1-hr violations of both the NO2 and SO2 standards. UNC's approved modeling includes the following list of permit modifications reflecting actual operating conditions of the affected sources at the facility:

– Modification of the permit limit of hours of operation of the two non-emergency engines based on their historical usage and EPA's intermittent operation determination guidelines.
– Addition of a new pound per million Btu heat input limit per 30-day rolling average as part of a new 1-hr SO2 NAAQS condition.
– Addition of a maximum sulfur content of the No. 2 fuel oil fired in Boiler 8 for SO2 compliance with NSPS Subpart Dc.

4   Geographic Area

The University of North Carolina at Chapel Hill facility is located at 200 East Cameron Avenue, CB#1000 Chapel Hill, NC 27599 1000 (Figure 1).
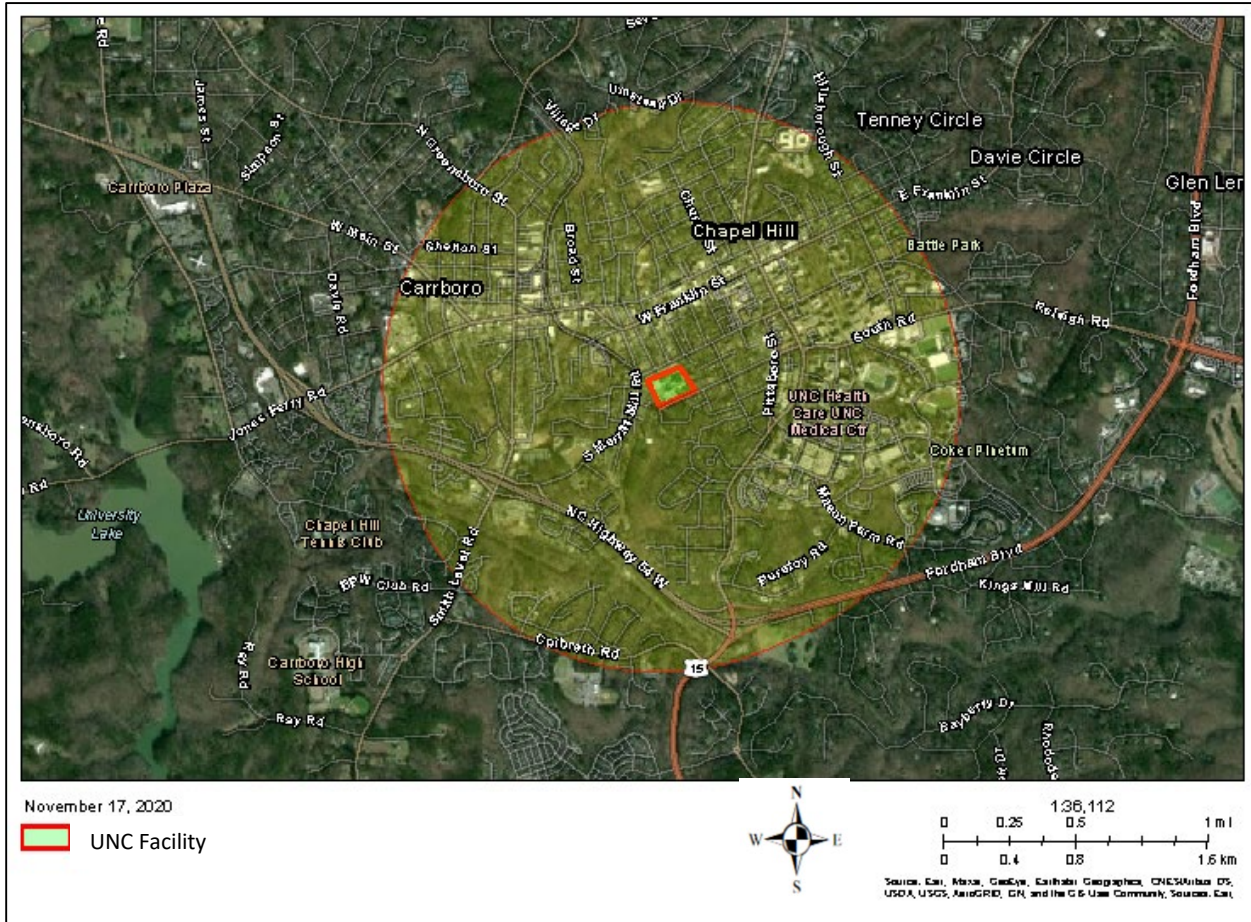
Figure 1. Facility location with one-mile radius.

Regional Setting

The facility is located in Orange County, and the one-mile buffer surrounding the facility stays within Orange County. Orange County is designated as a Tier 3 County. Tier 3 counties encompass the 20 least distressed counties in the state based on average unemployment rate, median household income, percentage growth in population, and adjusted property tax per capita. The one-mile radius used in this analysis enters into eight census tracts, 107.03, 107.05, 113, 114, 116.01, 116.02, 117, and 122.02 (Figure 2). Census tracts are small, relatively permanent statistical subdivisions of a county with a unique numeric code (US Census Bureau). The one-mile buffer does not encompass any land within state designated tribal statistical areas, however, Orange County is recognized as one of the counties where the Occaneechi Band of the Saponi Nation resides, according to the N.C. Commission of Indian Affairs.
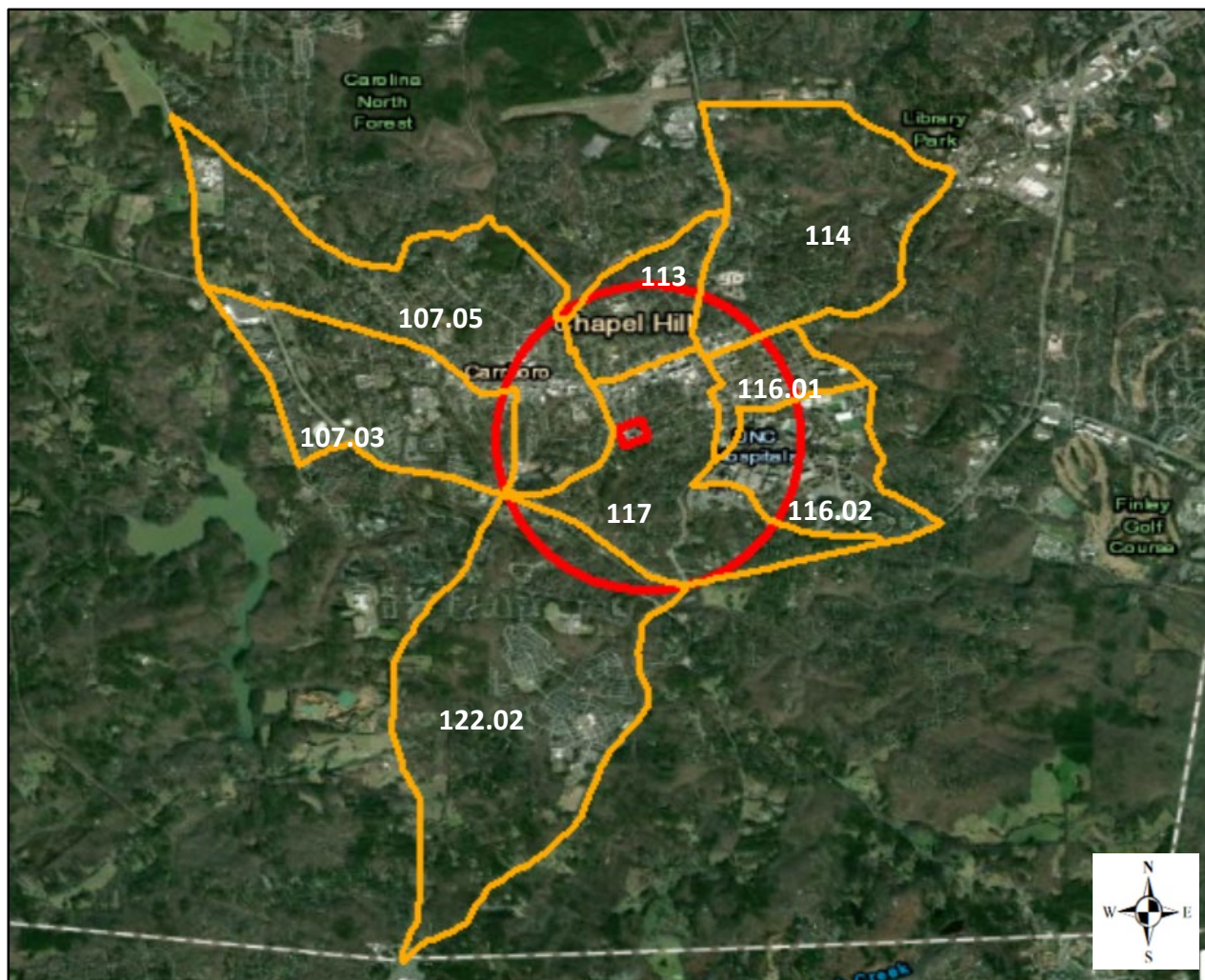
Figure 2. Census tracts surrounding facility location.

