

## **EXHIBIT 8**

*Excerpts of Corrected Expert Report  
of Anthony E. Fairfax, dated October  
28, 2024, and appended Corrected  
Table 35*

**UNITED STATES DISTRICT COURT  
MIDDLE DISTRICT OF NORTH CAROLINA**

SHAUNA WILLIAMS, et al.,

*Plaintiffs,*

v.

REPRESENTATIVE DESTIN HALL, in his  
official capacity as Chair of the House Standing  
Committee on Redistricting, et al.,

*Defendants.*

Civil Action No. 23 CV 1057

---

NORTH CAROLINA STATE CONFERENCE OF  
THE NAACP, et al.,

*Plaintiffs,*

v.

PHILIP BERGER, in his official capacity as the  
President Pro Tempore of the North Carolina  
Senate, et al.,

*Defendants.*

Civil Action No. 23 CV 1104

**CORRECTED EXPERT REPORT OF ANTHONY E. FAIRFAX  
on the Development of Illustrative Plans for  
State Senate and House Districts for the State of North Carolina  
and other Demographic Analyses**

---

October 28, 2024

## Table of Contents

|       |  |    |
|-------|--|----|
| I.    | Introduction .....   | 5  |
| II.   | Qualifications .....   | 5  |
| III.  | Software, Data, and Technical Process Utilized .....                           | 6  |
| IV.   | Summary of Opinions .....  | 7  |
| V.    | Methodology .....  | 9  |
| VI.   | Demographic Profile of the State, Northeast Region, and Triad.....             | 15 |
| VII.  | North Carolina Regions – Major Socioeconomic Indicators by County.....         | 23 |
| VIII. | North Carolina Regions – Major Socioeconomic Indicators by Race/Ethnicity..... | 26 |
| IX.   | House Illustrative Plans A & B .....   | 31 |
| X.    | Senate Illustrative Plan A .....   | 52 |
| XI.   | Senate Illustrative Plan B .....   | 61 |
| XII.  | Comparative Analysis with the Enacted Plans .....                              | 62 |
| XIII. | Apportionment Analysis.....  | 64 |
| XIV.  | Congressional Analysis .....   | 68 |
| XV.   | Population Shifts from 2022 Interim to 2023 Enacted Congressional Plans .....  | 73 |
| XVI.  | Conclusions .....  | 74 |
|       | Index of Appendices .....  | 76 |

## Figures

|   |    |
|---|----|
| Figure 1 - North Carolina NE Region BVAP Percentage - VTDs .....          | 19 |
| Figure 2 - North Carolina Triad Region BVAP Percentage - VTDs .....       | 23 |
| Figure 3 - North Carolina Counties Median Household Income.....           | 25 |
| Figure 4 – House Illustrative Plan A for Northeast Districts.....         | 32 |
| Figure 5 – House Illustrative Plan A District 5.....                      | 33 |
| Figure 6 – House Illustrative Plan A District 12.....                     | 34 |
| Figure 7 – House Illustrative Plan A District 23.....                     | 35 |
| Figure 8 – House Illustrative Plan A District 24.....                     | 37 |
| Figure 9 – House Illustrative Plan A District 25.....                     | 38 |
| Figure 10 – House Illustrative Plan A District 27.....                    | 39 |
| Figure 11 – House Illustrative Plan B for Northeast Districts .....       | 45 |
| Figure 12 – House Illustrative Plan B District 8.....                     | 46 |
| Figure 13 – House Illustrative Plan B District 24.....                    | 47 |
| Figure 14 – Senate Illustrative Plan A for Northeast Districts .....      | 53 |
| Figure 15 – Senate Illustrative Plan A - District 2.....                  | 54 |
| Figure 16 – Senate Illustrative Plan A - District 5.....                  | 56 |
| Figure 17 – Senate Illustrative Plan B for Northeast Districts.....       | 61 |
| Figure 18 - North Carolina State BVAP by VTD of CD SL 2023-145 Plan.....  | 69 |
| Figure 19 - North Carolina BVAP by VTD of CD 1 SL 2023-145 Plan.....      | 70 |
| Figure 20 - North Carolina Triad BVAP by VTD of CD SL 2023-145 Plan ..... | 72 |

## Tables

|   |    |
|---|----|
| Table 1 –Total Population by Race/Ethnicity (2010 - 2020) for North Carolina .....          | 16 |
| Table 2 – Voting Age Population by Race/Ethnicity (2010 - 2020) for North Carolina.....     | 17 |
| Table 3 –Total Population by Race/Ethnicity (2010 - 2020) for NC Northeast Region.....      | 18 |
| Table 4 – Voting Age Population by Race/Ethnicity (2010 - 2020) for NC Northeast Region ... | 20 |
| Table 5 –Total Population by Race/Ethnicity (2010 - 2020) for NC Triad Region .....         | 21 |
| Table 6 – Voting Age Population by Race/Ethnicity (2010 - 2020) for NC Triad Region .....   | 22 |
| Table 7 - State of North Carolina’s Major Socioeconomic Attributes .....                    | 24 |
| Table 8 - Northeast Counties Major Socioeconomic Attributes.....                            | 24 |
| Table 9 - Forsyth-Guilford Counties Major Socioeconomic Attributes .....                    | 25 |
| Table 10 - % High School Degree or Higher by Major Race/Ethnicity by Regions or Clusters..  | 26 |
| Table 11 - County Median Household Income by Major Race/Ethnicity by Regions or Clusters    | 27 |
| Table 12 - % without Health Insurance of Regions or Clusters .....                          | 28 |
| Table 13 - Median Housing Values by Race for Regions and Clusters.....                      | 29 |
| Table 14 - % Renting by Major Race/Ethnicity of Regions or Clusters.....                    | 30 |
| Table 15 - House Illustrative Plan A District 5’s Top 10 Populated Census Places .....      | 33 |
| Table 16 - North Carolina State House District 12’s Census Places .....                     | 34 |
| Table 17 - North Carolina State House District 23’s Top 10 Populated Census Places.....     | 36 |
| Table 18 - North Carolina State House District 24’s Top 10 Populated Census Places.....     | 37 |
| Table 19 - North Carolina State House District 25’s Census Places .....                     | 38 |
| Table 20 - House Illustrative Plan A District 27’s Top 10 Populated Census Places .....     | 40 |
| Table 23 – House Illustrative Plan A’s NE Majority Black District’s VAP .....               | 42 |

|   |    |
|---|----|
| Table 22 – House Illustrative Plan A’s NE Majority Black Districts CVAP .....                 | 42 |
| Table 23 – House Illustrative Plan A’s Compactness Comparison to House Enacted Plan .....     | 44 |
| Table 24 - North Carolina State House District 8’s Census Places .....                        | 46 |
| Table 25 - North Carolina State House District 24’s Top 10 Populated Census Places.....       | 48 |
| Table 26 – House Illustrative Plan B’s NE Majority Black District’s Voting Age Population.... | 50 |
| Table 27 – House Illustrative Plan B’s NE Majority Black Districts CVAP .....                 | 50 |
| Table 28 – House Illustrative Plan B’s Compactness Comparison to House Enacted Plan .....     | 51 |
| Table 29 - Senate Illustrative Plan A - District 2’s Top 10 Census Places.....                | 55 |
| Table 30 - Senate Illustrative Plan A - District 2’s Top 10 Populated Census Places.....      | 56 |
| Table 31 – Senate Illustrative Plan A’s NE Majority Black District’s Voting Age Population... | 58 |
| Table 32 – Senate Illustrative Plan A’s NE Majority Black Districts CVAP.....                 | 58 |
| Table 33 – Senate Illustrative Plan A’s Compactness Comparison to Senate Enacted Plan .....   | 60 |
| Table 34 – House Illustrative Plans’ and Enacted Plans’ Criteria Comparison.....              | 63 |
| Table 35 – Senate Illustrative Plans’ and 2023 Enacted Plans’ Criteria Comparison .....       | 64 |
| Table 36 - Wake County, North Carolina House District Population Deviation.....               | 65 |
| Table 38 - Brunswick-New Hanover Cluster Senate District’s Population Deviation .....         | 67 |
| Table 39 - Iredell-Mecklenburg Cluster Senate District’s Population Deviation.....            | 68 |
| Table 40 - Racial Demographics in North Carolina’s 2022 Interim Plan – CD 1 .....             | 70 |
| Table 41 - Racial Demographics North Carolina’s 2023 Enacted Plan – CD 1 .....                | 70 |
| Table 42 - Racial Demographics North Carolina’s 2022 Interim Plan – Triad CDs.....            | 71 |
| Table 43 - Racial Demographics North Carolina’s 2023 Enacted Plan – Triad CDs.....            | 72 |
| Table 44 - 2022 Interim to 2023 Enacted Plan - County Areas Added and Removed .....           | 74 |

## IX. House Illustrative Plans A & B

### A. Illustrative Plans Introduction

57. Illustrative plans were developed using federal and North Carolina state redistricting criteria and, as the below Figures and Tables demonstrate, adhere to state and federal laws as well as traditional redistricting criteria. In addition to these redistricting criteria, the plan's maps and data reports summarized below also show that North Carolina's Black population is sufficiently large and geographically compact to constitute a majority in six single-member districts, thereby satisfying the first precondition of *Gingles*.<sup>24</sup>
58. The plan development decisions I made followed the state's redistricting criteria, with one important exception. I considered racial data during the development of the plans, as is appropriate in the context of Section 2 of the Voting Rights Act (VRA). My consideration of race data during the development process was balanced with all the other redistricting considerations outlined above, and I ensured that race did not predominate.
59. To develop the House Illustrative plans, I used the House Enacted Plan as a starting point. 104 of the 120 state house districts in Illustrative Plan A and 106 in Illustrative Plan B are identical to those in the House Enacted Plan (see Appendix D). The House Illustrative plans show that it is possible to draw a plan with additional majority Black state house districts, particularly in the northeast region of the state, while adhering to the redistricting criteria of compactness, contiguity, respect for political subdivisions, and factors identifying communities of interest. The Illustrative plans are only intended to demonstrate that a plan can be created that adheres to traditional redistricting criteria and satisfy the first precondition of *Gingles*.<sup>25</sup>

