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September 13, 2016

Jeffrey Hinton, Director
US Commission on Civil Rights
Suite 16T126
61 Forsyth Street, SW
Atlanta, Georgia 30303

Dear Mr. Hinton,

The N.C. Department of Environmental Quality (DEQ) is committed to ensuring that communities subject to Title VI of the Civil Rights Act of 1964 are not negatively impacted by newly proposed and expanded coal ash landfills. A study has been conducted by DEQ in recent months to evaluate the communities surrounding the landfill sites.

Dan River Steam Station is in an approximately 380-acre property in Rockingham County, in Eden, N.C. and is situated north of the Dan River. The Dan River Steam Station is the second of the proposed landfill sites to be studied by department staff. Attached to this letter you will find the study.

The study included an assessment of the race and ethnicity, income, sex, disability, age and English proficiency of residents near the Dan River Steam Station. DEQ has determined that the proposed landfill at the Dan River Steam Station does not impose disproportionately high or adverse environmental harm to residents in these target populations. We are asking for you to review this study and acknowledge to the DEQ any recommendations or comments on this study within 30 days. Also, please provide any feedback to us on the process which we have undertaken and any suggested changes, as we will be working through numerous environmental justice studies at Duke Energy disposal sites. Two copies of the report are enclosed; please forward one copy to the appropriate Regional Advisory Committee.

Thank you for taking the time for this review. We look forward to hearing from you.

Sincerely,

Michael Scott, Division of Waste Management Director

ec: Matthey Lazo-Chadderton, US Commission on Civil Rights
North Carolina Advisory Committee

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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. This report summarizes a study of the demographic and environmental conditions within Rockingham County in North Carolina, Census Tracts 402 and 403, and a one-mile radius around the Dan River Steam Station property. Duke Energy is proposing to construct and operate a landfill for the disposal of coal combustion residuals (CCR) on the Dan River Steam Station property located at 900 South Edgewood Road, Eden, N.C. 27288. The study was completed to identify disproportionately high or adverse environmental and human health effects on low income or minority populations. This report also details the actions taken by the North Carolina Department of Environmental Quality in response to the results of the study.

2 Environmental Justice Evaluation

Officials with the North Carolina Department of Environmental Quality (department or NCDEQ) administration stated in a press release they would exceed federal and state requirements to protect minority communities from negative impacts when evaluating Duke Energy's applications to store coal ash in landfills. Since then, the department has assessed the potential impact on communities surrounding the proposed on-site coal ash landfill at the Dan River Steam Station in Eden, N.C. This assessment has included:

- A review of the facility's coal ash management plan, proposed landfill operations plan and potential exposure pathways to determine impact boundaries.
- Establishment of a one-mile impact radius, which was based on coal ash transportation plans.
- A study of area demographics, completed using the Environmental Protection Agency's Environmental Justice tool (EJScreen) <https://ejscreen.epa.gov/mapper/> and current available census data at: <http://factfinder.census.gov/faces/nav/jsf/pages/index.xhtml>.
- A comparison of area demographics to project county census data.
- Completion of a site visit to ensure current available census data was accurate.

Once the assessment was completed, NCDEQ communicated with public officials and the public in neighboring communities to describe the environmental justice evaluation. The communication effort included:

- Distribution of a news release regarding an information session to public areas such as local churches, libraries, county offices and fire departments.
- Hosting of an information session in Eden, N.C. to inform concerned citizens in the community of concern about the potential effects of a proposed on-site coal ash landfill on the community.
- Planned distribution of informational postcards to the community surrounding the proposed landfill to enhance our communication efforts with the community and establish a dialogue with residents who were unable to attend the information session.

3 Project Proposal

Duke Energy intends to construct and operate a landfill on the Dan River Steam Station property to dispose of coal combustion residuals currently located in four on-site units. The units consist of the Primary Ash Basin, Secondary Ash Basin, and two unlined ash structural fills (Ash Fills 1 and 2). Electricity production from coal combustion at the Dan River Steam Station ceased on April 1, 2012 and the coal-fired plant is being decommissioned. A combined cycle plant on station property produces electricity from natural gas; therefore, no new coal combustion residuals are generated at the Dan River Steam Station. The proposed landfill would enable the transfer of ash from existing on-site ash basins to a lined facility by Aug. 1, 2019, as required by the North Carolina Coal Ash Management Act of 2014 (CAMA). Duke Energy has transported some of the on-site ash by rail for disposal at the Maplewood Landfill in Jetersville, Va. (AMEC, 2015). Duke will also move coal ash by truck to Roanoke Cement in Troutville, Va. for beneficial reuse (Duke, 2016).

The proposed landfill location is largely within the footprint of existing Ash Fill 1 on the northeastern portion of the property. The coal combustion residuals within Ash Fill 1 will be removed prior to construction of the proposed landfill. The proposed landfill will be bound by existing overhead electrical lines to the west and north, rail lines to the east, and a natural gas pipeline to the south. The portion of the proposed landfill not located within the Ash Fill 1 footprint is currently vegetated with grass in the vicinity of Ash Fill 1 and wooded in areas north of Ash Fill 1. The majority of the site drains to an area between Ash Fills 1 and 2 that discharges into the Secondary Ash Basin and ultimately the Dan River. A portion of the northern and eastern areas of the proposed landfill drains to a stream east of the station property, which discharges into the Dan River.

The proposed 23.3-acre landfill will be constructed in three cells. The northwestern portion of the coal combustion residuals within Ash Fill 1 will be strategically removed and transported by rail to facilitate construction of Cell 1. Cell 1 construction (5.2 acres) will occur at the same time as the removal of the northeastern portion of the coal combustion residuals, facilitating construction of Cell 2. Cell 2 construction (7.4 acres) will occur at the same time as the removal of the remainder of ash in Ash Fill 1, facilitating construction of Cell 3 (10.8 acres). Applications for a permit to operate will be submitted upon completion of each cell of the landfill. The landfill will be developed to dispose of coal combustion residuals from existing on-site coal combustion residuals units. Duke Energy has transported some of the on-site ash by rail to the Maplewood Landfill in Jetersville, Va. and by truck to Roanoke Cement for reuse in Troutville, Va. The environmental closure requirements for soil in contact with ash units is uncertain. Therefore, the landfill will be designed with contingency airspace of 652,097 cubic yards.