5.   Regional and Local Settings

The following 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 included are those that overlap into the one-mile radius. Demographics of the county 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 potentially underserved communities:

1. 10% or more in comparison to the county or state average
2. 50% or more minority
3. 5% or more in comparison to the county or state 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 16.7% 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 2018 were used. 2010 Census Bureau data is real

data gathered every ten years, whereas the estimates from the more recent years are modeled based on the real data. For the data gathered from the 2018 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 Table 9: Hispanic or Latino, and Not Hispanic or Latino by Race, North Carolina's population totaled 9,535,483 individuals (Table 4). The three most common racial groups across the state were White alone (65.3%), Black or African-American (21.2%), and Hispanic or Latino (of any race) at 8.4%.

Orange County had a total population of 133,801 individuals (Table 4). The three most common racial or ethnic groups in Orange County were White (70.8%), Black or African American (11.8%), and Hispanic or Latino (of any race) (8.2%). The Asian population in Orange County was greater than 10% different when compared to the state.

Table 4. Regional Setting - Race and Ethnicity

	North Carolina		Orange County	
Race and Ethnicity	**Number**	**Percent**	**Number**	**Percent**
Total Population	9,535,483	100.0	133,801	100
White	6,223,995	65.3	94,671	70.8
Black or African American	2,019,854	21.2	15,722	11.8
American Indian or Alaska Native	108,829	1.1	383	0.3
Asian	206,579	2.2	8,996	**6.7**
Native Hawaiian and Other Pacific Islander	5,259	0.1	35	0.0
Some other Race	15,088	0.2	316	0.2
Two or More Races	155,759	1.6	2,661	2.0
HISPANIC OR LATINO (of any race)	800,120	8.4	11,017	8.2
Source: US Census Bureau, 2010 Census All **bolded and orange cells** indicate a difference that is greater than 10% when compared to the state.				

Local Setting

The one-mile radius had a total population of 22,082 individuals (Tables 5 and 5a). The three most common racial or ethnic groups were White (70%), Black or African American (13%), and Hispanic or Latino (of any race) (11%). The Asian and Hispanic or Latino (of any race) population were both greater than 10% different when compared to the county and the state.

Census Tract 107.03 had a total population of 6,064 individuals. The three most common racial or ethnic groups were White (44.7%), Hispanic or Latino (of any race) (28.6%), and Black or African American (16.0%). and The Hispanic or Latino (of any race) population was greater than 10% different when compared to the county and the state.

Census Tract 107.05 had a total population of 4,573 individuals. The three most common racial or ethnic groups were White (68.4%), Black or African American (13.1%), and Hispanic or Latino (of any race) (11%).

Census Tract 113 had a total population of 2,926 individuals. The three most common racial or ethnic groups in this census tract were White (65.2%), Black or African American (23.6%), and Hispanic or Latino (of any race) (6.0%).

Census Tract 114 had a total population of 3,607 individuals (Table 5a). The three most common racial or ethnic groups were White (87.2%), Asian (6.6%), and Black or African American (5.7%). The Asian population was greater than 10% different when compared to the state.

Census Tract 116.01 had a total population of 2,350 individuals. The three most common racial or ethnic groups were White (79.3%), Black or African American (9.1%), and Asian (6.0%). The Asian population was greater than 10% different when compared to the state.

Census Tract 116.02 had a total population of 5,786 individuals. The three most common racial or ethnic groups were White (66.2%), Black or African American (14.3%), and Asian (12.6%). The Asian population was greater than 10% different when compared to the county and the state.

Census Tract 117 had a total population of 4,190 individuals. The three most common racial or ethnic groups were White (80.7%), Black or African American (6.9%), and Asian (5.9%).

Census Tract 122.02 had a total population of 5,624 individuals. The three most common racial or ethnic groups were White (70.7%), Asian (13.8%), and Hispanic or Latino (8.0%). The Asian population was greater than 10% different when compared to the state.

Table 5. Local Setting – Race and Ethnicity

Subject	Project Area - 1 Mile		Census Tract 107.03		Census Tract 107.05		Census Tract 113	
Race and Ethnicity	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Total Population	22,082	100	6,064	100	4,573	100	2,926	100
White	15,373	70	2,708	44.7	3,130	68.4	1,907	65.2
Black or African American	2,947	13	973	16.0	597	13.1	690	23.6
American Indian or Alaska Native	79	1	18	0.3	11	0.2	4	0.1
Asian	1,818	**8**	490	**8.1**	198	4.3	85	2.9
Native Hawaiian and Other Pacific Islander	8	0	2	0.0	4	0.1	0	0.0
Some other Race	1,293	6	20	0.3	26	0.6	85	2.9
Two or More Races	564	3	119	2.0	99	2.2	48	1.6
HISPANIC OR LATINO (of any race)	2,480	**11**	1,734	**28.6**	508	**11.0**	182	6.0

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

Table 5a. Local Setting – Race and Ethnicity (cont'd)

Subject	Census Tract 114		Census Tract 116.01		Census Tract 116.02		Census Tract 117		Census Tract 122.02	
Race and Ethnicity	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**	**Number**	**Percent**
Total Population	3,607	100	2,350	100	5,786	100	4,190	100	5,624	100
White	3,144	87.2	1,864	79.3	3,833	66.2	3,382	80.7	3,978	70.7
Black or African American	204	5.7	213	9.1	829	14.3	289	6.9	256	4.6
American Indian or Alaska Native	11	0.3	4	0.2	25	0.4	10	0.2	6	0.1
Asian	238	**6.6**	142	**6.0**	729	**12.6**	248	5.9	775	**13.8**
Native Hawaiian and Other Pacific Islander	2	0.1	0	0.0	0	0.0	1	0.0	1	0.0
Some other Race	8	0.2	5	0.2	23	0.4	9	0.2	11	0.2
Two or More Races	66	1.8	42	1.8	113	2.0	91	2.2	152	2.7
HISPANIC OR LATINO (of any race)	161	4.0	80	3.0	234	4.0	160	4.0	445	8.0
Source: US Census Bureau, 2010 Census All **bolded and orange cells** indicate a difference that is greater than 10% when compared to the state. All **bolded and blue cells** indicate a difference that is greater than 10% when compared to the county and state.										

5.2 Age and Sex

Regional Setting

According to the 2010 US Census Data Table P 12: Sex by Age, and Table P13: Median Age, North Carolina had a total population of 9,535,483 individuals (Table 6). The largest percentage of the total state population was between the ages of 18 and 64 (63.1%), followed by under 18 years (23.9%), and 65 years and older (12.9%).

Orange County had a total population of 133,801 individuals. The largest percentage of the total county population was between the ages of 18 and 64 (69.5%), followed by under 18 years (18.3%). The median age was slightly lower in Orange County than the state.

Table 6. Regional Setting - Age Groups and Sex

| Age | North Carolina | | | | | | Orange County | | | | | |
| | Number | | | Percent | | | Number | | | Percent | | |
	Both sexes	Male	Female	Both sexes	Male	Female	Both Sexes	Male	Female	Both Sexes	Male	Female
Total Population	9,535,483	4,645,492	4,889,991	100	100	100	133,801	63,954	69,847	100	100	100
Under 5 years	632,040	322,871	309,169	6.6	7	6.3	6,890	3,496	3,394	5.1	5.5	4.9
Under 18 years	2,281,635	1,167,303	1,114,332	23.9	25.1	22.8	24,473	10,792	13,681	18.3	16.9	19.6
18 to 64 years	6,019,769	2,954,233	3,065,536	63.1	63.6	62.7	92,946	44,117	48,829	69.5	69.0	69.9
65 years and over	1,234,079	523,956	710,123	12.9	11.3	14.5	12,889	5,549	7,340	9.6	8.7	10.5
Median Age	37.4	36	38.7				33.1	32.5	33.8			

Local Setting

According to the 2010 US Census Data Table P 12: Sex by Age, and Table P13: Median Age, all of the census tracts had a much younger median age than the state and in most cases, the county as well (Tables 7 and 7a).