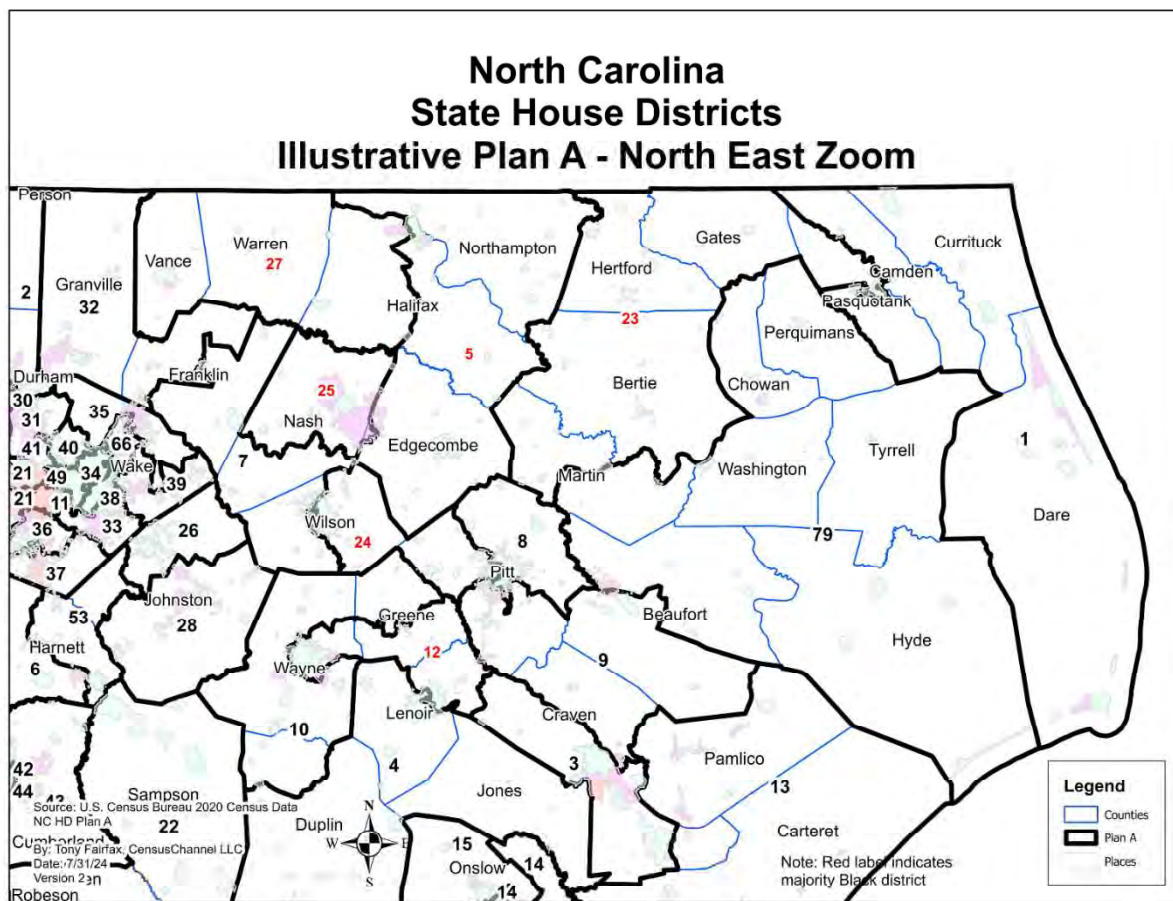
### B. House Illustrative Plan A

60. Figure 4 presents the northeast section of House Illustrative Plan A. House Illustrative Plan A contains six majority Black house districts including HD 5, 12, 23, 24, 25, and 27. The House Enacted Plan in the northeast section of North Carolina contains two majority Black districts, HD 23, and HD 27 (see Appendix D).

---

<sup>24</sup>See *Thornburg v. Gingles*, 478 U.S. 30, 50-51 (1986). The first precondition of *Gingles* requires demonstration that the minority population is sufficiently numerous and geographically compact to enable the creation of at least one single-member majority-minority district.

<sup>25</sup> It should be understood that many variations of this plan could be generated that incorporate additional political and community desires and continue to adhere to federal and state redistricting criteria and contain six majority Black districts to satisfy the first precondition of *Gingles*.



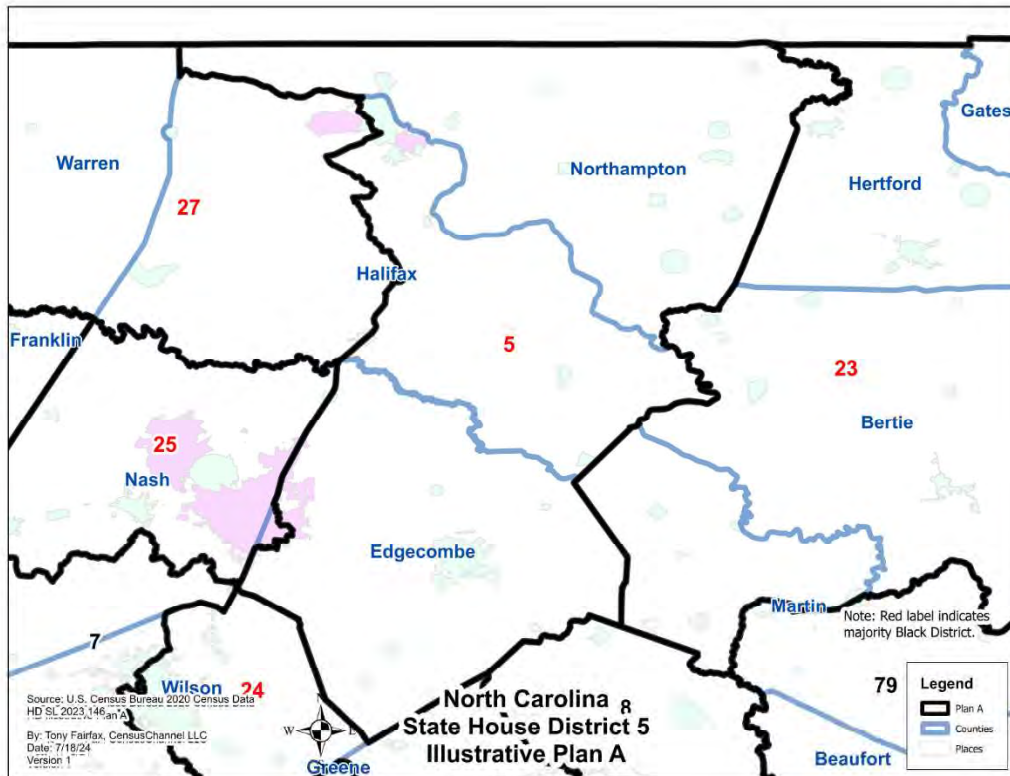
**Figure 4 – House Illustrative Plan A for Northeast Districts**

61. House Illustrative Plan A retains the configuration of 104 Districts from the 2023 Enacted House Plan. For this plan, I used the cluster option (Duke\_House 03) used for the 2023 Enacted House Plan, and my plan only alters ten cluster groupings from this option, all in the eastern part of the state.

C. House Illustrative Plan A - District 5

62. House Illustrative Plan A's District 5 is located on the northern border of the state with Northampton wholly contained, the majority of Edgecombe, and a portion of Halifax County (see Figure 5). The largest city within HD 5 is Roanoke Rapids with 13,533 persons (see Table 15). Out of the 83,586 persons in the district, 44,121 reside in municipalities and CDPs. The remaining 39,465 reside in unincorporated areas.





**Figure 5 – House Illustrative Plan A District 5**

**Table 15 - House Illustrative Plan A District 5's Top 10 Populated Census Places**

| Census Places                         | TTLPop | %       |
|---------------------------------------|--------|---------|
| Roanoke Rapids City                   | 13,533 | 88.86%  |
| Tarboro Town                          | 10,721 | 100.00% |
| Rocky Mount City                      | 5,737  | 10.56%  |
| Scotland Neck Town                    | 1,640  | 100.00% |
| Weldon Town                           | 1,444  | 100.00% |
| Princeville Town                      | 1,254  | 100.00% |
| Pinetops Town                         | 1,200  | 100.00% |
| Gaston Town                           | 1,008  | 100.00% |
| Garysburg Town                        | 904    | 100.00% |
| Rich Square Town                      | 894    | 100.00% |
| Total Population of District 5 Places | 44,121 |         |

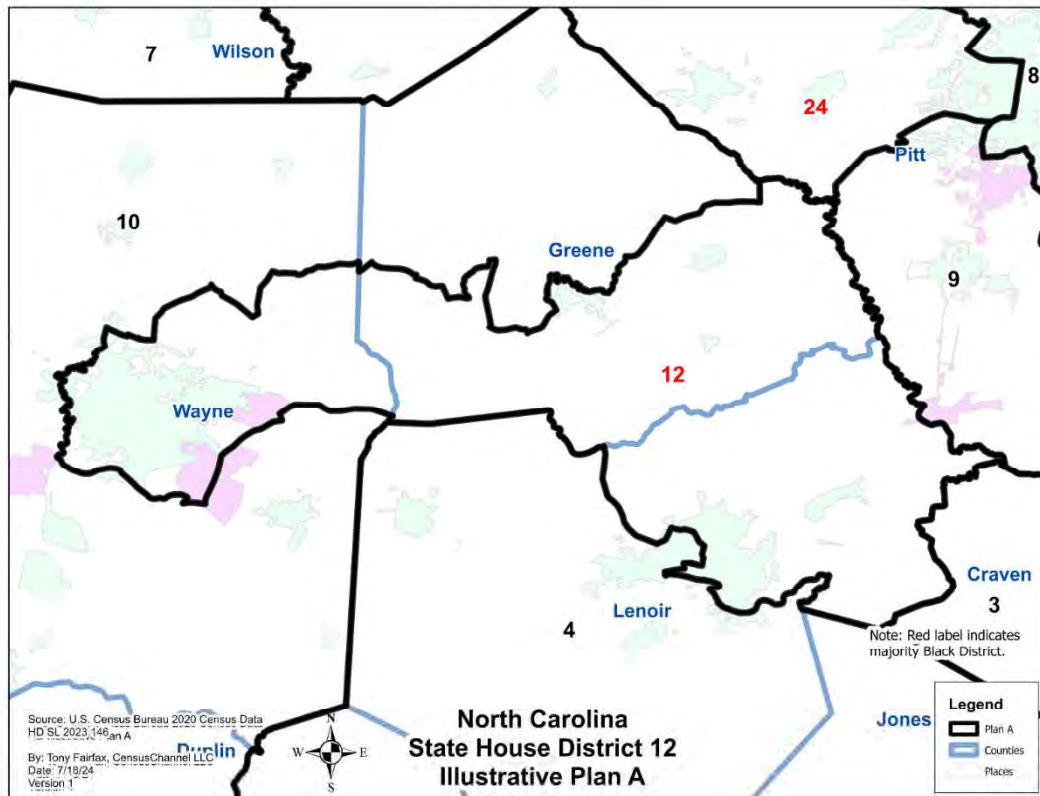
Source: U.S. Census Bureau 2020 Census Data; Maptitude Report Data

63. The counties of Edgecombe, Halifax, and Northampton show socioeconomic commonalities. For example, according to the 2022 5-Yr ACS, Edgecombe, Halifax, and Northampton counties are in the bottom quintiles of the state for high school degree or greater and median household income (see Appendix E).