4 Geographic Area

Dan River Steam Station is in Eden, N.C. and is situated along the Dan River to the south.

5 Regional Setting

Data on race and ethnicity, age and sex, disability, poverty, household income, and limited English proficiency (LEP) populations contained in the following sections are based on the U.S. Census Bureau's data at a county level. Demographics of Rockingham County were compared to the demographics of the one-mile radius to identify any disparities.

5.1 Race and Ethnicity

According to the 2010 U.S. Census Data QT-P3, Race and Hispanic Origin: 2010; 2010 Census Summary File 1 report, the largest populations within Rockingham County's total population of 93,643 were White, Black or African American and Mexican with 75.7 percent, 18.9 percent, and 4.5 percent from each of the classifications, respectively. The classifications of Some other Race and Two or More Races were also found above 1 percent in Rockingham County in 2010.

Table 1. U.S. Census Bureau, Race and Ethnicity - Rockingham County

Race and Ethnicity	Rockingham County	
	Number	Percent
Total Population	93,643	100
White	70,875	75.7
Black or African American	17,655	18.9
American Indian or Alaska Native	345	0.4
Asian	430	0.5
Native Hawaiian and Other Pacific Islander	60	0.1
Some other Race	2,608	2.8
Two or More Races	1,670	1.8
HISPANIC OR LATINO (of any race)	5,159	5.5
Mexican	4,216	4.5
Puerto Rican	200	0.2
Cuban	51	0.1
Other Hispanic or Latino	692	0.7

5.2 Age and Sex

According to the U.S. Census Bureau, QT-P1, Age Groups and Sex: 2010 Census Summary File 1, Rockingham County has an estimated male and female total population of 93,643. The highest percentage of the Rockingham County population is between the ages of 18 and 64, with a median age of 40.9 for males and 42.5 for females.

Table 2. U.S. Census Bureau, Age and Sex – Rockingham County

Rockingham County						
Age	Number			Percent		
	Both sexes	Male	Female	Both sexes	Male	Female
Total Population	93,643	45,166	48,477	100	100	100
Under 5 years	5,205	2,638	2,567	5.6	5.8	5.3
Under 18 years	20,789	10,679	10,110	22.2	23.6	20.9
18 to 64 years	57,683	28,221	29,462	61.6	62.5	60.8
65 years and over	15,171	6,266	8,905	16.2	13.9	18.4
Median Age	42.2	40.9	42.5	X	X	X

5.3 Disability

According to the 2014 American Community Survey “Disability Characteristics 1-year Estimate”, S1810 from the US Census Bureau, Rockingham County has an estimated total of 90,648 population of non-institutionalized civilians. Of those civilians, an estimated 15.7 percent have a disability. The highest population of disabled civilians are of the population 65 years and older, with an estimated percentage of 32.2 percent. Fewer males than females were estimated to be disabled in Rockingham County by 3.9 percent, with a margin of error of +/-2.5 percent for males and 2.3 percent for females.

Table 3. U.S. Census Bureau, Disability- Rockingham County

Subject	Rockingham County					
	Total		With a Disability		Percent with a Disability	
	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-
Total civilian noninstitutionalized population	90,648	452	14,263	1,602	15.7	1.8
Population under 5 years	4,618	537	61	104	1.3	2.3
Population 5 to 17 years	14,688	552	572	407	3.9	2.8
Population 18 to 64 years	55,236	330	8,445	1,605	15.3	2.9
Population 65 years and over	16,106	377	5,185	836	32.2	5.1
SEX						
Male	43,846	570	6,096	1,077	13.9	2.5
Female	46,802	615	8,167	1,070	17.5	2.3
RACE AND HISPANIC OR LATINO ORIGIN						
White	68,902	1,091	10,708	1,287	15.5	1.8
Black or African American	17,069	1,040	3,160	842	18.5	4.7
American Indian and Alaska Native						
Asian						
Native American and Other Pacific Islander						
Some other Race						
Two or more races						
Hispanic or Latino						

5.4 Poverty

The following table was compiled using data from Census Table S1701, "Poverty Status in the Past 12 Months in 2014 for Rockingham County, North Carolina." Estimates from 2014 show there was a population of 90,357 in Rockingham County, N.C. with 19.6 percent living below poverty. An estimated 35.2 percent of Hispanic or Latin civilians living in Rockingham County live below the poverty level; similarly, an estimated 35.2 percent of Black or African American civilians living in Rockingham County live below the poverty level. These groups represent the highest percentage of civilians living below the poverty level. The data shows that 13.2 percent of White civilians live below the poverty level.

Table 4. U.S. Census Bureau, Poverty Status in the Past 12 Months in 2014 – Rockingham County

Subject	Rockingham County					
	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	90,357	587	17,674	3,005	19.6	3.3
AGE						
Under 18	18,973	358	5,985	1,929	31.5	10.1
18 to 64	55,278	332	10,665	1,808	19.3	3.3
65 years and over	16,106	377	1,024	345	6.4	2.1
SEX						
Male	43,706	641	7,605	1,488	17.4	3.4
Female	46,651	641	10,069	2,246	21.6	4.8
RACE AND HISPANIC OR LATINO ORIGIN						
White	68,569	1,161	9,035	2,110	13.2	3.1
Black or African American	17,111	1,042	6,016	1,755	35.2	9.6
American Indian and Alaska Native						
Asian						
Native Hawaiian and Other Pacific Islander						
Some other Race						
Two or more races						
Hispanic or Latino	5,424	4	1,909	1,186	35.2	21.9
RACE AND HISPANIC OR LATINO ORIGIN						
All individuals below:						
50 percent of poverty level	6,911	2,431				
125 percent of poverty level	21,964	3,188				
150 percent of poverty level	27,654	3,354				
185 percent of poverty level	35,890	3,670				
200 percent of poverty level	38,383	3,797				

5.5 Household Income

The following table was completed using data from the Census Table S1901, "Income in the Past 12 Months (in 2014 Inflation-Adjusted Dollars) 2014 American Community Survey 1-Year Estimates for Rockingham County." The household income bracket with the highest estimated percentage (16.7 percent) is \$35,000 to \$49,999. The median income is \$38,878 and the mean income is \$50,072 for Rockingham County.