Table 7. Local Setting - Age Groups and Sex

| Age | Census Tract 107.03 | | | | | | Census Tract 107.05 | | | | | |
| | Number | | | Percent | | | Number | | | Percent | | |
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Total Population	6,064	3,060	3,004	100%	100%	100%	4,573	2,224	2,349	100%	100%	100%
Under 5 years	401	214	187	6.6	7.0	6.2	261	121	140	5.7	5.4	6.0
Under 18 years	1,054	547	507	17.4	17.9	16.9	779	387	392	17.0	17.4	16.7
18 to 64 years	4,665	2,407	2,258	76.9	78.7	75.2	3,508	1,724	1,784	76.7	77.5	75.9
65 years and over	345	106	239	5.7	3.5	8.0	286	113	173	6.3	5.1	7.4
Median Age	28.6	28.7	28.5				30.9	31.5	30.4			

Table 6a. Local Setting - Age Groups and Sex (cont'd)

Age	Census Tract 113						Census Tract 114					
	Number			Percent			Number			Percent		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Total Population	2,926	1,423	1,503	100%	100%	100%	3,834	1,679	2,155	100%	100%	100%
Under 5 years	80	41	39	2.7	2.9	2.6	73	33	40	1.9	2.0	1.9
Under 18 years	279	143	136	9.5	10.0	9.0	273	143	130	7.1	8.5	6.0
18 to 64 years	2,505	1,232	1,273	85.6	86.6	84.7	3,219	1,368	1,851	84.0	81.5	85.9
65 years and over	142	48	94	4.9	3.4	6.3	342	168	174	8.9	10.0	8.1
Median Age	22.4	22.7	22.1				22.7	24.1	22.1			

Age	Census Tract 116.01						Census Tract 116.02					
	Number			Percent			Number			Percent		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Total Population	2,350	1,081	1,269	100%	100%	100%	5,786	2,404	3,382	100%	100%	100%
Under 5 years	0	0	0	0.0	0.0	0.0	173	102	71	3.0	4.2	2.1
Under 18 years	6	3	3	0.3	0.3	0.2	267	153	114	4.6	6.4	3.4
18 to 64 years	2,344	1,078	1,266	99.7	99.7	99.8	5,510	2,248	3,262	95.2	93.5	96.5
65 years and over	0	0	0	0.0	0.0	0.0	9	3	6	0.2	0.1	0.2
Median Age	20.2	20.2	20.2				19.7	19.7	19.6			

Age	Census Tract 117						Census Tract 122.02					
	Number			Percent			Number			Percent		
	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female
Total Population	4,190	2,133	2,057	100%	100%	100%	5,624	2,684	2,940	100%	100%	100%
Under 5 years	81	47	34	1.9	2.2	1.7	377	204	173	6.7	7.6	5.9
Under 18 years	240	133	107	5.7	6.2	5.2	1,656	851	805	29.4	31.7	30.0
18 to 64 years	3,768	1,920	1,848	89.9	90.0	89.8	3,579	1,699	1,880	63.6	63.3	70.0
65 years and over	182	80	102	4.3	3.8	5.0	389	134	255	6.9	5.0	9.5
Median Age	22.1	22.1	22.1				32.1	31.1	33.4			

Project Radius

EJSCREEN identified a population of 19,809 individuals within the one-mile radius surrounding the UNC facility. The largest population was 18+ years (94%), followed by under 18 years at 6% (Table 8).

Table 7. Project Radius - Age Groups and Sex

Age	Project Area - 1 Miles					
	Number			Percent		
	Both sexes	Male	Female	Both sexes	Male	Female
Total Population	19,809	9,106	10,703	100	46	54
Under 5 years	453			2		
Under 18 years	1,224			6		
18 years and over	18,585			**94**		
65 years and over	751			4		
Source: 2019 EJSCREEN, 2010 Census						

5.3 Disability

Regional Setting

According to the 2018 American Community Survey 5-Year Estimates, Table S1810 Disability Characteristics from the US Census Bureau, the state of North Carolina had an estimated total population of 9,952,031 noninstitutionalized citizens. Of those individuals, an estimated 13.6% (MOE +/- 0.1%) had a disability. The largest population of disabled civilians were 75 years and over (50.1%, MOE +/- 0.4%). The second largest population was the 65 years to 74 years at 26.6% (MOE +/- 0.3%). By race, American Indian and Alaskan Native had the highest estimated disability rate of 18.5% (MOE +/- 0.8%). Black or African-American, White alone, and Two or More Races had the next three highest population estimates with disabilities in North Carolina, at 14.8% (MOE +/-0.2%), 14.6% (MOE +/- 0.1%), and 11.4% (MOE +/- 0.5%), respectively (Table 9).

Orange County had an estimated total population of 142,298 noninstitutionalized citizens. Of those, an estimated 8.8% (MOE +/- 0.6%) had a disability. The largest population of disabled civilians by race was Native Hawaiian and Other Pacific Islander (100.0%, MOE +/- 100.0%), followed by American Indian and Alaska Native (30.4%, MOE +/- 12.4%), both of which were greater than 10% different when compared to the state. The majority of the disabled population in Orange County have estimates that are smaller than those of the state.

Table 8. Disability Status – Regional Setting

Subject	North Carolina						Orange 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	9,952,031	1,743	1,350,533	7,387	13.6	0.1	142,298	146	12,546	840	8.8	0.6
Population under 5 years	603,155	767	4,761	613	0.8	0.1	6,593	40	6,593	41	0.6	0.6
Population 5 to 17 years	1,685,827	941	94,822	2,522	5.6	0.2	21,925	42	21,925	202	3.9	0.9
Population 18 to 34 years	2,216,915	1,791	146,329	3,165	6.6	0.1	43,925	110	43,295	407	4.9	0.9
Population 35 to 64 years	3,915,727	1,742	556,505	5,319	14.2	0.1	52,329	130	52,329	501	8.3	1.0
Population 65 to 74 years	932,178	1,157	248,418	2,902	26.6	0.3	11,697	98	11,697	251	21.6	2.2
Population 75 years and over	598,229	982	299,698	2,471	50.1	0.4	6,459	94	6,459	290	41.5	4.3
SEX												
Male	4,786,233	2,284	647,158	4,946	13.5	0.1	67,773	114	5,749	460	8.5	0.7
Female	5,165,798	1,829	703,375	5,616	13.6	0.1	74,525	97	6,797	550	9.1	0.9
RACE AND HISPANIC OR LATINO ORIGIN												
White (not Hispanic or Latino)	6,316,065	2,254	920,269	6,535	14.6	0.1	98,846	136	98,846	655	9.3	0.7
Black or African American	2,123,353	5,762	314,216	3,706	14.8	0.2	16,250	523	16,250	337	12.0	2.0
American Indian and Alaska Native	118,231	1,604	21,874	929	18.5	0.8	784	174	784	90	**30.4**	12.4
Asian	279,615	2,022	13,450	961	4.8	0.3	11106	394	11,106	116	2.9	1.0
Native Hawaiian and Other Pacific Islander	6,447	668	635	178	9.8	2.7	8	12	8	12	**100.0**	100.0
Some other Race	303,837	7,743	16,218	1,100	5.3	0.4	3701	862	3,701	77	2.8	2.2
Two or more races	255,739	6,070	29,063	1,446	11.4	0.5	4213	599	4,213	117	5.8	2.7
Hispanic or Latino	916,366	863	57,239	1,970	6.2	0.2	11987	43	11,987	196	5.5	1.6

Source: American Community Survey 5-year Estimates (2014-2018)
All **bolded and orange** cells indicate a difference that is greater than 5% when compared to the state.

Local Setting

According to the 2018 American Community Survey 5-Year Estimates, Table S1810 Disability Characteristics from the US Census Bureau, Census Tract 107.03 had an estimated total population of 6,539 noninstitutionalized citizens (Tables 10, 10a, 10b, and 10c). Of those individuals, an estimated 8.9% (MOE +/- 3.9%) had a disability. The largest population of disabled civilians were 65 to 74 years 53.7% (MOE +/- 35.7%). The second largest population of disabled civilians was White (not Hispanic or Latino) at 13.7% (MOE +/- 5.2%).

Census Tract 107.05 had an estimated total population of 5,210 noninstitutionalized citizens. Of those individuals, an estimated 9.1% (MOE +/- 3.3%) had a disability. The largest population of disabled civilians were 75 years and over 72.6%) (MOE +/- 18.2%). The second largest population of disabled civilians was American Indian and Alaska Native at 41.7% (MOE +/- 16.2%).

Census Tract 113 had an estimated total population of 3,024 noninstitutionalized citizens. Of those individuals, an estimated 6.0% (MOE +/- 2.6%) had a disability. The largest population of disabled civilians were 75 years and over 42.7%(MOE +/- 32.4%). The second largest population of disabled civilians was 5 to 17 years old at 19.7% (MOE +/- 21.0%).

Census Tract 114 had an estimated total population of 3,996 noninstitutionalized citizens. Of those individuals, an estimated 4.8% (MOE +/- 1.8%) had a disability. The largest population of disabled civilians were 65 to 74 years 20.0% (MOE +/- 11.2%). The second largest population of disabled civilians was 75 years and over at 11.2% (MOE +/- 10.6%).

Census Tract 116.01 had an estimated total population of 2,315 noninstitutionalized citizens. Of those individuals, an estimated 1.9% (MOE +/- 1.3%) had a disability. The largest population of disabled civilians was Asian 2.9% (MOE +/- 6.3%).

Census Tract 116.02 had an estimated total population of 6,389 noninstitutionalized citizens. Of those individuals, an estimated 3.8% (MOE +/- 1.8%) had a disability. The largest population of disabled civilians were 35 to 64 years 6.8%(MOE +/- 7.5%).

Census Tract 117 had an estimated total population of 5,037 noninstitutionalized citizens. Of those individuals, an estimated 5.1% (MOE +/- 1.8%) had a disability. The largest population of disabled civilians were 75 years and over 80.2% (MOE +/- 16.9%).