D. House Illustrative Plan A - District 12

64. House Illustrative Plan A's District 12 is located on the eastern side of I-95 within the city of Goldsboro with portions of Greene, Lenoir, and Wayne counties (see Figure 6). The largest city within HD 12 is Goldsboro City with 32,860 persons (see Table 16). Out of the 84,028 persons in the district, 55,271 reside in municipalities and CDPs. The remaining 28,757 reside in unincorporated areas.



**Figure 6 – House Illustrative Plan A District 12**

**Table 16 - North Carolina State House District 12's Census Places**

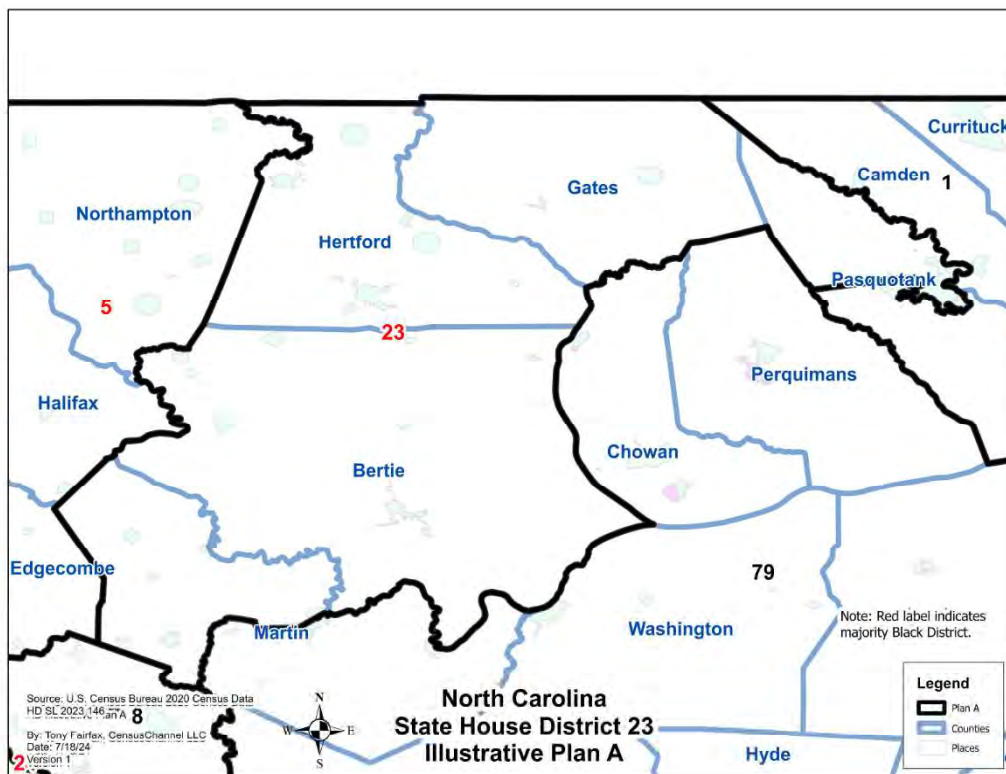
| Census Places                          | TTLPop | %       |
|--|--------|---------|
| Goldsboro City                         | 32,860 | 97.63%  |
| Kinston City                           | 15,254 | 76.65%  |
| Elroy CDP                              | 1,895  | 50.47%  |
| New Hope CDP                           | 1,588  | 100.00% |
| Snow Hill Town                         | 1,481  | 100.00% |
| Maury CDP                              | 1,404  | 100.00% |
| Hookerton Town                         | 413    | 100.00% |
| Graingers CDP                          | 229    | 100.00% |
| Grifton Town                           | 147    | 6.00%   |
| Total Population of District 12 Places | 55,271 |         |

Source: U.S. Census Bureau 2020 Census Data; Maptitude Report Data

65. The counties of Greene, Lenoir, and Wayne show socioeconomic commonalities. For example, according to the 2022 5-Yr ACS, Greene, Lenoir, and Wayne counties are in the bottom quintiles of the state for high school degree or greater and median household income (see Appendix E).

E. House Illustrative Plan A - District 23

66. House Illustrative Plan A's District 23 is located on the northern border of the state with three counties wholly contained (Bertie, Gates, and Hertford) and two counties partly contained (Martin and Pasquotank) (see Figure 7). The largest city within HD 23 is Elizabeth City with 17,084 persons (see Table 17). Out of the 87,455 persons in the district, 36,696 reside in municipalities and CDPs. The remaining 50,759 reside in unincorporated areas.



**Figure 7 – House Illustrative Plan A District 23**

**Table 17 - North Carolina State House District 23's Top 10 Populated Census Places**

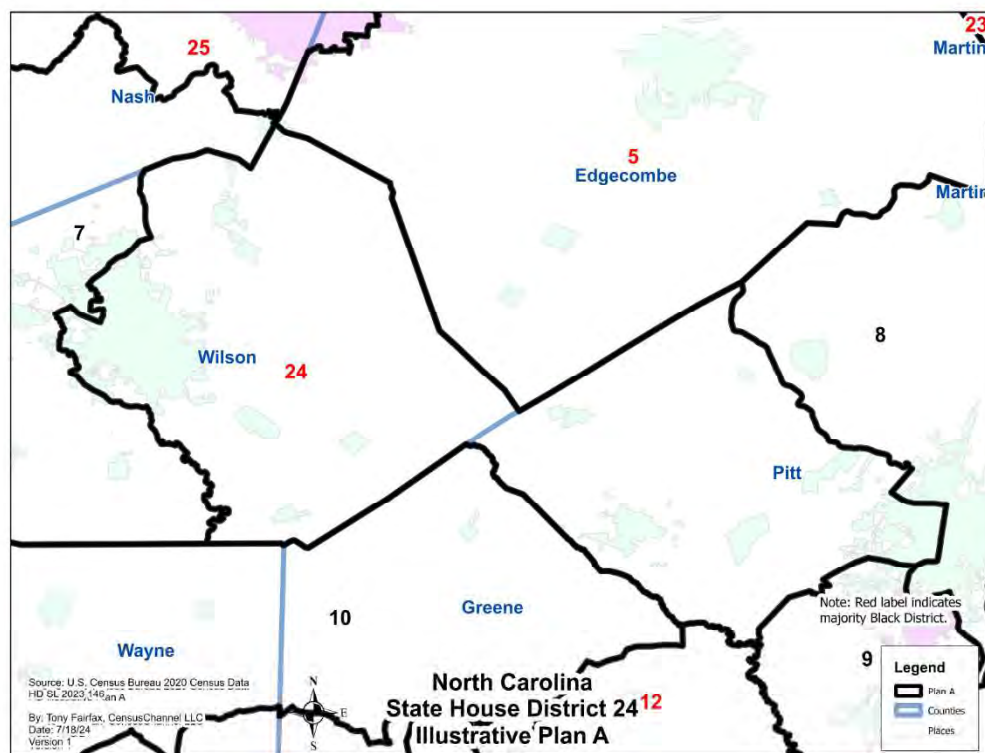
| Census Place                           | TTLPop | %       |
|--|--------|---------|
| Elizabeth City                         | 17,084 | 91.70%  |
| Ahoskie Town                           | 4,891  | 100.00% |
| Windsor Town                           | 3,582  | 100.00% |
| Williamston Town                       | 2,627  | 50.06%  |
| Murfreesboro Town                      | 2,619  | 100.00% |
| Robersonville Town                     | 1,269  | 100.00% |
| Aulander Town                          | 763    | 100.00% |
| Winton Town                            | 629    | 100.00% |
| Lewiston Woodville Town                | 426    | 100.00% |
| Hamilton Town                          | 306    | 100.00% |
| Total Population of District 23 Places | 36,696 |         |

Source: U.S. Census Bureau 2020 Census Data; Maptitude Report Data

67. The counties of Bertie, Gates, Hertford, Martin, and Pasquotank show socioeconomic commonalities. For example, according to the 2022 5-Yr ACS, Bertie, Gates, Hertford, and Martin counties are in the bottom quintiles of the state for high school degree or greater and median household income (see Appendix E). Pasquotank County is close in socioeconomic makeup, occupying the middle quintile for the same attributes.

**F. House Illustrative Plan A - District 24**

68. House Illustrative Plan A's District 24 consists of two counties, Wilson and Pitt (see Figure 8). The largest city within HD 24 is Wilson with 37,163 persons (see Table 18). Out of the 87,767 persons in the district, 67,872 reside in municipalities and CDPs. The remaining 19,895 reside in unincorporated areas.