Table 5. U.S. Census Bureau, Household Income in the Past 12 Months (2014) – Rockingham County

Subject	Rockingham County	
	Households	
	Estimate	Margin of Error +/-
Total	36,879	1,529
Less than \$10,000	8.8	2.3
\$10,000 to \$14,999	7.4	1.8
\$15,000 to \$24,999	15.5	2.5
\$25,000 to \$34,999	13.3	3.1
\$35,000 to \$49,999	16.7	3.1
\$50,000 to \$74,999	15.7	3.3
\$75,000 to \$99,999	10.3	2.2
\$100,000 to \$149,999	9.9	2.4
\$150,000 to \$199,999	1.7	0.9
\$200,000 or more	0.8	0.5
Median income (dollars)	\$38,878	\$3,550
Mean income (dollars)	\$50,072	\$3,030

5.6 Limited English Proficiency (LEP)

According to the 2014 Census Table B16001, "2010-2014 American Community Survey 5-year Estimates, for Rockingham County," the most common language spoken by people ages 5 and older speaking a language at home other than English was Spanish or Spanish Creole. English was spoken by an estimated 94.1 percent of people in the county. An estimated population of 4,308 people spoke Spanish or Spanish Creole at home, which is approximately 4.9 percent of the total population of Rockingham County. Of the estimated 4,308 people who speak Spanish or Spanish Creole, an estimated 2,389 speak English "very well" and an estimated 1,919 speak English "less than very well." Other languages that were spoken in Rockingham County between 0.1 percent and 0.3 percent were French, German, Other Asian Languages, Tagalog and Chinese, respectively.

Should a LEP group be identified during the pre-permit issuance process, written translations of vital documents shall be provided for each eligible LEP group. An eligible LEP group is defined as a language group that includes 1,000 civilians or is 5 percent 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 constitutes 5 percent of the given population, then the N.C. Department of Environmental Quality would not translate vital written materials. Rather, written notice would be provided in the primary language of the LEP language group of the right to receive competent oral interpretation of those written materials for free. The safe harbor

provisions apply to the translation of written documents only. Safe harbor guides follow the EPA guidance for LEP persons.

Table 6. U.S. Census Bureau, Limited English Proficiency – Rockingham county

Rockingham County							
1. LANGUAGE SPOKEN AT HOME	Estimate	Margin of Error (+/-)	Percent of Population	1. LANGUAGE SPOKEN AT HOME	Estimate	Margin of Error (+/-)	Percent of Population
Total (population 5 years and over):	87724	31	100.00%	Total (population 5 years and over):	87,724	31	100.00%
Speak only English	82,573	344	94.13%	Speak only English	82,573	344	94.13%
Spanish or Spanish Creole:	4,308	365	4.91%	Gujarati:	26	46	0.03%
Speak English "very well"	2,389	340	2.72%	Speak English "very well"	26	46	0.03%
Speak English less than "very well"	1,919	302	2.19%	Speak English less than "very well"	0	29	0.00%
French:	58	47	0.07%	Urdu:	17	26	0.02%
Speak English "very well"	26	26	0.03%	Speak English "very well"	0	29	0.00%
Speak English less than "very well"	32	33	0.04%	Speak English less than "very well"	17	26	0.02%
Italian:	37	35	0.04%	Other Indic Languages	23	33	0.03%
Speak English "very well"	22	24	0.03%	Speak English "very well"	8	13	0.01%
Speak English less than "very well"	15	25	0.02%	Speak English less than "very well"	15	21	0.02%
Portuguese or Portuguese Creole:	1	2	0.00%	Chinese:	231	140	0.26%
Speak English "very well"	1	2	0.00%	Speak English "very well"	34	35	0.04%
Speak English less than "very well"	0	29	0.00%	Speak English less than "very well"	197	136	0.22%
German:	89	68	0.10%	Japanese:	34	38	0.04%
Speak English "very well"	79	67	0.09%	Speak English "very well"	0	29	0.00%
Speak English less than "very well"	10	17	0.01%	Speak English less than "very well"	34	38	0.04%
Other West Germanic languages:	29	28	0.03%	Korean:	34	45	0.04%
Speak English "very well"	29	28	0.03%	Speak English "very well"	7	11	0.01%
Speak English less than "very well"	0	29	0.00%	Speak English less than "very well"	27	43	0.03%
Scandinavian languages:	8	12	0.01%	Hmong:	8	15	0.01%
Speak English "very well"	8	12	0.01%	Speak English "very well"	0	29	0.00%
Speak English less than "very well"	0	29	0.00%	Speak English less than "very well"	8	15	0.01%
Greek:	26	40	0.03%	Thai:	5	17	0.01%
Speak English "very well"	26	40	0.03%	Speak English "very well"	0	29	0.00%
Speak English less than "very well"	0	29	0.00%	Speak English less than "very well"	5	17	0.01%
Russian:	13	25	0.01%	Other Asian Languages:	55	60	0.06%
Speak English "very well"	13	25	0.01%	Speak English "very well"	55	60	0.06%
Speak English less than "very well"	0	29	0.00%	Speak English less than "very well"	0	29	0.00%
Polish:	7	12	0.01%	Tagalog:	58	44	0.07%
Speak English "very well"	0	29	0.00%	Speak English "very well"	31	33	0.04%
Speak English less than "very well"	7	12	0.01%	Speak English less than "very well"	27	26	0.00%

Source: U.S. Census Bureau, 2010-2014 American Community Survey 5-Year Estimates.

6 Local Setting

Data on race and ethnicity, age and sex, poverty, household income, and LEP population contained in the following sections are for US Census Tracts 402 and 403 to display demographics at a tract level. Disability status could only be analyzed on a county level as the information available at the US Census could not be reduced to the tract level. Disability information can be found in Section 5.3. The Census Tracts 402 and 403 encompass all of the Dan River Steam Station and is approximately nine miles by three-and-a-half miles in size as shown in Figure 6-1, from the EPA's EJ Screen tool.

Demographic data within a one-mile radius around the proposed coal ash landfill will be discussed in conjunction with Census Tracts 402 and 403 data. A one-mile radius was chosen for the proposed landfill at Dan River Steam Station as there would be no transportation of coal ash onto the site.