Census Tract 122.02 had an estimated total population of 5,446 noninstitutionalized citizens. Of those individuals, an estimated 8.3% (MOE +/- 3.2%) had a disability. The largest population of disabled civilians were American Indian and Alaska Native (100%, MOE +/- 82.2%).

Table 9. Disability - Local Setting

Subject	Census Tract 107.03						Census Tract 107.05					
	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	6,539	580	582	252	8.9	3.9	5,210	444	476	157	9.1	3.3
Population under 5 years	297	179	0	17	0.0	11.1	121	65	0	17	0.0	24.7
Population 5 to 17 years	798	253	34	44	4.3	5.5	643.0	191	12	18	1.9	3.1
Population 18 to 34 years	3,272.0	380	315	209	9.6	6.2	1,795.0	422	39	45	2.2	2.7
Population 35 to 64 years	1,776.0	327	131	89	7.4	5.2	1,914.0	323	206	129	10.8	6.7
Population 65 to 74 years	149.0	87	80	77	53.7	35.7	467.0	205	23	37	4.9	8.1
Population 75 years and over	247.0	134	22	35	8.9	14.2	270.0	137	196	111	72.6	18.2
SEX												
Male	3,149	458	263	161	8.4	5.0	2,367	382	179	69	7.6	3.0
Female	3,390	371	319	156	9.4	4.4	2,843	343	297	149	10.4	5.5
RACE AND HISPANIC OR LATINO ORIGIN												
White (not Hispanic or Latino)	3,415	439	468	200	13.7	5.2	3,662	447	340	120	9.3	3.5
Black or African American	889	354	53	64	6.0	8.5	780	173	101	118	12.9	16.0
American Indian and Alaska Native	0	17	0	17	-	**	60	84	25	35	41.7	16.2
Asian	975	428	0	17	0.0	3.5	185	136	10	15	5.4	8.1
Native Hawaiian and Other Pacific Islander	0	17	0	17	-	**	0	17	0	17	-	**
Some other Race	412	508	2	13	0.5	4.2	191	177	0	17	0.0	16.7
Two or more races	293	159	0	17	0.0	11.2	162	98	0	17	0.0	19.3
Hispanic or Latino	989	574	61	90	6.2	10.9	342	240	0	17	0.0	9.7
Source: American Community Survey 5-year Estimates (2014-2018)												

Table 10a. Disability - Local Setting (cont'd)

Subject	Census Tract 113						Census Tract 114					
	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	3,024	348	181	79	6.0	2.6	3,996	315	191	76	4.8	1.8
Population under 5 years	69	33	69	12	0.0	37.0	108	36	0	12	0.0	27.1
Population 5 to 17 years	173.0	108	173	50	**19.7**	21.0	190.0	52	0	12	0.0	16.8
Population 18 to 34 years	2,195.0	381	2,195	46	2.4	2.2	2,559.0	343	96	65	3.8	2.5
Population 35 to 64 years	456.0	111	456	38	11.2	8.5	736.0	139	31	23	4.2	3.0
Population 65 to 74 years	49.0	32	49	12	16.3	20.8	215.0	68	43	24	20.0	11.2
Population 75 years and over	82.0	49	82	32	42.7	32.4	188.0	53	21	19	11.2	10.6
SEX												
Male	1,631	320	76	59	4.7	3.7	1,466	239	79	39	5.4	2.8
Female	1,393	287	105	55	7.0	4.2	2,530	290	112	66	4.4	2.5
RACE AND HISPANIC OR LATINO ORIGIN												
White (not Hispanic or Latino)	2,021	331	61	38	3.0	1.9	3,214	325	173	72	5.4	2.1
Black or African American	652	230	83	59	12.7	8.0	168	105	2	4	1.2	2.7
American Indian and Alaska Native	0	12	0	12	-	**	0	12	0	12	-	**
Asian	234	121	37	41	**15.8**	12.8	302	132	0	12	0.0	10.9
Native Hawaiian and Other Pacific Islander	0	12	0	12	-	**	0	12	0	12	-	**
Some other Race	26	34	0	12	0.0	60.4	102	71	8	12	7.8	12.1
Two or more races	72	50	0	12	0.0	36.1	125	82	8	11	6.4	9.3
Hispanic or Latino	81	55	0	12	0.0	33.5	158	115	0	12	0.0	19.7

Source: American Community Survey 5-year Estimates (2014-2018)
All **bolded and blue** cells indicate a difference that is greater than 10% when compared to the state and county..

Table 10b. Disability - Local Setting (cont'd)

| Subject | Census Tract 116.01 | | | | | | Census Tract 116.02 | | | | | |
| | 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	2,315	259	44	32	1.9	1.3	6,389	676	242	126	3.8	1.8
Population under 5 years	0	12	0	12	-	**	112	36	0	17	0.0	26.3
Population 5 to 17 years	16.0	24	0	12	0.0	76.9	88.0	46	0	17	0.0	31.6
Population 18 to 34 years	2,299	256	44	32	1.9	1.4	5,968	613	227	125	3.8	2.0
Population 35 to 64 years	0.0	12	0	12	-	**	221.0	103	15	16	6.8	7.5
Population 65 to 74 years	0.0	12	0	12	-	**	0.0	17	0	17	-	**
Population 75 years and over	0.0	12	0	12	-	**	0.0	17	0	17	-	**
SEX												
Male	1,034	175	24	27	2.3	2.6	2,829	552	121	104	4.3	3.1
Female	1,281	192	20	26	1.6	2.0	3,560	425	121	64	3.4	1.8
RACE AND HISPANIC OR LATINO ORIGIN												
White (not Hispanic or Latino)	1,641	237	35	31	2.1	1.9	3,967	445	179	121	4.5	2.9
Black or African American	195	68	3	7	1.5	3.7	616	319	18	24	2.9	4.1
American Indian and Alaska Native	3	6	0	12	0.0	100.0	5	11	0	17	0.0	100.0
Asian	206	85	6	13	2.9	6.3	919	190	23	23	2.5	2.5
Native Hawaiian and Other Pacific Islander	0	12	0	12	-	**	0	17	0	17	-	**
Some other Race	8	14	0	12	0.0	100.0	79	55	0	17	0.0	34.0
Two or more races	98	47	0	12	0.0	29.2	313	142	9	17	2.9	5.7
Hispanic or Latino	202	78	0	12	0.0	15.9	624	212	21	24	3.4	4.1

Source: American Community Survey 5-year Estimates (2014-2018)
All **bolded and orange** cells indicate a difference that is greater than 10% when compared to the state.

Table 10c. Disability - Local Setting (cont'd)

Subject	Census Tract 117						Census Tract 122.02					
	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	5,037	535	257	78	5.1	1.8	5,446	391	454	181	8.3	3.2
Population under 5 years	71	45	0	17	0.0	36.4	352	132	0	17	0.0	9.5
Population 5 to 17 years	193	88	12	18	6.2	9.0	1,207	188	66	67	5.5	5.2
Population 18 to 34 years	3,932	543	89	50	2.3	1.3	1,023	268	29	35	2.8	3.3
Population 35 to 64 years	617.0	120	54	34	8.8	5.3	2,268	222	68	94	3.0	4.1
Population 65 to 74 years	133.0	47	29	24	21.8	17.4	376	98	169	86	**44.9**	19.2
Population 75 years and over	91.0	43	73	42	**80.2**	16.9	220	105	122	89	**55.5**	21.6
SEX												
Male	2,696	519	137	59	5.1	2.7	2,516	229	129	64	5.1	2.6
Female	2,341	293	120	51	5.1	2.2	2,930	350	325	182	11.1	5.9
RACE AND HISPANIC OR LATINO ORIGIN												
White (not Hispanic or Latino)	3,869	463	199	66	5.1	2.0	4,082	361	321	171	7.9	4.0
Black or African American	461	146	41	34	8.9	7.1	260	135	65	68	25.0	22.8
American Indian and Alaska Native	16	35	0	17	0.0	76.9	14	23	14	23	**100.0**	82.2
Asian	311	97	4	7	1.3	2.2	474	142	0	17	0.0	7.1
Native Hawaiian and Other Pacific Islander	0	17	0	17	-	**	0	17	0	17	-	**
Some other Race	47	44	6	10	**12.8**	20.1	24	34	0	17	0.0	62.8
Two or more races	132	62	7	12	5.3	8.3	104	91	0	17	0.0	27.9
Hispanic or Latino	239	125	6	10	5.1	4.4	512	292	54	65	**10.5**	10.1

Source: American Community Survey 5-year Estimates (2014-2018)
All **bolded and green** cells indicate a difference that is greater than 10% when compared to the county; all **bolded and blue** cells indicate a difference that is greater than 10% when compared to the state and county.