**Figure 8 – House Illustrative Plan A District 24**

**Table 18 - North Carolina State House District 24's Top 10 Populated Census Places**

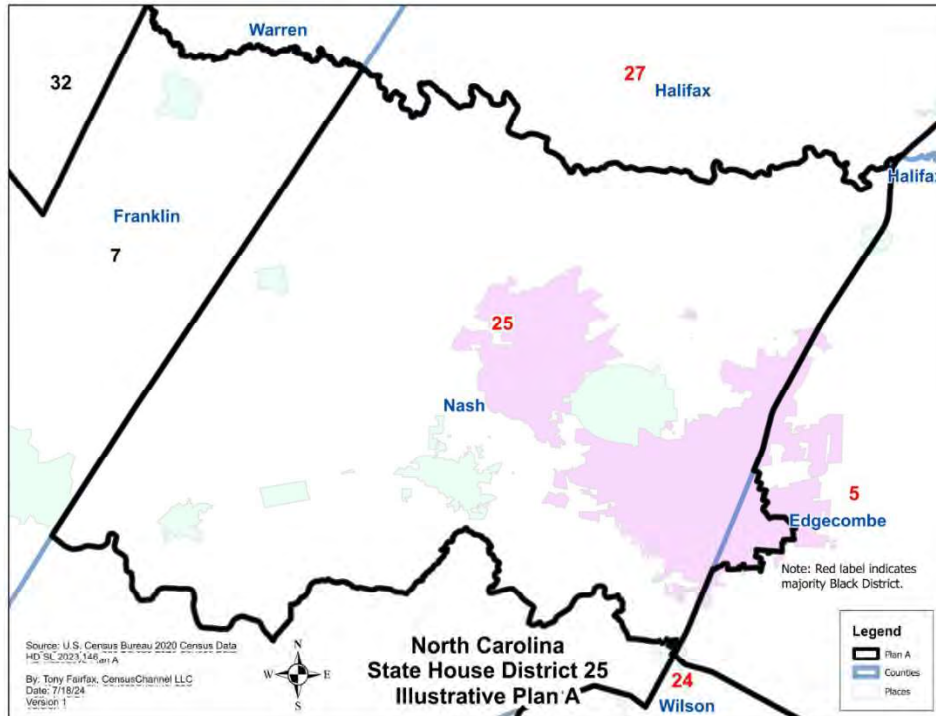
| Census Places                          | TTLPop | %       |
|--|--------|---------|
| Wilson City                            | 37,163 | 77.66%  |
| Greenville City                        | 22,585 | 25.81%  |
| Farmville Town                         | 4,461  | 100.00% |
| Elm City Town                          | 1,218  | 100.00% |
| Stantonsburg Town                      | 762    | 100.00% |
| Bell Arthur CDP                        | 477    | 100.00% |
| Sharpsburg Town                        | 421    | 24.81%  |
| Fountain Town                          | 385    | 100.00% |
| Saratoga Town                          | 353    | 100.00% |
| Falkland Town                          | 47     | 100.00% |
| Total Population of District 24 Places | 67,872 |         |

Source: U.S. Census Bureau 2020 Census Data; Maptitude Report Data

69. Once again, the counties of Pitt and Wilson possess socioeconomic commonalities. For example, according to the 2022 5-Yr ACS, Pitt and Wilson counties are in the bottom quintiles of the state for high school degree or greater and median household income (see Appendix E).

G. House Illustrative Plan A - District 25

70. House Illustrative Plan A's District 25 consists of two counties, Edgecombe and Nash (see Figure 9). The largest city within HD 25 is Rocky Mount with 48,604 persons (see Table 19). The portion of Edgecombe contained within the district encompasses additional areas of Rocky Mount. Out of the 82,701 persons in the district, 60,847 reside in municipalities and CDPs. The remaining 21,854 reside in unincorporated areas.



**Figure 9 – House Illustrative Plan A District 25**

**Table 19 - North Carolina State House District 25's Census Places**

| Census Places                          | TTLPop | %       |
|--|--------|---------|
| Rocky Mount City                       | 48,604 | 89.44%  |
| Nashville Town                         | 5,632  | 100.00% |
| Red Oak Town                           | 3,342  | 100.00% |
| Spring Hope Town                       | 1,309  | 100.00% |
| Dortches Town                          | 1,082  | 100.00% |
| Whitakers Town                         | 337    | 53.75%  |
| Momeyer Town                           | 277    | 100.00% |
| Castalia Town                          | 264    | 100.00% |
| Sharpsburg Town                        | 0      | 0.00%   |
| Total Population of District 25 Places | 60,847 |         |

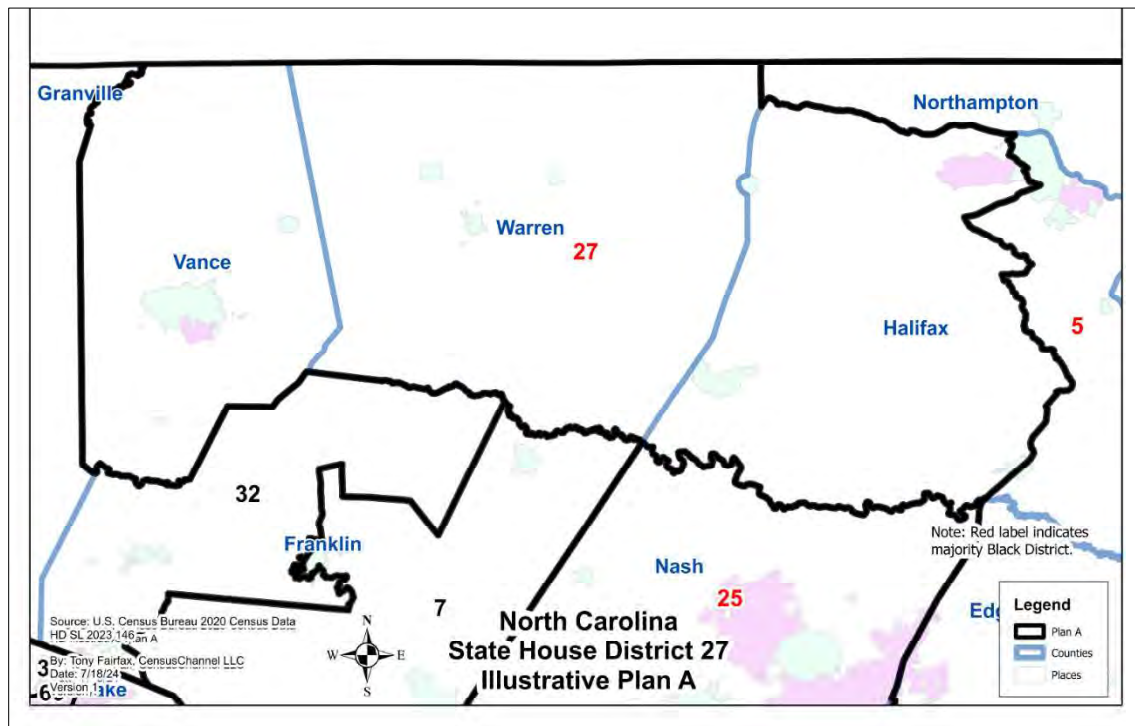
Source: U.S. Census Bureau 2020 Census Data; Maptitude Report Data



71. Once again, the counties of Pitt and Wilson possess socioeconomic commonalities. For example, according to the 2022 5-Yr ACS, Pitt and Wilson counties are in the bottom quintiles of the state for high school degree or greater and median household income (see Appendix E).

H. House Illustrative Plan A - District 27

72. House Illustrative Plan A's District 27 is located at the northern state border. The district encompasses three counties, Halifax, Vance, and Warren (see Figure 10). Vance and Warren are wholly contained within HD 27. The largest city within HD 27 is Henderson with 15,060 persons (see Table 20). Out of the 82,939 persons in the district, 24,764 reside in municipalities and CDPs. The remaining 58,175 reside in unincorporated areas.



**Figure 10 – House Illustrative Plan A District 27**

**Table 20 - House Illustrative Plan A District 27's Top 10 Populated Census Places**

| Census Places                          | TTLPop | %       |
|--|--------|---------|
| Henderson City                         | 15,060 | 100.00% |
| South Rosemary CDP                     | 2,753  | 100.00% |
| Roanoke Rapids City                    | 1,696  | 11.14%  |
| South Henderson CDP                    | 988    | 100.00% |
| Enfield Town                           | 976    | 52.33%  |
| Norlina Town                           | 920    | 100.00% |
| Warrenton Town                         | 851    | 100.00% |
| Hollister CDP                          | 618    | 100.00% |
| Littleton Town                         | 559    | 100.00% |
| Kittrell Town                          | 132    | 100.00% |
| Total Population of District 27 Places | 24,764 |         |

Source: U.S. Census Bureau 2020 Census Data; Maptitude Report Data

**I. House Illustrative Plan A Redistricting Criteria**

**Introduction**

73. House Illustrative Plan A performs well when reviewing the redistricting criteria established by the NCGA.

**Equal Population**

74. House Illustrative Plan A satisfies the one person-one vote requirement of equal population. The overall population deviation is identical to the House Enacted Plan, 9.89% (See Appendix D). The 9.89% deviation is within the acceptable overall range for state legislative district's NCGA redistricting criteria.

**Contiguity**

75. House Illustrative Plan A and the House Enacted Plan are both contiguous.

**Compactness**

76. Using two compactness measures, Reock and Polsby-Popper, House Illustrative Plan A is similarly compact as the House Enacted Plan. A detailed analysis of House Illustrative Plan A's compactness can be found in the *Gingles I* Analysis section below.

**Minimize Political Subdivision Splits**

77. House Illustrative Plan A contains 44 county splits and five VTDs splits. The House Enacted Plan has 36 county splits and 6 VTD splits. The House Enacted Plan



performs somewhat better reviewing county splits while House Illustrative Plan A performs better analyzing VTD splits.

#### Community Consideration (Communities of Interest)

78. House Illustrative Plan A splits 141 Census Places while the House Enacted Plan splits 132. The Illustrative Plan splits 322 landmark areas while the House Enacted Plan splits 330. In addition, all of the northeast majority Black districts were developed by combining counties that contained similar socioeconomic attributes or communities of interest (see Table 8).

#### J. House Illustrative Plan A - Satisfying *Gingles*' Sufficiently Large Component

79. The first component of the precondition of *Gingles* requires demonstrating that one or more majority-minority districts can be developed in which the minority population is “sufficiently large” to constitute a majority.<sup>26</sup> In the context of this analysis, this means showing the creation of two or more Majority Black congressional districts within the state of North Carolina. The term “majority” has been reaffirmed to mean greater than 50% VAP and in many cases 50% CVAP for the minority population within the district.<sup>27</sup>

80. The Illustrative Plan A includes six Majority Black districts (using VAP and CVAP<sup>28</sup>), within the northeastern portion of North Carolina (see Tables 21 & 22). The resulting demographic data for the Illustrative Plans demonstrates that the numerosity requirement for the first *Gingles* precondition has been satisfied. In other words, the North Carolina state house map can contain six districts in the northeastern part of the state with a Majority Black population measured by both APBVAP and APBCVAP. APBCVAP reflects the “Any Part Black” used for Total and VAP. However, APBVAP includes Not Hispanic Black Alone plus Not Hispanic Black and White combined plus Not Hispanic Black and American Indian combined CVAP.

81. The Illustrative Plan’s Majority Black districts also adhere to traditional and state redistricting criteria relating to house districts, demonstrating that the Black population is sufficiently compact to form the majority in a reasonably configured district, as required by the first *Gingles* precondition.