One-Mile radius with U.S. Census Tracts 402 and 403

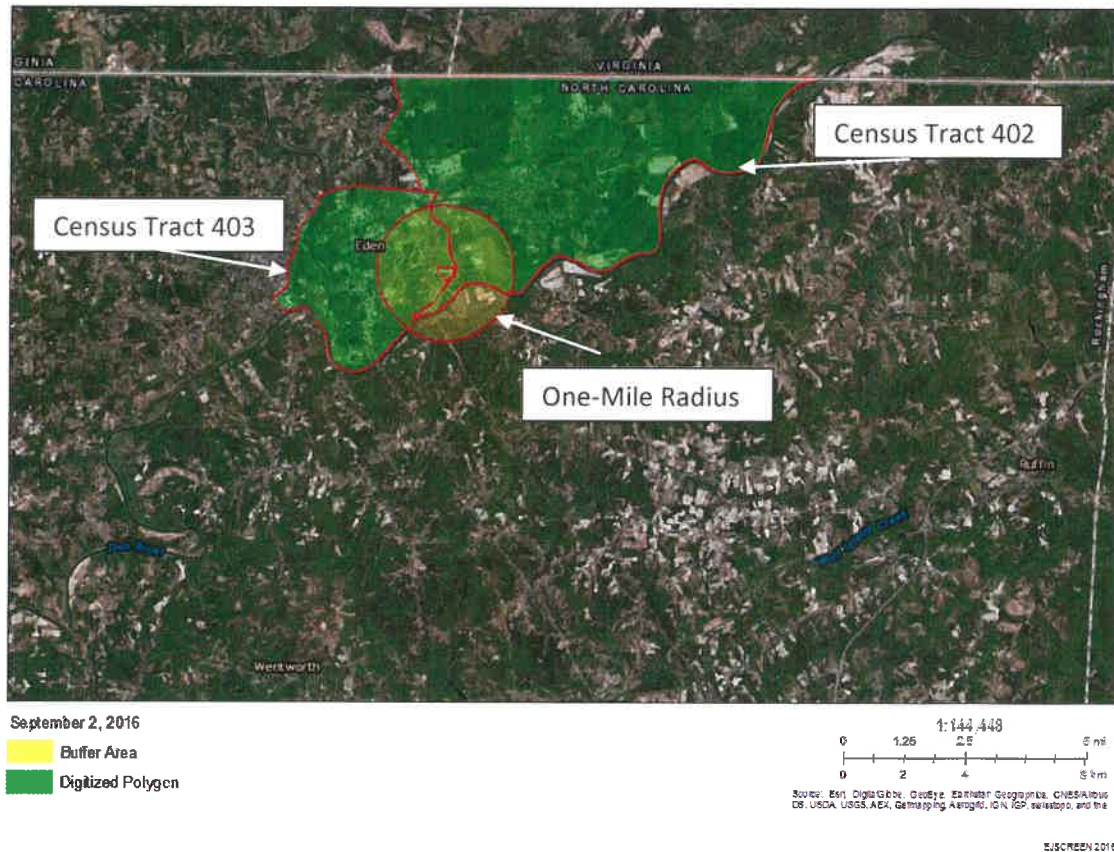


Figure 6-1. Map of One-Mile Radius within U.S. Census Tracts 402 and 403 – Rockingham County, NC

One-Mile Radius around Proposed Dan River Industrial Landfill

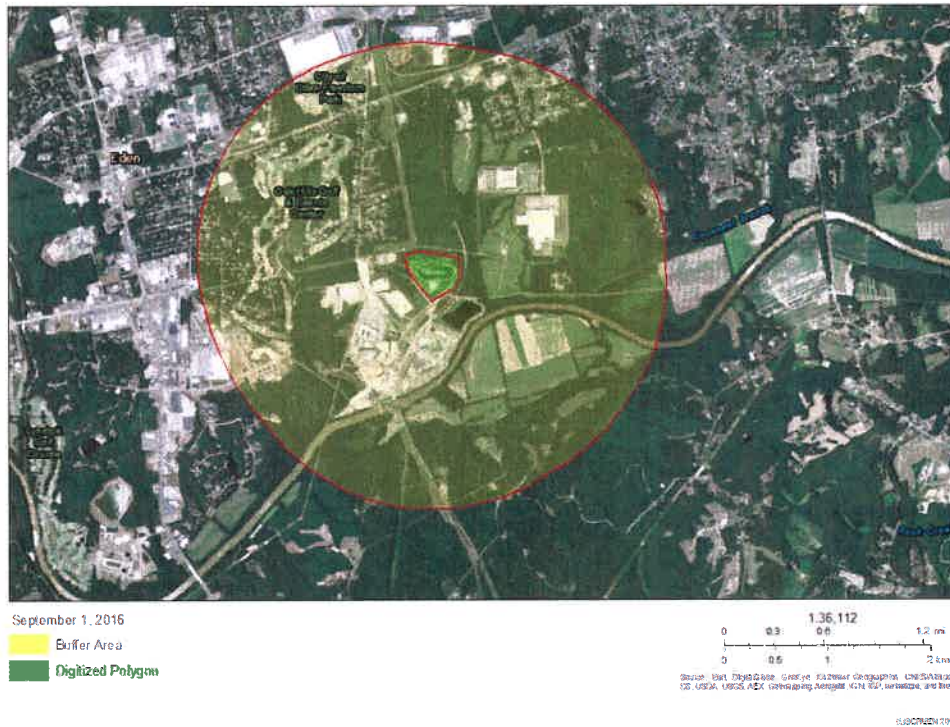


Figure 6-2. Map of One-Mile Radius around Proposed Dan River Industrial Landfill

6.1 Local Industrial Sites

Dan River Steam Station is surrounded by residential areas to the north, west and east, as well as industrial areas to the north and east. The industrial companies within a one-mile vicinity of the Dan River Steam Station include:

- Furniture Transport
- Weill-McLain
- Gildan Active Distribution

6.2 Local Sensitive Receptors

Sensitive receptors include churches, hospitals, schools, daycare facilities, elderly housing and convalescent facilities. One local sensitive receptor, a church, was identified within the one-mile radius, as shown in Figure 6-3.