5.4 Poverty
Regional Setting

According to the Census Table S1701, Poverty Status in the Past 12 Months, 2018 American Community Survey 5-Year Estimates, from the US Census Bureau, North Carolina had an estimated population of 9,881,292, with 15.4% (MOE +/- 0.2%) below the poverty level (Table 11). Across all subjects, Some Other Race had the highest percent living below the poverty level at 32.0% (MOE +/- 1.4%). The next three subjects with the highest poverty level were Hispanic or Latino at 30.1% (MOE +/- .8%), American Indian and Alaska Native at 26.2% (MOE +/- 1.5%), and Black or African-American at 24.9% (MOE +/- 0.4%). The age group with the highest population living below poverty level was under 18 22.9% (MOE +/- 0.4%), followed by 18 to 64 years 15.3% (MOE +/- 0.2%).

Orange County had an estimated population of 131,789 with 13.4% (MOE +/-1.1%) living below the poverty level. Across all subjects, American Indian and Alaska Native had the highest percent living below the poverty level at 22.4% (MOE +/- 21.4%). The next subjects with the highest poverty level were Black or African American at 20.3% (MOE +/- 4.7%), followed by Two or more races (18.3%, MOE +/- 4.3%). The majority of subject groups had smaller percentages experiencing poverty than for the state as a whole.

Table 11. Poverty- Regional Setting

Subject	North Carolina						Orange 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	9,881,292	1,522	1,523,949	15,319	15.4	0.2	131,789	713	17,633	1,471	13.4	1.1
AGE												
Under 18	2,258,876	1,607	498,013	7,632	22.0	0.3	28,136	180	2,601	294	9.2	2.3
18 to 64	6,092,009	1,103	884,618	9,282	14.5	0.2	6,427	127	14,071	976	16.5	1.1
65 years and over	1,530,407	995	141,318	2,705	9.2	0.2	18,156	72	961	253	5.3	1.4
SEX												
Male	4,779,533	2,237	669,307	8,648	14.0	0.2	63,183	591	7,722	840	12.2	1.3
Female	5,101,759	2,244	854,642	8,676	16.8	0.2	68,606	530	9,911	884	14.4	1.3
RACE AND HISPANIC OR LATINO ORIGIN												
White	6,281,258	2,576	668,925	9,394	10.6	0.2	91,624	503	10,499	820	11.5	0.9
Black or African American	2,096,490	5,812	493,496	8,392	23.5	0.4	15,105	600	3,064	737	20.3	4.7
American Indian and Alaska Native	117,702	1,595	29,577	1,585	25.1	1.3	760	169	170	158	22.4	21.4
Asian	275,301	1,983	32,712	2,356	11.9	0.9	10,195	413	1,391	323	13.6	3.2
Native Hawaiian and Other Pacific Islander	6,414	671	1,246	264	19.4	4.2	8	12	-	29	0.0	100.0
Some other Race	302,934	7,911	89,305	5,371	29.5	1.5	3,634	860	469	203	12.9	6.3
Two or more races	252,709	6,223	54,335	2,369	21.5	0.8	3,684	587	676	207	18.3	5.4
Hispanic or Latino	915,426	901	260,607	5,682	28.5	0.2	11,112	219	2,012	607	18.1	5.5
All individuals below:												
50 percent of poverty level	663,550	10,829					10,530	976				
125 percent of poverty level	2,034,827	19,447					22,283	1,742				
150 percent of poverty level	2,526,688	21,681					26,961	1,739				
185 percent of poverty level	3,227,889	24,339					34,388	1,931				
200 percent of poverty level	3,513,670	25,035					38,094	2,078				

Local Setting

According to the Census Table S1701, Poverty Status in the Past 12 Months, 2018 American Community Survey 5-Year Estimates, from the US Census Bureau, Census Tract 107.03 had an estimated population of 6,539, with 22.6% (MOE +/- 5.4%) below the poverty level (Tables 12,12a. 12b, and 12c). Across all subjects, Black or African American had the highest percent living below the poverty level at 39.1% (MOE +/- 26.0%). The next three subjects with the highest poverty levels were 18 to 64 years at 27.1% (MOE +/- 6.5%), Asian at 26.3% (MOE +/- 20.2%), and female at 26.3% (MOE +/- 6.0%).

Census Tract 107.05 had an estimated population of 5,210, with 16.1% (MOE +/- 5.3%) below the poverty level. Across all subjects, Two or more races had the highest percent living below the poverty level at 40.1% (MOE +/- 33.5%). The next subjects with the highest poverty levels were Hispanic or Latino (of any race) at 34.8% (MOE +/- 41.9%) and Black or African American at 23.5% (MOE +/- 12.8%).

Census Tract 113 had an estimated population of 3,024, with 53.7% (MOE +/- 7.7%) below the poverty level. Across all subjects, White had the highest percent living below the poverty level at 66.2% (MOE +/- 8.0%). The next subjects with the highest poverty levels were 18 to 64 years at 58.4% (MOE +/- 7.3%) and female at 57.4% (MOE +/- 12.2%).

Census Tract 114 had an estimated population of 3,488, with 42.8% (MOE +/- 6.5%) below the poverty level. Across all subjects, Two or more races had the highest percent living below the poverty level at 54.9% (MOE +/- 36.0%). The next subjects with the highest poverty levels were 18 to 64 years at 53.1% (MOE +/- 7.3%), Black or African American at 46.3% (MOE +/- 32.9%), and female at 46.3% (MOE +/- 32.9%).

Census Tract 116.01 had an estimated population of 0, with no data available for poverty rates for 2018.

Census Tract 116.02 had an estimated population of 765, with 31.2% (MOE +/- 8.9%) living below the poverty level. Across all subjects, Black or African American tied with Some other race with the highest percent's living below the poverty level at 100% (MOE +/- 100%, and 68.8%, respectively). The next subjects with the highest poverty levels were female at 38.5% (MOE +/- 11.2%), followed by Asian at 35.9% (MOE +/- 12.4%).

Census Tract 117 had an estimated population of 3,289, with 47.1% (MOE +/- 10.1%) living below the poverty level. Across all subjects, Hispanic or Latino had the highest percent living below the poverty level at 57.4% (MOE +/- 32.5%).

Census Tract 122.02 had an estimated population of 5,446, with 11.4% (MOE +/- 5.0%) living below the poverty level. Across all subjects, American Indian and Alaska Native had the highest percent living below the poverty level at 100% (MOE +/- 82.2%), followed by Black or African American at 66.2% (MOE +/- 27.7%).

Table 12. Poverty - Local Setting

Subject	Census Tract 107.03						Census Tract 107.05					
	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	6,539	580	1,481	369	**22.6**	5.4	5,210	444	840	300	16.1	5.3
AGE												
Under 18 years	1,095	264	53	45	4.8	4.3	764	197	100	143	13.1	17.7
18 to 64 years	5,048	459	1,369	365	**27.1**	6.5	3,709	458	719	234	19.4	5.4
65 years and over	396	149	59	56	14.9	13.4	737	226	21	31	2.8	4.1
SEX												
Male	3,149	458	590	265	18.7	8.2	2,367	382	359	185	15.2	6.2
Female	3,390	371	891	233	26.3	6.0	2,843	343	481	211	16.9	7.1
RACE/ETHNICITY												
White	3,415	439	686	182	20.1	4.9	3,662	447	433	169	11.8	4.2
Black or African American	889	354	348	245	**39.1**	26.0	780	173	183	124	23.5	12.8
American Indian and Alaska Native	0	17	0	17	-	**	60	84	0	17	0.0	39.7
Asian	975	428	256	161	**26.3**	20.2	185	136	40	46	21.6	25.5
Native Hawaiian and Other Pacific Islander	-	17	-	17	-	**	-	17	-	17	-	**
Some other race	412	508	19	33	4.6	13.3	191	177	-	17	0.0	16.7
Two or more races	293	159	-	17	0.0	11.2	162	98	65	74	**40.1**	33.5
Hispanic or Latino origin (of any race)	989	574	213	174	21.5	23.6	342	240	119	174	**34.8**	41.9
All individuals below:												
50 percent of poverty level	667						350	147				
125 percent of poverty level	2,259						1,173	340				
150 percent of poverty level	2,400						1,252	350				
185 percent of poverty level	3,406						1,567	394				
200 percent of poverty level	3,848						1,610	393				

Source: American Community Survey 5-year Estimates (2014-2018)
All **bolded and orange** cells indicate a difference that is greater than 5% when compared to the state; all **bolded and blue** cells indicate a difference that is greater than 5% when compared to the state and county.