---

<sup>26</sup> *Thornburg v. Gingles*, 478 U.S. 30, 50-51 (1986).

<sup>27</sup> *Bartlett v. Strickland*, 556 U.S. 1 (2009).

<sup>28</sup> Although many times the focus is on voting age population, the Illustrative Plan has been developed to contain a majority of Black citizen voting age population for each Majority Black district as well.

**Table 21 – House Illustrative Plan A’s NE Majority Black District’s VAP**

| District | VAP    | WVAP   | WVAP % | AP BVAP | AP BVAP % |
|----------|--------|--------|--------|---------|-----------|
| 5        | 66,772 | 29,707 | 44.49% | 33,527  | 50.21%    |
| 12       | 65,912 | 26,483 | 40.18% | 33,216  | 50.39%    |
| 23       | 70,465 | 30,407 | 43.15% | 35,272  | 50.06%    |
| 24       | 67,808 | 26,997 | 39.81% | 34,030  | 50.19%    |
| 25       | 64,999 | 27,812 | 42.79% | 32,881  | 50.59%    |
| 27       | 65,656 | 26,473 | 40.32% | 33,345  | 50.79%    |

Note: WVAP includes Not Hispanic Alone category, APBVAP includes “Any Part” Black (which contains Hispanic Black VAP).

Source: U.S. Census Bureau 2020 Census Data extracted from Maptitude for Redistricting reports

**Table 22 – House Illustrative Plan A’s NE Majority Black Districts CVAP**

| District | CVAP   | WCVAP  | WCVAP % | AP BCVAP | AP BCVAP % |
|----------|--------|--------|---------|----------|------------|
| 5        | 64,834 | 28,707 | 44.28%  | 33,837   | 52.19%     |
| 12       | 62,481 | 25,466 | 40.76%  | 32,875   | 52.62%     |
| 23       | 68,929 | 30,935 | 44.88%  | 34,543   | 50.11%     |
| 24       | 63,706 | 27,433 | 43.06%  | 32,130   | 50.43%     |
| 25       | 63,967 | 28,138 | 43.99%  | 33,315   | 52.08%     |
| 27       | 63,281 | 26,038 | 41.15%  | 33,021   | 52.18%     |

Note: All race data are Not Hispanic Alone categories. HVAP includes all race categories.

APBCVAP included Not Hispanic Black Alone plus Not Hispanic Black and White combined plus Not Hispanic Black and American Indian combined CVAP.

Source: U.S. Census Bureau 2022 5-Year ACS Data extracted from Maptitude for Redistricting reports

82. Reviewing the APBVAP and APBCVAP results for District’s 5, 12, 23, 24, 25, and 27 reveals that these six House districts are Majority Black. The House Enacted Plan contains only two Majority Black districts (HD 23 and 27) in the northeast section of the state (see Appendix D). Thus, the first component of the first precondition of *Gingles* is clearly met with four additional Majority Black districts satisfying the “sufficiently large” element.

K. House Illustrative Plan A – Satisfying *Gingles*’ Geographically Compact Component

83. The second component of the first *Gingles* precondition is to show that the minority population is “geographically compact”. This is shown by demonstrating that the

minority population is compact enough to be drawn into a reasonably configured majority-minority district.

84. Various measures have been developed in order to quantify the compactness of a district and plan. I used two popular measures to determine compactness: Reock and Polsby-Popper. Both of these measures indicate a more compact district as the value moves closer to 1.
85. House Illustrative Plan A's northeast Majority Black districts range from values of 0.32 to 0.50 for Reock, and 0.18 to 0.39 for Polsby-Popper (see Table 23). Viewing the compactness measures of a particular plan itself provides some context to the compactness of the plan. However, a comparative analysis with one or more plans is desired when determining whether a plan is sufficiently compact. Preferably, a plan should be compared to a previously enacted plan that has been approved.
86. One of the ways of comparing compactness between different plans is to compare the mean or average of the measures. The overall mean compactness measures for the entire plan are 0.43 for Reock and 0.34 for Polsby Popper. The House Enacted Plan's means are 0.44 for Reock and 0.35 for Polsby Popper. Thus, reviewing the means, House Illustrative Plan A and House Enacted Plan are similarly compact with the differences insignificant.

**Table 23 – House Illustrative Plan A’s Compactness Comparison to House Enacted Plan**

|                | Plan A |               | House Enacted |               |                 |              |
|----------------|--------|---------------|---------------|---------------|-----------------|--------------|
|                | Reock  | Polsby-Popper | Reock         | Polsby-Popper | Best            | Best         |
| Sum            | N/A    | N/A           | N/A           | N/A           |                 |              |
| Min            | 0.22   | 0.16          | 0.22          | 0.16          |                 |              |
| Max            | 0.64   | 0.76          | 0.64          | 0.76          |                 |              |
| Mean           | 0.43   | 0.34          | 0.44          | 0.35          | Enacted         | Enacted      |
| Std. Dev.      | 0.08   | 0.11          | 0.08          | 0.11          |                 |              |
| District       | Reock  | Polsby-Popper | Reock         | Polsby-Popper | Best            | Best         |
| 5              | 0.38   | 0.31          | 0.28          | 0.30          | Plan A          | Plan A       |
| 12             | 0.32   | 0.18          | 0.31          | 0.29          | Plan A          | Enacted      |
| 23             | 0.41   | 0.24          | 0.46          | 0.36          | Enacted         | Enacted      |
| 24             | 0.35   | 0.29          | 0.56          | 0.60          | Enacted         | Enacted      |
| 25             | 0.49   | 0.34          | 0.40          | 0.45          | Plan A          | Enacted      |
| 27             | 0.50   | 0.39          | 0.44          | 0.35          | Plan A          | Plan A       |
|                |        |               |               |               |                 |              |
|                |        |               |               |               | <b>TTLReock</b> | <b>TTLPP</b> |
| <b>Plan A</b>  |        |               |               |               | <b>4</b>        | <b>2</b>     |
| <b>Enacted</b> |        |               |               |               | <b>2</b>        | <b>4</b>     |
| <b>Equal</b>   |        |               |               |               | <b>0</b>        | <b>0</b>     |

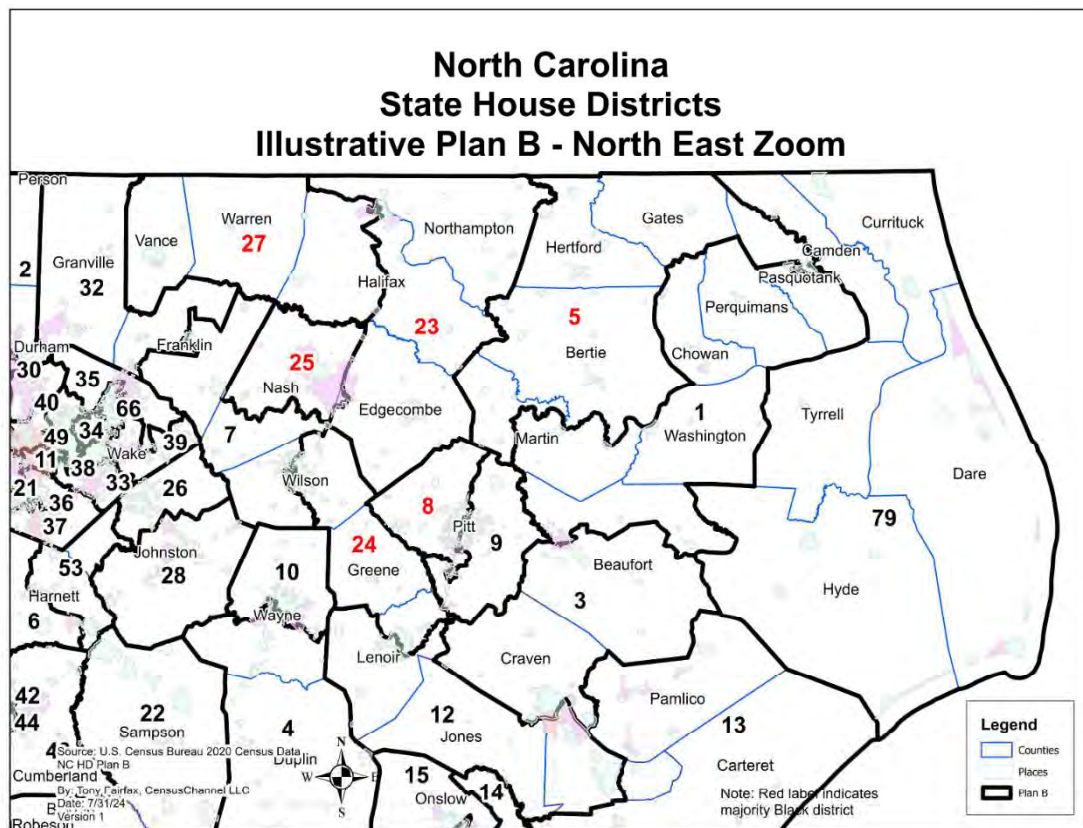
Source: Illustrative Plan A and House Enacted Plan Maptitude Compactness report.

87. When analyzing House Illustrative Plan A’s Majority Black districts on a district by districts basis, four of the six districts perform better than the House Enacted Plan’s corresponding district using Reock. For Polsby-Popper, the House Enacted Plan performs better in four of the six corresponding districts. (see Table 23). When analyzing all of the districts using Reock, Illustrative Plan A performs better in six districts while the House Enacted Plan performs better in ten districts (see Appendix D). There were 104 districts that performed the same using Reock. Using Polsby-Popper the Illustrative Plan performs better in six districts while the House Enacted Plan performs better in nine districts. There were 105 districts that performed the same using Polsby-Popper.
88. Using a third method when analyzing House Illustrative Plan A’s Majority Black districts, all of the districts perform better than the minimum compactness measure in the House Enacted Plan. Illustrative Plan A’s northeast Majority Black districts range from values of 0.32 to 0.50 for Reock, and 0.18 to 0.39 for Polsby-Popper. The House Enacted Plan’s minimum compactness measures are 0.22 for Reock and 0.16 for Polsby-Popper. Thus, all Illustrative Plan A’s Majority Black districts are more compact than the least compact districts in the House Enacted Plan.

89. Reviewing the mean, the district-by-district, and minimum compactness analyses, Illustrative Plan A performs similarly, equally or better than the House Enacted Plan. Thus, the second component of the first precondition of *Gingles I* has been satisfied.