Local Sensitive Receptors within one-mile of the proposed Dan River industrial landfill

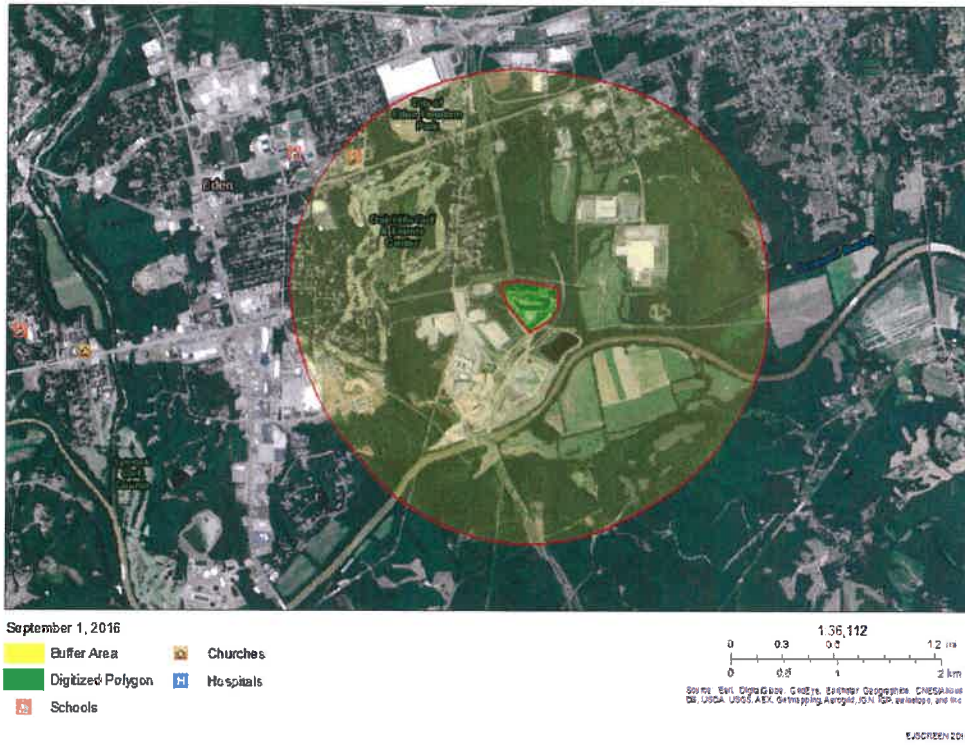


Figure 6-3. Sensitive Receptors surrounding Dan River Complex

6.3 Race and Ethnicity

According to the 2010 US Census Data QT-P3, "Race and Hispanic Origin: 2010; 2010 Census Summary File 1", 4.2 percent and 4 percent of the Rockingham County population live within Census Tract 402 and 403, respectively, as shown in Figure 6-1. The highest populations among the 3,949 people living in Census Tract 402 were White, Black or African American, and Mexican with 71.2 percent, 22.6 percent, and 5.6 percent of the total population, respectively. Persons identifying as Some Other Race, Two or More Races, and Other Hispanic or Latino were also found above 1 percent within Census Tract 402. The highest populations among the 3,712 people living in Census Tract 403's were White, Black or African American, and American Indian or Alaska Native with 81.4 percent, 14.4 percent, and 14.4 percent, respectively. Persons identifying as Asian, Two or More Races, Mexican, and Other Hispanic or Latino were also found above 1 percent within Census Tract 403.

Within one mile of the proposed Dan River Landfill, there was an estimated total residential population of 1,012. The population consisted of 69 percent White, 23 percent Black or African American, and 8 percent Hispanic or Latino (of any race). Asian, Some Other Race, and Two or More Races were also found above 1 percent within one-mile of the proposed landfill. Twenty-three percent of the population living within one mile of the proposed landfill is Black or African American, which is 4.1 percentage points higher than the county percentage of 18.9.

Table 7. U.S. Census Bureau, Race and Ethnicity – Rockingham County - Census Tract 402, 403, and One-Mile Radius

Race and Ethnicity	Census Tract 402		Census Tract 403		One-Mile Radius ²	
	Number	Percent	Number	Percent	Number	Percent
Total Population	3,949	100%	3,712	100%	1,012	100%
White	2,810	71.2%	3,021	81.4%	696	69%
Black or African American	893	22.6%	534	14.4%	237	23%
American Indian or Alaska Native	22	0.6%	534	14.4%	3	0%
Asian	11	0.3%	66	1.8%	32	3%
Native Hawaiian and Other Pacific Islander	1	0%	4	0.1%	0	0%
Some other Race	110	2.8%	27	0.7%	27	3%
Two or More Races	102	2.6%	56	1.5%	17	2%
HISPANIC OR LATINO (of any race)	304	7.7%	146	3.9%	81	8%
Mexican	222	5.6%	94	2.5%		
Puerto Rican	17	0.4%	12	0.3%		
Cuban	2	0.1%	3	0.1%		
Other Hispanic or Latino	63	1.6%	37	1%		

² Source: US Census Data from EJ Screen ACS Summary Report. Summary of ACS Estimates 2010-2014.

6.4 Age and Sex

The following table was completed using data from Census Table QT-P1, "Age Groups and Sex: 2010 for Census Tract 402 and 403, Rockingham County, NC" as well as the EJSCREEN 2016 tool for the one-mile data. The median age of civilians inhabiting Census Tract 402 is lower than the median age of the county by 5.5 percent, 4.1 percent, and 5.9 percent for the categories Both Sexes, Males and Females, respectively. The median age of civilians inhabiting Census Tract 403 is higher than the median age of the county by 5.6 percent, 5 percent, and 7.7 percent for the categories Both Sexes, Males and Females, respectively.

Approximately 1 percent of the total population of the county resides within one mile of the proposed Dan River Landfill. The majority (78 percent) of citizens are between 18 and 64 years old.