Table 12a. Poverty - Local Setting (cont'd)

Subject	Census Tract 113						Census Tract 114					
	Total		Below poverty level		Percent below poverty level		Total		Below poverty level		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	3,024	348	1,625	342	**53.7**	7.7	3,488	298	1,492	291	**42.8**	6.5
AGE												
Under 18 years	242	109	69	69	**28.5**	28.9	291	47	-	12	0.0	11.3
18 to 64 years	2,651	355	1,549	321	**58.4**	7.3	2,794	298	1,484	292	**53.1**	7.3
65 years and over	131	47	7	11	5.3	8.8	403	61	8	12	2.0	3.1
SEX												
Male	1,631	320	825	256	**50.6**	9.9	1,385	239	458	213	**43.3**	7.6
Female	1,393	287	800	286	**57.4**	12.2	2,103	272	1,034	253	**46.3**	32.9
RACE/ETHNICITY												
White	2,021	331	1,338	303	**66.2**	8.0	2,800	317	1,235	287	**44.1**	7.9
Black or African American	652	230	144	113	22.1	16.1	162	101	75	65	**46.3**	32.9
American Indian/Alaska Native	0	12	0	12	-	**	0	12	0	12	-	**
Asian	234	121	87	52	**37.2**	22.7	249	126	110	96	**44.2**	27.1
Native Hawaiian/Pacific Islander	-	12	-	12	-	**	0	12	0	12	-	**
Some other race	26	34	11	24	**42.3**	57.7	102	71	8	16	7.8	15.8
Two or more races	72	50	34	33	**47.2**	39.4	102	77	56	63	**54.9**	36.0
Hispanic or Latino origin (of any race)	81	55	44	41	**54.3**	32.7	134	109	18	22	11.9	18.8
All individuals below:												
50 percent of poverty level	1,235	275					988	237				
125 percent of poverty level	1,902	327					1,683	313				
150 percent of poverty level	2,006	333					1,700	312				
185 percent of poverty level	2,156	318					1,756	324				

Source: American Community Survey 5-year Estimates (2014-2018)
All **bolded and orange** cells indicate a difference that is greater than 5% when compared to the state; all **bolded and blue** cells indicate a difference that is greater than 5% when compared to the state and county.

Table 102b. Poverty- Local Setting (cont'd)

Subject	Census Tract 116.01						Census Tract 116.02					
	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	0	12	0	12	-	**	765	111	239	70	**31.2**	8.9
AGE												
Under 18	0	12	0	12	-	**	172	54	35	54	**20.3**	15.8
18 to 64	0	12	0	12	-	**	593	84	204	17	**34.4**	8.6
65 years and over	0	12	0	12	-	**	-	17	-	17	-	**
SEX												
Male	0	12	0	12	-	**	417	77	105	37	**25.2**	8.2
Female	0	12	0	12	-	**	348	56	134	43	**38.5**	11.2
RACE AND HISPANIC OR LATINO ORIGIN												
White	0	12	0	12	-	**	221	58	71	33	**32.1**	15.0
Black or African American	0	12	0	12	-	**	7	10	7	10	**100.0**	100.0
American Indian and Alaska Native	0	12	0	12	-	**	0	17	0	17	-	**
Asian	0	12	0	12	-	**	382	102	137	61	**35.9**	12.4
Native Hawaiian and Other Pacific Islander	0	12	0	12	-	**	-	17	-	17	-	**
Some other Race	0	12	0	12	-	**	20	34	20	34	**100.0**	68.8
Two or more races	0	12	0	12	-	**	12	12	-	17	0.0	88.8
Hispanic or Latino	0	12	0	12	-	**	134	80	15	19	11.2	14.7
All individuals below:												
50 percent of poverty level	(X)	(X)					191	74				
125 percent of poverty level	(X)	(X)					239	70				
150 percent of poverty level	(X)	(X)					279	76				
185 percent of poverty level	(X)	(X)					389	88				
200 percent of poverty level	(X)	(X)					489	104				

Source: American Community Survey 5-year Estimates (2014-2018)
All **bolded and orange** cells indicate a difference that is greater than 5% when compared to the state; all **bolded and blue** cells indicate a difference that is greater than 5% when compared to the state and county.

Table 112c. Poverty- Local Setting (cont'd)

Subject	Census Tract 117						Census Tract 122.02					
	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	3,289	462	1,550	507	**47.1**	10.1	5,446	391	623	296	11.4	5.0
AGE												
Under 18	243	79	-	17	0.0	13.4	1,559	218	14	21	0.9	1.4
18 to 64	2,822	459	1,550	507	**54.9**	10.4	3,291	300	466	266	14.2	7.3
65 years and over	224	37	-	17	0.0	14.4	596	111	143	102	24.0	15.7
SEX												
Male	1,793	494	1,011	535	**56.4**	15.6	2,516	229	76	53	3.0	2.1
Female	1,496	259	539	200	**36.0**	9.4	2,930	350	547	303	18.7	8.8
RACE AND HISPANIC OR LATINO ORIGIN												
White	2,630	381	1272	398	**48.4**	10.1	4,082	361	402	232	9.8	5.5
Black or African American	226	125	67	83	**29.6**	32.1	260	135	172	119	**66.2**	27.7
American Indian and Alaska Native	0	17	0	17	-	**	14	23	14	23	**100.0**	82.2
Asian	199	68	100	52	**50.3**	22.0	474	142	26	39	5.5	8.2
Native Hawaiian and Other Pacific Islander	-	17	-	17	-	**	-	17	-	17	-	**
Some other Race	47	44	23	23	**48.9**	32.0	24	34	5	8	20.8	41.5
Two or more races	47	31	11	14	23.4	27.2	104	91	-	17	0.0	27.9
Hispanic or Latino	162	110	93	74	**57.4**	32.5	512	292	9	16	1.8	3.4
All individuals below:												
50 percent of poverty level	1,308	420					345	201				
125 percent of poverty level	1,602	509					750	295				
150 percent of poverty level	1,634	509					1,027	332				
185 percent of poverty level	1,850	493					1,363	416				
200 percent of poverty level	1,866	492					1,363	416				
Source: American Community Survey 5-year Estimates (2014-2018) All **bolded and orange** cells indicate a difference that is greater than 5% when compared to the state; all **bolded and blue** cells indicate a difference that is greater than 5% when compared to the state and county.												

5.5 Household Income

Regional Setting

The following table (Table 13) was compiled using data from the Census Table S1901, Income in the Past 12 Months (in 2018 Inflation-Adjusted Dollars) 2018 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 18.1% (MOE +/- 0.1). The state median household income was $52,413 and the mean income was $73,753.

The household income range for Orange County with the highest percent was $50,000 to $74,999 at 15.4% (MOE +/- 0.9%). The median income was $68,211 and the mean income was $107,834. All income ranges above than $150,000 had percentages that were more than 10% greater than the state ranges.

Table 123. Household Income-Regional Setting

Subject	North Carolina		Orange County	
	Households		**Households**	
	Estimate	**Margin of Error +/-**	**Estimate**	**Margin of Error +/-**
Total	3,918,597	8,585	52,529	609
Less than $10,000	6.8	0.1	6.1	0.7
$10,000 to $14,999	5.4	0.1	3.7	0.6
$15,000 to $24,999	10.7	0.1	8.1	0.9
$25,000 to $34,999	10.7	0.1	7.9	0.9
$35,000 to $49,999	14.2	0.1	12.6	0.9
$50,000 to $74,999	18.1	0.1	15.4	0.9
$75,000 to $99,999	12	0.1	11.8	0.9
$100,000 to $149,999	12.5	0.1	13.2	0.9
$150,000 to $199,999	4.7	0.1	**7.6**	0.8
$200,000 or more	4.9	0.1	**13.8**	1
Median income (dollars)	52,413	224	68,211	3,011
Mean income (dollars)	73,753	332	107,834	4,818
Per Capita Income	29,456	143	40,650	1803
Source: US Census, 2018 ACS 5-Year Estimates. All **orange and bolded** highlighted cells indicate a difference that is greater than 10% when compared to the state				

Local Setting

The following table (Table 14) was compiled using data from the Census Table S1901, Income in the Past 12 Months (in 2018 Inflation-Adjusted Dollars) 2018 American Community Survey 5-Year Estimates. Almost all census tracts show greater than 10% differences for either the lowest income brackets or the highest income ranges.

Table 134. Household Income – Local Setting

Subject	Census Tract 107.03 Households		Census Tract 107.05 Households		Census Tract 113 Households		Census Tract 114 Households	
	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-
Total	2,934	218	2,281	173	1,081	109	1,398	120
Less than $10,000	**13.1%**	5.3	6.2%	3.6	**15.4%**	5.7	**15.8%**	5.4
$10,000 to $14,999	7.6%	4.1	3.4%	3.8	**15.4%**	5.9	4.7%	3.6
$15,000 to $24,999	**17.0%**	6.5	8.4%	4.9	**16.8%**	6	**18.2%**	7
$25,000 to $34,999	10.6%	5.5	12.9%	6.6	8.3%	5.2	8.9%	5.3
$35,000 to $49,999	13.9%	5.5	9.2%	4.8	25.6%	7.8	9.7%	5.2
$50,000 to $74,999	22.4%	6.9	13.9%	5.9	8.2%	4.8	5.9%	2.9
$75,000 to $99,999	10.4%	4.8	17.6%	6.2	5.7%	3.2	4.9%	3
$100,000 to $149,999	3.3%	2.3	14.4%	4.7	3.7%	3.3	8.9%	3.7
$150,000 to $199,999	1.8%	1.9	**8.7%**	3.8	0.0%	3.2	6.2%	2.9
$200,000 or more	0.0%	1.2	5.3%	3.1	0.7%	1.2	**16.7%**	4.7
Median income (dollars)	36,059	8,012	65,764	16,257	30,169	11,622	36,964	7,112
Mean income (dollars)	43,179	4,328	84,054	10,299	39,141	8,329	99,192	15,402
Per Capita Income	21,331	2,640	38,044	4,439	15,875	3,547	36,138	5,753

Source: US Census, 2018 ACS 5-Year Estimates.
All **orange and bolded** highlighted cells indicate a difference that is greater than 10% when compared to the state; all **bolded and blue** cells indicate a difference that is greater than 10% when compared to the state and county.