L. House Illustrative Plan B

90. Figure 11 presents the northeast section of House Illustrative Plan B. Similar to House Illustrative Plan A, House Illustrative Plan B also contains six majority Black house districts including HD 5, 8, 23, 24, 25, and 27. The House Enacted Plan in the northeast section of North Carolina contains two majority Black districts, HD 23 and HD 27 (see Appendix D). House Illustrative Plan B closely aligns itself with House Illustrative Plan A. As House Illustrative Plan B's HD 5, 23, 25, and 27 are identical to the districts in Illustrative Plan A, this section will focus on HD 8 and HD 24.

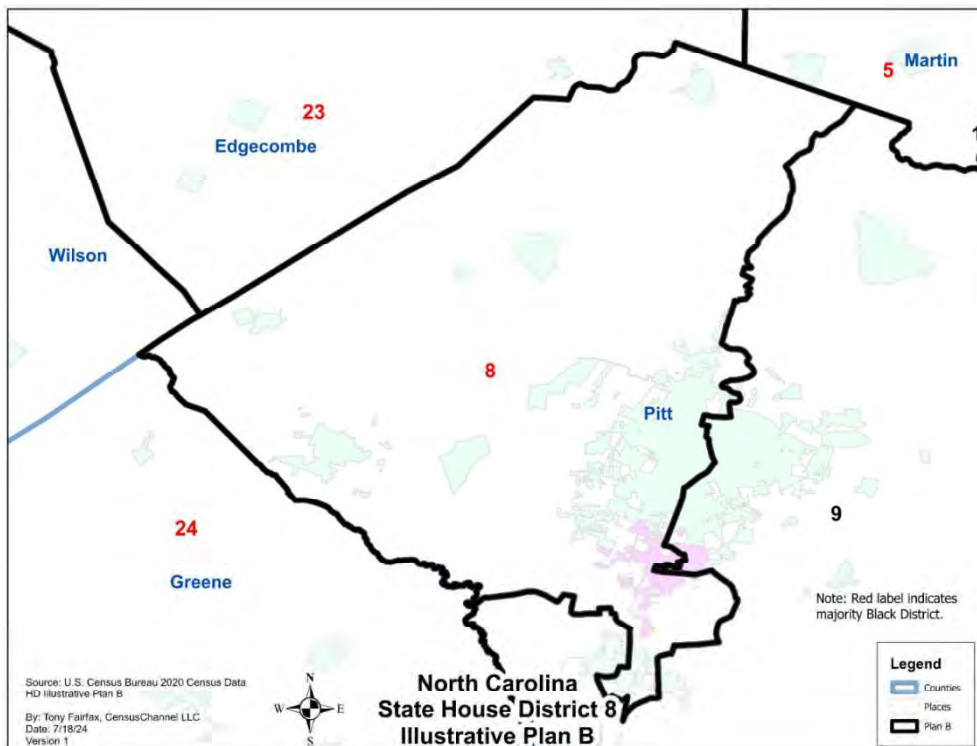


**Figure 11 – House Illustrative Plan B for Northeast Districts**

91. House Illustrative Plan B retains the configuration of 106 Districts from the 2023 Enacted House Plan. For this plan, I used the cluster option (Duke\_House 03) used for the 2023 Enacted House Plan, and my plan only alters eight cluster groupings from this option, all in the eastern part of the state.

M. House Illustrative Plan B - District 8

92. House Illustrative Plan B's District 8's is wholly contained within Pitt County (see Figure 12). The largest city within HD 8 is Greenville with 44,316 persons, which is over half of the district's population (see Table 24). Out of the 82,772 persons in the district, 60,854 reside in municipalities and CDPs. The remaining 21,918 reside in unincorporated areas.



**Figure 12 – House Illustrative Plan B District 8**

**Table 24 - North Carolina State House District 8's Census Places**

| Census Places                         | TTLPop | %       |
|---------------------------------------|--------|---------|
| Greenville City                       | 44,316 | 50.63%  |
| Winterville Town                      | 6,982  | 66.74%  |
| Farmville Town                        | 4,461  | 100.00% |
| Ayden Town                            | 2,498  | 50.19%  |
| Bethel Town                           | 1,373  | 100.00% |
| Bell Arthur CDP                       | 477    | 100.00% |
| Fountain Town                         | 385    | 100.00% |
| Belvoir CDP                           | 315    | 100.00% |
| Falkland Town                         | 47     | 100.00% |
| Total Population of District 8 Places | 60,854 |         |

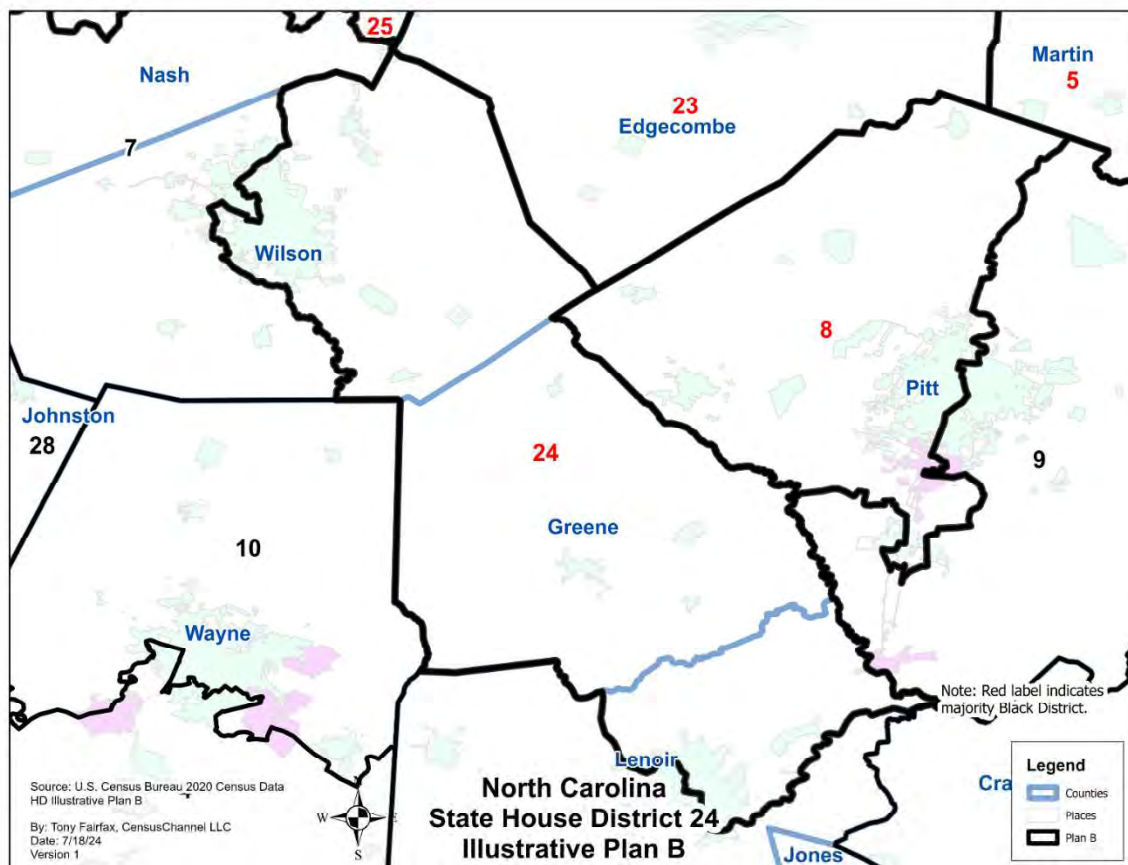
Source: U.S. Census Bureau 2020 Census Data; Maptitude Report Data



93. One of the goals of House Illustrative Plan B was to create two wholly contained HDs within Pitt County. HD 8 and 9 achieved this goal by creating two reasonably compact districts with acceptable population deviations. In addition, all of the census places are wholly contained within either HD 8 or 9 with the exception of three (Greenville, Winterville, and Ayden)

N. House Illustrative Plan B - District 24

94. House Illustrative Plan B's District 24 encompasses three counties, Greene, Lenoir, and Wilson (see Figure 13). Similar to Illustrative Plan A, the largest city within HD 24 is Wilson with 35,283 persons (see Table 25). Out of the 89,984 persons in the district, 55,273 reside in municipalities and CDPs. The remaining 34,711 reside in unincorporated areas.



**Figure 13 – House Illustrative Plan B District 24**



**Table 25 - North Carolina State House District 24's Top 10 Populated Census Places**

| Census Places                          | TTLPop | %       |
|--|--------|---------|
| Wilson City                            | 35,283 | 73.74%  |
| Kinston City                           | 13,369 | 67.18%  |
| Snow Hill Town                         | 1,481  | 100.00% |
| Maury CDP                              | 1,404  | 100.00% |
| Elm City Town                          | 1,218  | 100.00% |
| Stantonsburg Town                      | 762    | 100.00% |
| Sharpsburg Town                        | 421    | 24.81%  |
| Hookerton Town                         | 413    | 100.00% |
| Saratoga Town                          | 353    | 100.00% |
| Graingers CDP                          | 229    | 100.00% |
| Total Population of District 24 Places | 55,273 |         |

Source: U.S. Census Bureau 2020 Census Data; Maptitude Report Data

95. Once again, the counties of Greene, Lenoir, and Wilson possess socioeconomic commonalities. For example, according to the 2022 5-Yr ACS, Greene, Lenoir, and Wilson counties are in the bottom quintiles of the state for high school degree or greater and median household income (see Appendix E).

O. House Illustrative Plan B Redistricting Criteria

Introduction

96. House Illustrative Plan B performs well when reviewing the redistricting criteria established by the NCGA.

Equal Population

97. House Illustrative Plan B satisfies the one person-one vote requirement of equal population. As with House Illustrative Plan B, the overall population deviation is 9.90% which is an insignificantly .01% higher than the House Enacted Plan, 9.89% (See Appendix D). Both the Illustrative Plan B and the House Enacted Plan's deviation are within the acceptable overall range for state legislative district's NCGA redistricting criteria.

Contiguity

98. House Illustrative Plan B and the House Enacted Plan are both contiguous.

### Compactness

99. Using two compactness measures, Reock and Polsby-Popper, House Illustrative Plan B is similarly compact as the House Enacted Plan. A detailed analysis of House Illustrative Plan B's compactness can be found in the *Gingles I* Analysis section below.