Table 8. U.S. Census Bureau, Age and Sex -- Census Tract 115 and One-Mile Radius

Census Tract 402						
Age	Number			Percent		
	Both sexes	Male	Female	Both sexes	Male	Female
Total Population	3,949	1,856	2,093	100%	100%	100%
Under 5 years	322	156	166	8.2%	8.4%	7.9%
Under 18 years	1,035	511	524	26.2%	27.5%	25%
18 to 64 years	2,307	1,092	1,215	58.4%	58.8%	58.1%
65 years and over	607	253	354	15.4%	13.6%	16.9%
Median Age	36.7	36.8	36.6	X	X	X
Census Tract 403						
Age	Number			Percent		
	Both sexes	Male	Female	Both sexes	Male	Female
Total Population	3,712	1,619	2,093	100%	100%	100%
Under 5 years	188	95	93	5.1%	5.9%	4.4%
Under 18 years	697	352	345	18.8%	21.7%	16.5%
18 to 64 years	2,073	946	1,127	55.8%	58.4%	53.8%
65 years and over	942	321	621	25.4%	19.8%	29.7%
Median Age	47.8	45.9	50.2	X	X	X
One-Mile Radius						
Age	Number			Percent		
	Both sexes	Male	Female	Both sexes	Male	Female
Total Population	994	422	572	100%	42%	58%
Under 5 years	70				7%	
Under 18 years	205				21%	
18 to 64 years	790				79%	
65 years and over	196				20%	
Median Age	X	X	X	X	X	X

6.5 Poverty

The following table was compiled using data from Census Table S1701, "Poverty Status in the Past 12 Months in 2014 for the Census Tracts 402 and 403, Rockingham County, North Carolina." EJSCREEN was also used to acquire the data used for the one-mile radius. Within Census Tract 402, considering the margin of error of the U.S. Census Bureau, populations identified as living below poverty include Black or African American, Hispanic or Latino and White civilians, as well as civilians aged 18-64. These entries are highlighted in Table 9. Within Census Tract 403, considering the margin of error of the U.S. Census Bureau, the Hispanic and Latino population is identified as living below poverty level. This entry is highlighted in Table 9.

EJSCREEN 2016 Tool did not give sufficient data to determine estimated percent below poverty within a one-mile radius around the proposed Dan River Steam Station. Estimated household income was reviewed as a source of general income.

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Table 9. U.S. Census Bureau, Poverty Status in the Past 12 Months in 2014 -- Census Tract 402, 403, and One-Mile Radius

Source: U.S. Census Bureau, American Community Survey (ACS) 2010-2014

Subject	Census Tract 402						Census Tract 403						One-Mile Radius					
	Total		Below poverty level		Percent below poverty level		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 +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-
Population for whom poverty status is determined	4,118	378	1,273	316	30.9	7.3	3,559	280	477	154	13.4	4.2	1,012	100				
AGE																		
Under 18	1,185	228	474	185	40	13.9	732	164	103	74	14.1	10.5	308	272				
18 to 64	2,255	230	723	185	32.1	7.9	1,870	191	263	105	14.1	5.3	764	254				
65 years and over	678	91	76	52	11.2	7.7	957	144	111	51	11.6	5.3	262	126				
SEX																		
Male	2,054	293	606	193	29.5	8.6	1,570	189	179	72	11.4	4.4	454	269				
Female	2,064	218	667	185	32.3	8.8	1,989	201	298	111	15	5.3	558	256				
RACE AND HISPANIC OR LATINO ORIGIN																		
White	2,579	328	583	190	22.6	6.5	2,625	284	272	107	10.4	4.1	696	291				
Black or African American	1,099	246	343	201	31.2	18.2	666	179	152	90	22.8	12.2	237	300				
American Indian and Alaska Native	63	54	57	51	90.5	16.9	0	12	0	12	x	x	3	47				
Asian	0	12	0	12	x	x	103	96	0	12	0	28.1	32	79				
Native Hawaiian and Other Pacific Islander	0	12	0	12	x	x	0	12	0	12	x	x	0	12				
Some other Race	192	158	161	148	83.9	26.3	52	67	20	35	38.5	52.6	27	146				
Two or more races	185	121	129	102	69.7	36.4	113	89	33	42	29.2	28.9	11	85				
Hispanic or Latino	365	220	303	216	83	19.3	303	224	91	93	30	32.4	81	171				
RACE AND HISPANIC OR LATINO ORIGIN																		
All individuals below:																		
50 percent of poverty level	473	200					233	113										
125 percent of poverty level	1,424	354					720	220										
150 percent of poverty level	1,965	362					937	263										
185 percent of poverty level	2,425	400					1267	298										
200 percent of poverty level	2,599	375					1343	295										

6.7 Household Income

The following table was compiled using data from Census Table S1901, "Income in the Past 12 Months (In 2014 Inflation-Adjusted Dollars) for the Census Tracts 402 and 403, Rockingham County, North Carolina." The one-mile data was acquired using EJSCREEN 2016 data. In Census Tract 402, the income bracket with the highest percentage of households is \$35,000 to \$49,000; this is 8.4 percentage points higher than the same income bracket in the county as a whole. The median income for Census Tract 402 is \$7,484 lower than the county. The mean income within the Census Tract 402 is \$15,256 lower than the county. In Census Tract 403, the income bracket with the highest percentage of households is \$35,000 to \$49,000; this is 10.3 percentage points higher than the same income bracket in the county as a whole. The median income for Census Tract 403 is \$948 lower than the county. The mean income within the Census Tract 403 is \$2,977 higher than the county.

Within one mile, an estimated 25 percent of households have an income of \$15,000-to-\$24,999; this is higher than the county percentage of 15.5. Forty-two percent of households have an income between >\$10,000 and \$24,999. This is 10.3 percentage points higher than the county estimate of 31.7 percent.

Table 10. U.S. Census Bureau, Household Income in the Past 12 Months (2014) – Census Tract 115 and One-Mile Radius

Subject	Census Tract 402		Census Tract 403		One-mile Radius	
	Households		Households		Households	
	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-	Estimate	Margin of Error +/-
Total	1,541	114.0	1,606	120.0	484	104
Less than \$10,000	14.1%	5.4	6.8%	2.7	17%	59
\$10,000 to \$14,999	8.9%	3.7	5.7%	2.6		
\$15,000 to \$24,999	19.8%	7.8	19.0%	6.7	25%	88
\$25,000 to \$34,999	13.0%	5.1	7.8%	3.4	30%	128
\$35,000 to \$49,999	25.1%	6.6	27.0%	6.4		
\$50,000 to \$74,999	9.9%	4.5	13.1%	3.7		
\$75,000 to \$99,999	7.3%	3.0	8.3%	3.5	17%	77
\$100,000 to \$149,999	1.5%	1.4	7.0%	3.6		
\$150,000 to \$199,999	0.0%	2.2	1.9%	1.6		
\$200,000 or more	0.4%	0.7	3.4%	2.4		
Median income (dollars)	\$31,394	\$6,812	\$37,930	\$2,663		
Mean income (dollars)	\$34,816	\$3,364	\$53,049	\$6,521		

6.8 Limited English Proficiency (LEP)

The following table was compiled using data from Census Table B16001, "Language Spoken at Home by Ability to Speak English for the Population 5 years and over, 2014 estimate for the Census Tracts 402 and 403, Rockingham County, North Carolina." The Spanish or Spanish Creole population within Census Tract 402, total an estimated 203 people, making up 0.002 percent of the total estimated population for Rockingham County. Of the 38 Spanish or Spanish Creole population that speaks English "less than very well" within Census Tract 402, they comprise an estimated 2 percent of the county estimate of 1,919 that also speak English "less than very well." The Spanish or Spanish Creole population within Census Tract 403, total an estimated 285 people, making up 0.003 percent of the total estimated population for Rockingham County. Of the 192 Spanish or Spanish Creole population that speaks English "less than very well" within Census Tract 403, they comprise an estimated 10 percent of the county estimate of 1,919 that also speak English "less than very well."