Subject	Census Tract 116.01 Households		Census Tract 116.02 Households		Census Tract 117 Households		Census 122.02 Households	
	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-
Total	0	12	314	44	1,155	115	2,084	120
Less than $10,000	-	**	**23.6%**	10.4	**17.1%**	6.7	**9.5%**	4.5
$10,000 to $14,999	-	**	9.9%	5.8	3.9%	2.9	5.4%	3.6
$15,000 to $24,999	-	**	8.3%	6.1	7.3%	3.7	3.9%	3.3
$25,000 to $34,999	-	**	13.7%	6.6	10.2%	5.5	4.4%	2.8
$35,000 to $49,999	-	**	10.5%	7.6	15.9%	6.4	9.7%	4.9
$50,000 to $74,999	-	**	19.4%	8.4	9.4%	3.9	12.9%	4.2
$75,000 to $99,999	-	**	8.3%	5.6	3.9%	2.7	7.1%	3.5
$100,000 to $149,999	-	**	2.5%	3.2	9.2%	4.2	9.5%	3.8
$150,000 to $199,999	-	**	2.2%	2.5	6.5%	3.9	8.6%	3.8
$200,000 or more	-	**	1.6%	2.3	**16.6%**	5.8	**29.0%**	5.9
Median income (dollars)	(x)	(x)	30,865	4,330	45,496	4,246	95,079	26,364
Mean income (dollars)	(x)	(x)	40,782	8,208	128,429	58,783	153,145	30,965
Per Capita Income	3,042	573	5,055	642	31,181	151,136	59,466	12,203

Source: US Census, 2018 ACS 5-Year Estimates.
All **orange and bolded** highlighted cells indicate a difference that is greater than 10% when compared to the state; all **bolded and blue** cells indicate a difference that is greater than 10% when compared to the state and county.

5   Limited English Proficiency (LEP)

Per the Safe Harbor Guidelines, should an LEP Group be identified during the permit application 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 will not translate vital written materials, but instead will 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 provisions apply to the translation of written documents only. Safe harbor guidelines are per the EPA guidance for LEP persons, and implemented by DEQ when deemed appropriate.

The population of Spanish-speakers that speak English "less than very well" is greater than 5% in Census Tract 107.03.

Several language groups were identified within the one-mile radius of the facility but did not reach the 5% threshold, including: French (Incl. Patois and Cajun), Greek, Russian, Gujarati, Hindi, other Indic languages, Other Indo European languages, Chinese, Japanese, Korean, Vietnamese, other Asian languages, Tagalog, Arabic, Other Pacific Island languages, Thai, and African Languages.

Table 14. Limited English Proficiency

LANGUAGE SPOKEN AT HOME	Census Tract 107.03		Census Tract 107.05		Census Tract 113		Census Tract 114	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Total (population 5 years and over):	6,129	564	4,383	365	3,074	373	4,072	450
Speak only English	4,162	491	3,672	459	2,786	344	3,663	442
Spanish or Spanish Creole:	1,276	500	495	303	39	36	142	68
Speak English "very well"	310	151	280	204	27	29	131	67
Speak English less than "very well"	966	506	215	157	12	16	11	13

Table 15a. Limited English Proficiency (cont'd)

LANGUAGE SPOKEN AT HOME	Census Tract 116.01		Census Tract 116.02		Census Tract 117		Census Tract 122.02	
	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error	Estimate	Margin of Error
Total (population 5 years and over):	2,423	454	5,693	505	4,793	483	5,023	454
Speak only English	1,967	389	4,469	413	4,183	499	3,777	318
Spanish or Spanish Creole:	162	67	298	133	207	99	373	232
Speak English "very well"	162	67	268	135	207	99	148	123
Speak English less than "very well"	0	12	30	48	0	12	225	140

6 County 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 in 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 2020 report, out of all 100 counties in North Carolina (with 1 indicating the healthiest), Orange County ranks 1st in health factors and 2nd in health outcomes.
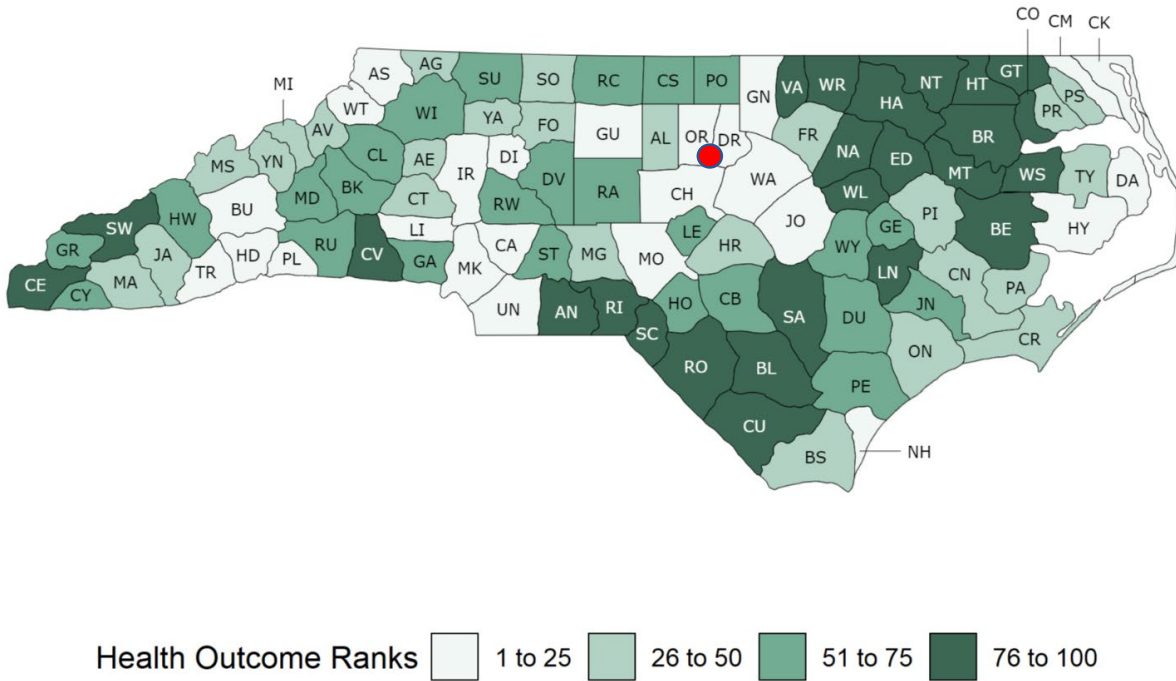
Figure 3. County Health Rankings for Health Factors in North Carolina provided by University of Wisconsin Public Health Institute.

According to the NC DEQ Community Mapping System Environmental Justice Tool, the health outcome causes of death in Orange County are lower than the corresponding state averages. Additionally, the hospitalizations due to asthma in Orange County is 67 (per 100,000 individuals), as compared to the state at 90 (per 100,000 individuals). The number of primary care physicians in Orange County (26.1 per 10,000 residents) is demonstrably higher than the state average (4.8 per 10,000 residents).

Table 16. Health Outcomes

| Cause of Death	Orange County	North Carolina
Cancer	152	169.1
Heart Disease	117.1	163.7
Stroke	32.5	43.1
Cardiovascular Disease	160.2	221.9
Diabetes	14.8	22.8
Source: NCDEQ 2020 EJ Tool. Death rates are per 100,000 individuals		

7 Local Sensitive Receptors

The Environmental Protection Agency 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 one-mile project radius from the UNC-CH facility, the following potential sensitive receptors were identified through EJSCREEN and Google Maps (Figure 4).