### Minimize Political Subdivision Splits

100. Illustrative Plan B contains 42 county splits and ten VTDs splits. The House Enacted Plan has 36 county splits and 6 VTD splits. The House Enacted Plan performs somewhat better reviewing county and VTD splits.

### Community Consideration (Communities of Interest)

101. House Illustrative Plan B splits 143 Census Places while the House Enacted Plan splits 132. The Illustrative Plan splits 326 landmark areas while the House Enacted Plan splits 330. In addition, all of the northeast majority Black districts were developed by combining counties that contained similar socioeconomic attributes or communities of interest (see Table 8). House Illustrative Plan B performs better in regard to COI using landmark data.

### P. House Illustrative Plan B: Satisfying *Gingles*' Sufficiently Large Component

102. Illustrative Plan B include six Majority Black districts (using VAP and CVAP<sup>29</sup>), within the northeastern portion of North Carolina (see Tables 26 & 27). The resulting demographic data for the Illustrative Plans demonstrates that the numerosity requirement of the first *Gingles* precondition has been satisfied. In other words, the North Carolina House map can contain six districts with a Majority Black population measured by both APBVAP and APBCVAP. APBCVAP reflects the "Any Part Black" used for Total and VAP.

103. The House Illustrative Plan B's Majority Black districts also adhere to traditional and state redistricting criteria relating to House districts, demonstrating that the Black population is sufficiently compact to form the majority in a reasonably configured district, as required by the first *Gingles* precondition.

---

<sup>29</sup> Although many times the focus is on voting age population, the Illustrative Plan has been developed to contain a majority of Black citizen voting age population for each Majority Black district as well.

**Table 26 – House Illustrative Plan B’s NE Majority Black District’s Voting Age Population**

| District | VAP    | WVAP   | WVAP % | AP BVAP | AP BVAP % |
|----------|--------|--------|--------|---------|-----------|
| 5        | 67,148 | 28,886 | 43.02% | 33,631  | 50.08%    |
| 8        | 62,666 | 25,288 | 40.35% | 31,339  | 50.01%    |
| 23       | 66,954 | 29,355 | 43.84% | 34,078  | 50.90%    |
| 24       | 70,507 | 27,604 | 39.15% | 35,490  | 50.34%    |
| 25       | 64,999 | 27,812 | 42.79% | 32,881  | 50.59%    |
| 27       | 65,474 | 26,825 | 40.97% | 32,794  | 50.09%    |

Note: WVAP includes Not Hispanic Alone category, APBVAP includes “Any Part” Black (which contains Hispanic Black VAP).

Source: U.S. Census Bureau 2020 Census Data extracted from Maptitude for Redistricting reports

**Table 27 – House Illustrative Plan B’s NE Majority Black Districts CVAP**

| District | CVAP   | WCVAP  | WCVAP % | AP BCVAP | AP BCVAP % |
|----------|--------|--------|---------|----------|------------|
| 5        | 65,792 | 29,606 | 45.00%  | 33,127   | 50.35%     |
| 8        | 58,266 | 26,151 | 44.88%  | 29,269   | 50.23%     |
| 23       | 65,450 | 28,438 | 43.45%  | 34,811   | 53.19%     |
| 24       | 66,454 | 26,486 | 39.86%  | 34,996   | 52.66%     |
| 25       | 63,967 | 28,138 | 43.99%  | 33,315   | 52.08%     |
| 27       | 62,665 | 26,307 | 41.98%  | 32,047   | 51.14%     |

Note: All race data are Not Hispanic Alone categories. HVAP includes all race categories.

APBCVAP included Not Hispanic Black Alone plus Not Hispanic Black and White combined plus Not Hispanic Black and American Indian combined CVAP.

Source: U.S. Census Bureau 2022 5-Year ACS Data extracted from Maptitude for Redistricting reports

104. Reviewing the APBVAP and APBCVAP results for District’s 5, 8, 23, 24, 25, and 27 reveals that these six House districts are Majority Black. The House Enacted Plan contains only two Majority Black districts (HD 23 and 27) in the northeast section of the state (see Appendix D). Thus, the first component of the first precondition of *Gingles* is clearly met with four additional Majority Black districts satisfying the “sufficiently large” element.

Q. House Illustrative Plan B – Satisfying *Gingles*’ Geographically Compact Component

105. The second component of the first *Gingles* precondition is to show that the minority population is “geographically compact”. This is shown by demonstrating

that the minority population is compact enough to be drawn into a reasonably configured majority-minority district.

106. Various measures have been developed in order to quantify the compactness of a district and plan. I used two of the most popular measures to determine compactness: Reock and Polsby-Popper. Both of these measures indicate a more compact district as the value moves closer to 1.

107. Illustrative Plan B's northeast Majority Black districts range from values of 0.34 to 0.50 for Reock, and 0.22 to 0.37 for Polsby-Popper (see Table 28). Viewing the compactness measures of a particular plan itself provides some context to the compactness of the plan. However, a comparative analysis with one or more plans is desired when determining whether a plan is sufficiently compact. Preferably, a plan should be compared to a previously enacted plan that has been approved.

**Table 28 – House Illustrative Plan B's Compactness Comparison to House Enacted Plan**

|                 | <b>Plan B</b> |                      | <b>House Enacted</b> |                      |                 |              |
|-----------------|---------------|----------------------|----------------------|----------------------|-----------------|--------------|
|                 | <b>Reock</b>  | <b>Polsby-Popper</b> | <b>Reock</b>         | <b>Polsby-Popper</b> | <b>Best</b>     | <b>Best</b>  |
| Sum             | N/A           | N/A                  | N/A                  | N/A                  |                 |              |
| Min             | 0.22          | 0.16                 | 0.22                 | 0.16                 |                 |              |
| Max             | 0.64          | 0.76                 | 0.64                 | 0.76                 |                 |              |
| Mean            | 0.43          | 0.35                 | 0.44                 | 0.35                 | Enacted         | Equal        |
| Std. Dev.       | 0.08          | 0.11                 | 0.08                 | 0.11                 |                 |              |
| <b>District</b> | <b>Reock</b>  | <b>Polsby-Popper</b> | <b>Reock</b>         | <b>Polsby-Popper</b> | <b>Best</b>     | <b>Best</b>  |
| 5               | 0.41          | 0.22                 | 0.28                 | 0.30                 | Plan B          | Enacted      |
| 8               | 0.47          | 0.37                 | 0.51                 | 0.36                 | Enacted         | Plan B       |
| 23              | 0.38          | 0.30                 | 0.46                 | 0.36                 | Enacted         | Enacted      |
| 24              | 0.34          | 0.28                 | 0.56                 | 0.60                 | Enacted         | Enacted      |
| 25              | 0.49          | 0.34                 | 0.40                 | 0.45                 | Plan B          | Enacted      |
| 27              | 0.50          | 0.36                 | 0.44                 | 0.35                 | Plan B          | Plan B       |
|                 |               |                      |                      |                      |                 |              |
|                 |               |                      |                      |                      | <b>TTLReock</b> | <b>TTLPP</b> |
|                 |               |                      |                      | Plan B               | 3               | 2            |
|                 |               |                      |                      | Enacted              | 3               | 4            |
|                 |               |                      |                      | Equal                | 0               | 0            |

Source: Illustrative Plan B and House Enacted Plan Maptitude Compactness report.

108. The overall mean compactness measures for the entire plan are 0.43 for Reock and 0.35 for Polsby Popper. The House Enacted Plan's means are 0.44 for Reock and 0.35 for Polsby Popper. Thus, once again reviewing the means, Illustrative Plan B and House Enacted Plan are similarly compact with the differences insignificant.

109. When analyzing House Illustrative Plan B's Majority Black districts on a district by districts basis, three of the six districts perform better than the House Enacted Plan's corresponding district using Reock. For Polsby-Popper, the House Enacted Plan performs better in two of the six corresponding districts. (see Table 28). When analyzing all of the districts using Reock, Illustrative Plan B performs better in five districts while the House Enacted Plan performs better in nine districts (see Appendix D). There were 106 districts that performed the same using Reock. Using Polsby-Popper, the Illustrative Plan performs better in five districts while the House Enacted Plan performs better in nine districts. There were 106 districts that performed the same using Polsby-Popper.
110. When analyzing Illustrative Plan B's Majority Black districts using the minimum compactness scores, all of the districts perform better than the minimum compactness measure in the House Enacted Plan. Illustrative Plan B's northeast Majority Black districts range from values of 0.34 to 0.50 for Reock, and 0.22 to 0.37 for Polsby-Popper. The Enacted Plan's minimum compactness measures are 0.22 for Reock and 0.16 for Polsby-Popper. Thus, all Illustrative Plan B's Majority Black districts are more compact than the least compact districts in the House Enacted Plan.
111. Reviewing the mean, the district-by-district, and minimum compactness analyses, the Illustrative Plan B performs similarly, equally, or better than the House Enacted Plan. Thus, the second component of the first precondition of *Gingles I*, has been satisfied.