EJSCREEN 2016 did not give sufficient data to determine estimates of languages spoken at home within a one-mile radius around the proposed Dan River Steam Station.

Table 11. U.S. Census Bureau, Limited English Proficiency -- Census Tract 402, 403, and One-Mile Radius

1. LANGUAGE SPOKEN AT HOME	Census Tract 402			Census Tract 403			One-Mile Radius		
	Estimate	Margin of Error (+/-)	Percent of Population	Estimate	Margin of Error (+/-)	Percent of Population	Estimate	Margin of Error (+/-)	Percent of Population
Total (population 5 years and over):	3,882	382	100.0%	3,559	259	100%	951	364	
Speak only English	3,661	374	94.0%	3,190	251	90%			
Spanish or Spanish Creole:	203	153	5.2%	285	224	8%			
Speak English "very well"	165	124	4.3%	93	81	2.60%			
Speak English less than "very well"	38	34	1.0%	192	149	5.40%			
Chinese:	0	12	0%	50	69	1.40%			
Speak English "very well"	0	12	0%	17	22	0.50%			
Speak English less than "very well"	0	12	0%	33	48	1.00%			
Polish:	7.00	12.00	0.2%	0	12	0%			
Speak English "very well"	0.00	12.00	0.0%	0	12	0%			
Speak English less than "very well"	4.00	12.00	0.1%	0	12	0%			
Other Asian languages:	0	12	0%	34	52	1.00%			
Speak English "very well"	0	12	0%	34	52	1.00%			
Speak English less than "very well"	0	12	0%	0	12	0%			
Other Pacific Island languages:	5.00	9.00	0.1%	0	12	0%			
Speak English "very well"	5.00	9.00	0.1%	0	12	0%			
Speak English less than "very well"	0.00	12.00	0.0%	0	12	0%			
Other Native North American languages:	6.00	9.00	0.2%	0	12	0%			
Speak English "very well"	0.00	12.00	0.0%	0	12	0%			
Speak English less than "very well"	6.00	9.00	0.2	0	12	0%			

7 Field Reconnaissance

On May 25, 2016, the N.C. Department of Environmental Quality staffers Sarah Rice, an environmental senior specialist and Shannon Aufman, an engineering project manager, visited the area of the Dan River Steam Station to corroborate the EPA EJScreen data, which was populated within one-mile of the proposed landfill. Sensitive receptors were also sought out during the visit, as shown in Figure 7-1. The Draper Precinct encompasses the area north-east of the proposed landfill. The Eden Central Precinct encompasses the area north-west of the proposed landfill.

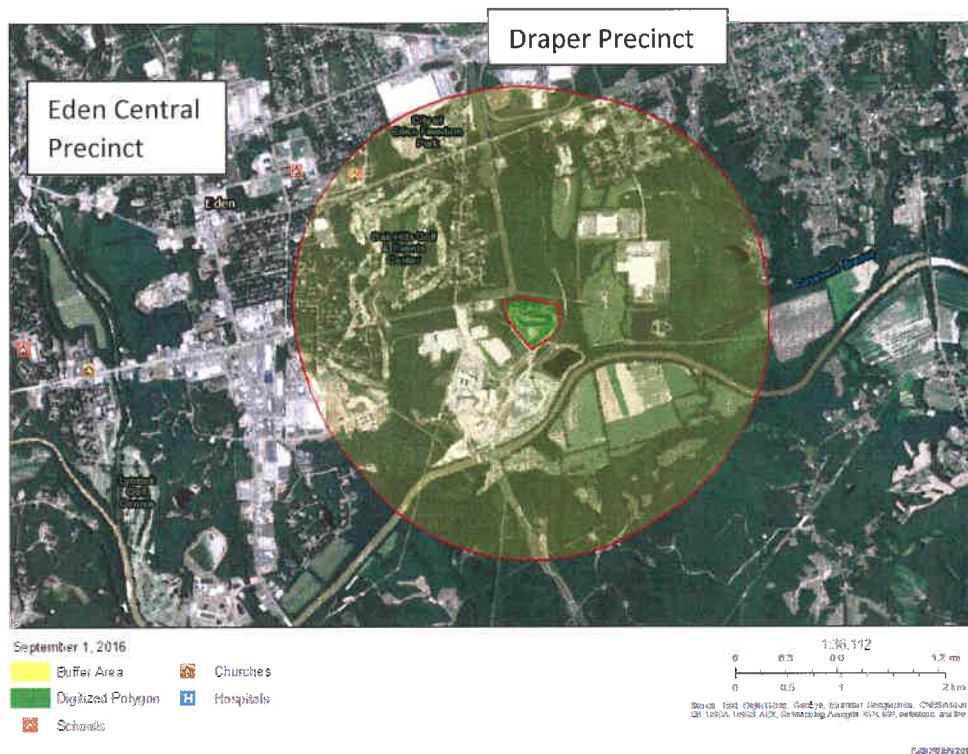


Figure 7-1. One-mile radius surrounding the proposed Dan River Industrial Landfill

7.1 Demographic Analysis of Potential Area of Concern

According to the EPA EJSCREEN, which is a summary of 2010-2014 population data, the following was determined.

- Within the one-mile boundary, an estimated 40 percent of citizens have an income less than \$25,000 a year. This is more than 5 percent greater than the county as a whole.

The department identified the above demographics through EJSCREEN, U.S. Census Bureau, and site reconnaissance. The department decided to hold an information session in Eden, N.C., to reach out to the community to educate people about the proposed landfill and its potential impacts.