- UNC Hospitals
- Frank Porter Graham Elementary School
- Carborro Elementary School
- Phoenix Academy High
- Northside Elementary
- Multiple Town of Chapel Hill Subsidized and Public Housing units

Additional sensitive receptors may be identified during the permit application process, such as during the field reconnaissance visit, if one is conducted, or through public comment.
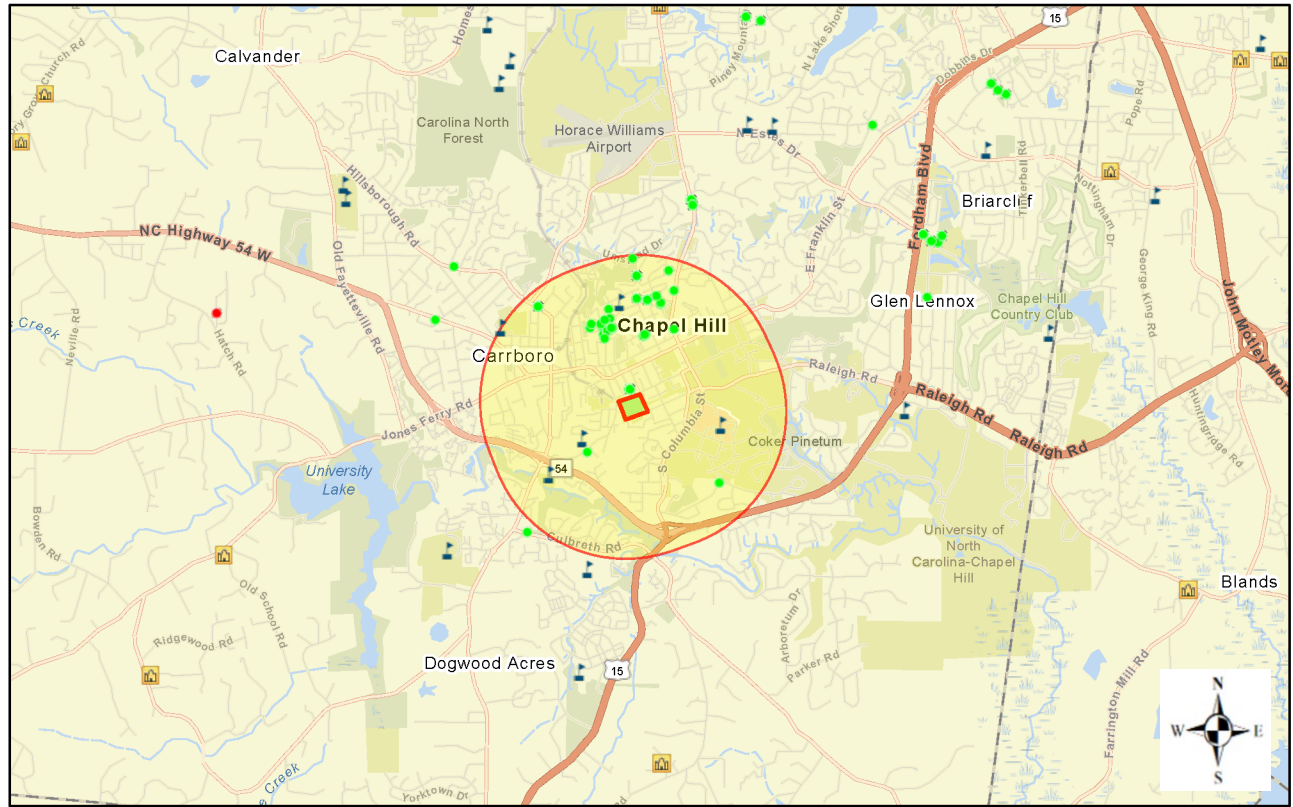
Figure 4. Sensitive receptors surrounding the UNC- CH facility.

8 Local Industrial Sites

Within the one-mile buffer, there are 203 facility permits or incident reports (as of November 16, 2020):

- 2 Air Quality Permit Sites (one of which belongs to UNC)
- 3 NPDES Stormwater Permits
- 7 Contaminated Dry-Cleaning Sites
- 4 Inactive Hazardous Sites
- 6 Brownfields Program Sites
- 9 Hazardous Waste Sites
- 132 Underground Storage Tank Incidents
- 6 Above Ground Storage Tanks Incidents
- 10 Underground Storage Tank Active Facilities
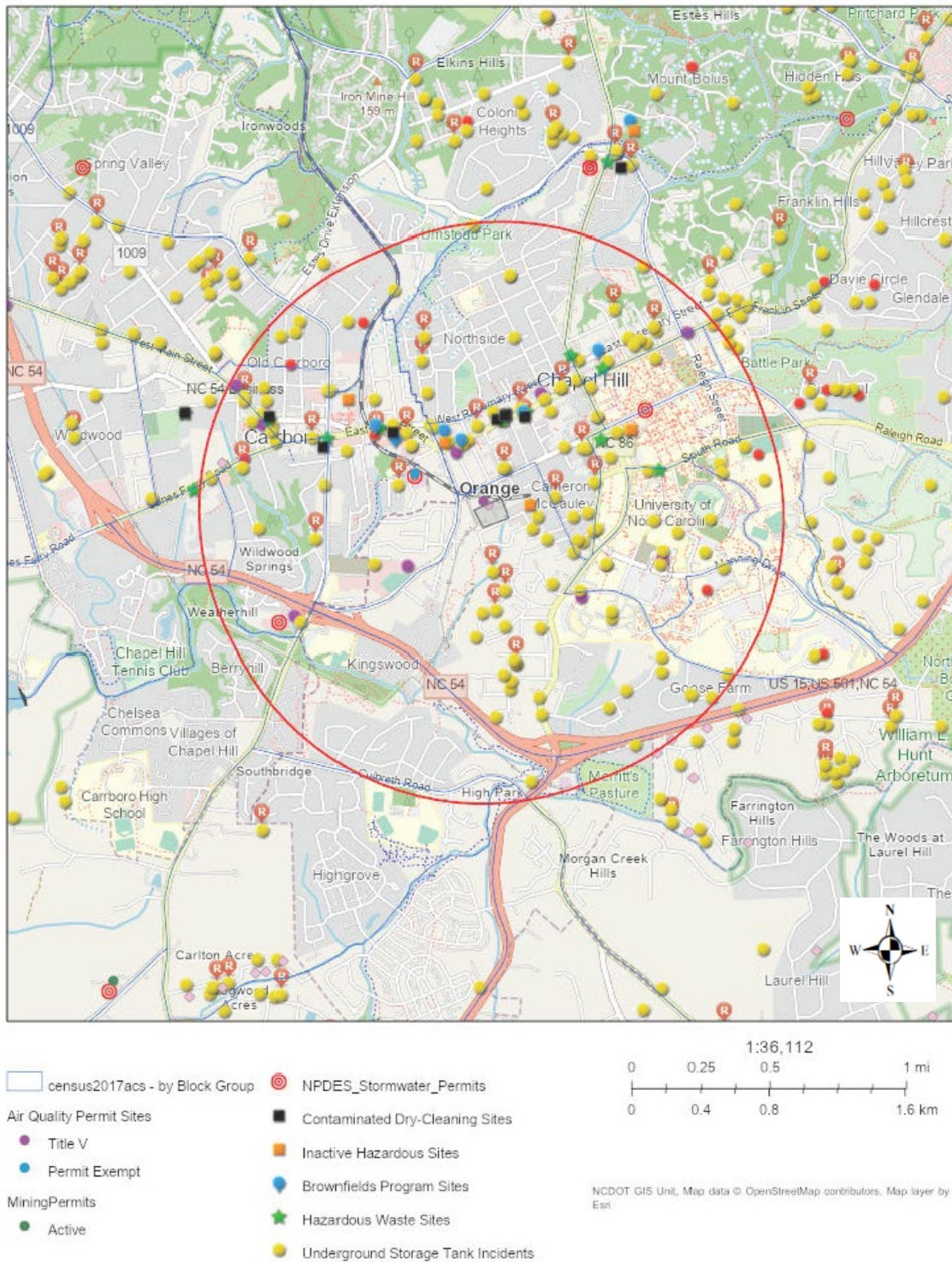- 24 Land Use Restriction and/or Notices

Figure 5. Permitted facilities and incidents with the one-mile radius surrounding the UNC facility.

9. Conclusion

The Draft EJ Report is an initial evaluation of the demographics and socioeconomics of the community area surrounding a proposed facility or permit modification. This includes information within a determined radius by the Department (one mile for this project) on race and ethnicity (decennial census year), poverty, per capita income, and ability to speak English (most current ACS census range), current NC Commerce county tier, and presence or absence of American Indian Tribal areas. The Draft EJ Report does not include a reconnaissance of the community. The UNC facility is located in an area with generally better health factors and outcomes in comparison to other counties in the state.

The study area displays a generally younger population as compared to the state, and in most cases, the county as well. The study area also exhibits higher percentages of Asian and in some census tracts, Hispanic or Latino (of any race). One potential LEP language group (Spanish) was identified that reaches the 5% threshold for Safe Harbor Guidelines. Extra attention will also be given to ensure language data is accurate and translation or interpretation services will be considered for essential documents and any public hearings or meetings. Given the presence of the university campus younger and more diverse racial and ethnic populations generally move into and out of this area to attend college. These student populations also appear to have, in general, lower household income levels.

Based on the results from this Draft EJ Report, DEQ will conduct the following outreach:

1) Inform the Occaneechi Band of the Saponi Nation of the permit renewal application and continue to update the Occaneechi Band throughout the permitting process.
2) Conduct outreach to students and student organizations at UNC-Chapel Hill.
3) Announce reminders through social media.