7.2 Actions Completed by the Department

After analyzing the data, the department identified potential communities within the Draper and Eden Central Precincts of Eden, NC. The department has completed or will complete the following to communicate with the community:

- Contact local government authorities to solicit feedback on the environmental justice process surrounding the proposed landfill.
- Sent News Release to surrounding churches, regional libraries, major employers and fire stations.
- Held an information session on July 27, 2016 at the Eden Town Hall, Eden, NC.

7.2.1 Discussion with Public Officials

The department has communicated with the public and public officials in communities within the one-mile boundary regarding the environmental justice efforts. A press release providing details about the public information session was sent to area churches and major employers. The department solicited feedback from the mayor of Eden and Rockingham County commissioners and asked public officials if there are any other ways to communicate with the community.

On July 12, 2016, N.C. Department of Environmental Quality's staff members, including Michael Scott, director of the Division of Waste Management, Ms. Rice, Ms. Aufman, and Ed Mussler, the permitting branch supervisor, contacted Rockingham County Commissioners Mark F. Richardson and H. Keith Duncan, and Lance L. Metzler, Rockingham County manager. The commissioners and the county manager were receptive to the information received about the information session. They asked if the N.C. Department of Environmental Quality was going to reach out to the specific citizens in other ways. News releases were being sent to churches and libraries. The county offered to lend their reverse 911 capabilities. They also stated that the city of Eden has the same capability.

On July 12, 2016, Mr. Scott, Ms. Rice, Ms. Aufman, and Mr. Mussler contacted Eden Mayor Wayne Tuggle and Eden City Manager Brad Corcoran. Mr. Tuggle and Mr. Corcoran were receptive to the information received about the information session. They appreciated the information as they like to know what's going on in their community. They said the N.C. Department of Environmental Quality could use reverse 911 to communicate with the community. They said the community has

had a mixed reaction on the subject of coal ash. They said the community would be receptive to an information session

7.2.2 Further Communication with Potential Area of Concern

The mailing of informational postcards will occur coincidentally with the submittal of this document to the EPA Office of Civil Rights and the U.S. Commission on Civil Rights. The postcard is to invite the residents identified within the potential area of concern to contact the N.C. Department of Environmental Quality with any questions or concerns regarding the proposed project.

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8 Summary of Potential Adverse Environmental and Human Health Effects and Analysis of the Potential for Disproportionately High and Adverse Effects.

Potential impacts and their mitigation during the construction and operation of the proposed landfill are summarized below.

8.1 Traffic

Coal ash from the basins will be staying on-site and will be disposed within the proposed landfill once the proposed landfill is constructed.

8.2 Potential releases of CCRs to the environment

Potential migration pathways for coal combustion residuals could happen through leaching, migration to groundwater, erosion and transport to soil and surface water, and wind erosion/dust migration.

8.2.1 Leachate Collection System

It is anticipated that leachate generated at the proposed landfill will ultimately discharge to a publicly owned treatment works (POTW) for treatment. Modifications to the Engineering and Facility Plan may be required pending ongoing discussions with the POTW.

A leachate storage tank facility with dual-containment will be located near the northwestern corner of the landfill to provide temporary leachate storage in case of extenuating circumstances. It is anticipated that leachate will be pumped from the storage tank facility to a sanitary sewer force main along the northern edge of the landfill area for treatment by a POTW or alternative leachate treatment approach as approved by the division. Leachate may be used as a dust suppressant only in areas that drain to the leachate collection system (i.e. active face of the landfill) in accordance with the Dust Control Plan. (AMEC, 2015)

8.2.2 Erosion and Sedimentation Control

Erosion and sedimentation control (E&SC) during landfill operations would consist of monitoring and repairing E&SC stormwater conveyance features and surface erosion.

Erosion control principles could include:

- Disturbing as little area as practical at any one time for landfill operations.
- Seeding/mulching of disturbed areas commencing as soon as practically possible.
- Employing erosion control matting or seeding and mulching on steep slopes and other erosion prone areas.
- Use of earthen berms, hay bales, wattles, silt fences, riprap, or equivalent devices downgradient of disturbed areas, stockpiles, drainage pipe inlets and outlets, and at intervals along grassed waterways, until permanent vegetation is established.
- Placement of riprap at the inlets and outlets of stormwater piping

Surface erosion monitoring at a landfill could include:

Adequate erosion control measures could be established to help prevent sediment from leaving

the site. Channels would be inspected once every seven days and within 24 hours of any rainfall event of 0.5 inches or greater.

Slopes will be periodically checked for erosion and vegetative quality, fertilized and mowed. A slope or portion of the slope shall be identified as needing maintenance if it meets any one of the following conditions:

- Exposed waste on exterior slopes;
- Areas of cracking, sliding or sloughing; or
- Areas of seepage.

Slopes identified as needing maintenance shall be repaired as soon as practical and as appropriate to correct deficiencies. Repair activities may include re-dressing the slope, filling in low areas, and/or seeding.

8.2.3 Dust Control Plan

The primary potential source of dust emissions in the landfill is the top deck area and active area of waste placement. These areas are at a higher risk for producing dust due to vehicular and equipment traffic and earthworks like construction. Exterior landfill slopes are less of a dust control concern, as they have intermediate or operational soil covers which are vegetated as required in the Operations Plan. (AMEC, 2015)

Dust emissions from the landfill can be controlled through a variety of dust control methods. Possible dust control methods are identified here. Dust control methods may be characterized as products and/or applications, structural wind breaks and/or covers, and operational methods.

Dust control methods for the proposed landfill area could include:

- Watering
- Establishing vegetative cover
- Mulching
- Structural controls fencing
- Wind breaks
- Temporary coverings
- Calcium chloride
- Spray applied suppressants
- Soil stabilizers
- Operational soil cover
- Modifying the active working area
- Modifying operations during dry and windy conditions

9 Conclusion

Dan River Steam Station is in an approximately 380-acre property in Rockingham County, in Eden, N.C. and is situated north of the Dan River. This report examined the demographic and environmental conditions within Rockingham County, as well as census tracts 402, 403, and a one-mile radius of the Dan River Steam Station to determine any disproportionately high or adverse environmental and human health effects on low-income or minority populations. Low-income and minority populations were identified within the Draper and Eden Central Precincts. An informational session was held in response to the findings of the demographic data. Four community members attended the session. As a result of the session, the department will send out postcards to those precincts to finalize the dissemination of information.

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