## **X. Senate Illustrative Plan A**

### **A. Senate Illustrative Plan A Introduction**

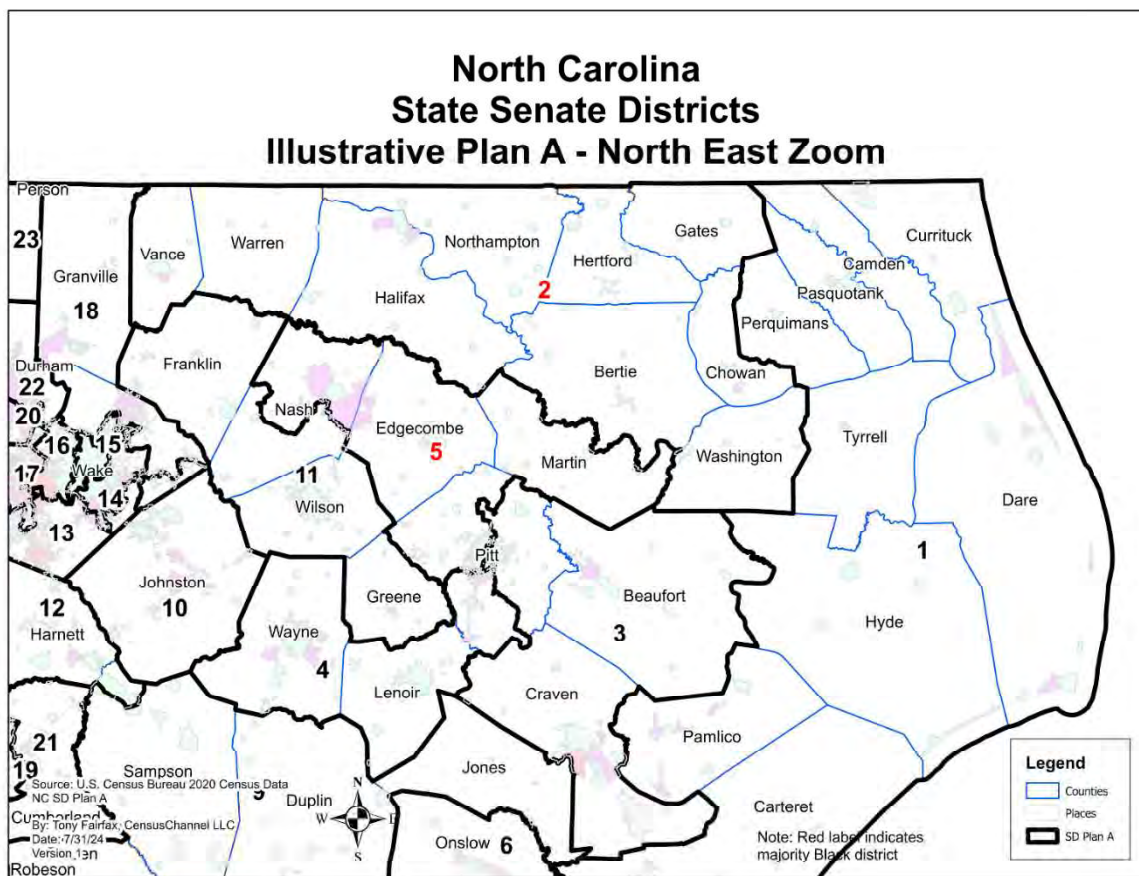
112. Senate Illustrative Plan A was developed using federal and North Carolina state redistricting criteria. Figure 14 as well as the associated reports show that the senate Illustrative Plan A adhere to state and federal laws as well as traditional redistricting criteria. In addition to these redistricting criteria, the plan's maps and data reports summarized below also show that North Carolina's Black population is sufficiently large and geographically compact to constitute a majority in two single-member districts, thereby satisfying the first precondition of *Gingles*.<sup>30</sup>
113. The plan development decisions I made followed the state's redistricting criteria, with one important exception. I considered racial data during the development of the plans, as is appropriate in the context of Section 2 of the Voting Rights Act (VRA). My consideration of race data during the development process was balanced with all

---

<sup>30</sup>See *Thornburg v. Gingles*, 478 U.S. 30, 50-51 (1986). The first precondition of *Gingles* requires demonstration that the minority population is sufficiently numerous and geographically compact to enable the creation of at least one single-member majority-minority district.

the other redistricting considerations outlined above, and I ensure that race did not predominate.

114. To develop the Senate Illustrative plans, I used the Senate Enacted Plan as a starting point. Forty-four of the 50 state senate districts in the Illustrative Plan A and 45 in Illustrative Plan B are identical to those in the Senate Enacted Plan (see Appendix D). The Senate Illustrative Plans show that it is possible to draw a plan with additional majority Black state senate districts, particularly in the northeast region of the state, while adhering to the redistricting criteria of compactness, contiguity, respect for political subdivisions, and factors identifying communities of interest. The Illustrative Plans are only intended to demonstrate that a plan can be created that adheres to traditional redistricting criteria and satisfies the first precondition of *Gingles*.<sup>31</sup>



**Figure 14 – Senate Illustrative Plan A for Northeast Districts**

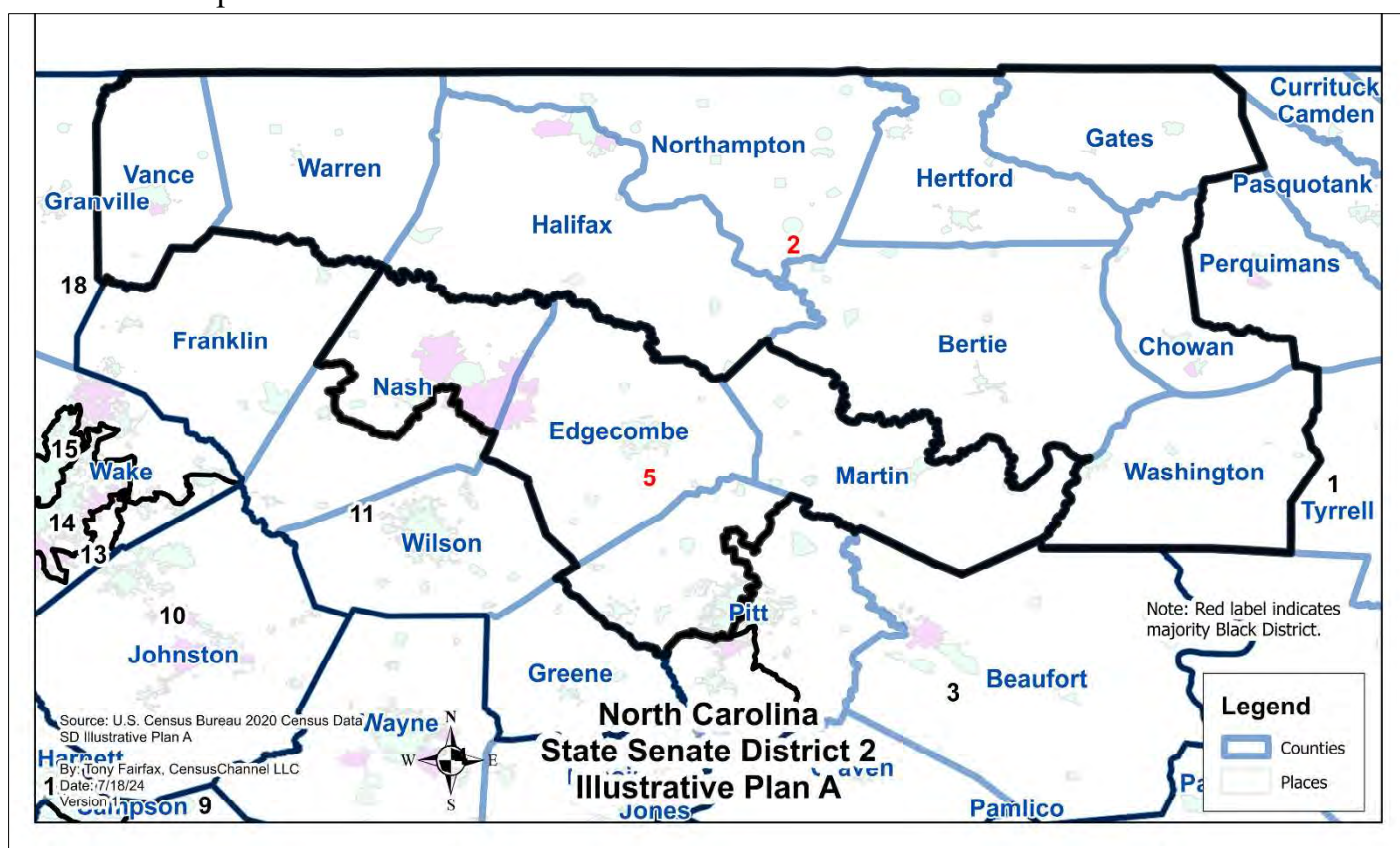
<sup>31</sup> It should be understood that many variations of this plan could be generated that incorporate additional political and community desires and continue to adhere to federal and state redistricting criteria and contain two majority Black districts to satisfy the first precondition of *Gingles*.



115. Figure 14 presents the northeast section of Senate Illustrative Plan A. Senate Illustrative Plan A contains two majority Black Seante districts, SD 2 and SD 5. The Senate Enacted Plan in the northeast section of North Carolina contains no majority Black districts (see Appendix D).

B. Illustrative Plan A – Senate District 2

116. Senate Illustrative Plan A's District 2 is situated on the northern border of the state. Senate District 2 consists of the whole counties of Bertie, Chowan, Gates, Halifax, Hertford, Northampton, Vance, Warren, and Washington (see Figure 15). The largest city within SD 2 is Roanoke Rapids with 15,229 persons with the city of Henderson following closely behind at 15,060 (see Table 29). All of its cities, towns, and CDPs are wholly contained within the district. Out of the 201,988 persons in the district, 73,797 reside in municipalities and CDPs. The remaining 128,191 reside in unincorporated areas.



**Figure 15 – Senate Illustrative Plan A - District 2**

117. Senate Illustrative Plan A retains the configuration of 44 Districts from the 2023 Enacted Senate Plan. For this plan, I used the cluster option (Duke\_Senate04) used for the 2023 Enacted Senate Plan, and my plan only alters six cluster groupings from this option, all in the eastern part of the state.



**Table 29 - Senate Illustrative Plan A - District 2's Top 10 Census Places**

| Census Places                         | TTLPop | %       |
|---------------------------------------|--------|---------|
| Roanoke Rapids City                   | 15,229 | 100.00% |
| Henderson City                        | 15,060 | 100.00% |
| Ahoskie Town                          | 4,891  | 100.00% |
| Edenton Town                          | 4,460  | 100.00% |
| Windsor Town                          | 3,582  | 100.00% |
| Plymouth Town                         | 3,320  | 100.00% |
| South Rosemary CDP                    | 2,753  | 100.00% |
| Murfreesboro Town                     | 2,619  | 100.00% |
| Enfield Town                          | 1,865  | 100.00% |
| Scotland Neck Town                    | 1,640  | 100.00% |
| Total Population of District 2 Places | 73,797 |         |

Source: U.S. Census Bureau 2020 Census Data; Maptitude Report Data

118. The 9 counties of SD 2 possess socioeconomic commonalities. For instance, according to the 2022 5-Yr ACS, Bertie, Chowan, Halifax, Hertford, Northampton, Vance, Warren, and Washington counties are in the bottom two quintiles of the state for persons with high school degrees or greater and median household income (see Appendix E).

C. Senate Illustrative Plan A - District 5

119. Illustrative Plan A's Senate District 5 encompasses four counties, Edgecombe, Martin, Nash, and Pitt (see Figure 16). The largest city within SD 5 is Rocky Mount with 52,606 persons (see Table 30). Out of the 201,261 persons in the district, 135,931 reside in municipalities and CDPs. The remaining 65,330 reside in unincorporated areas.

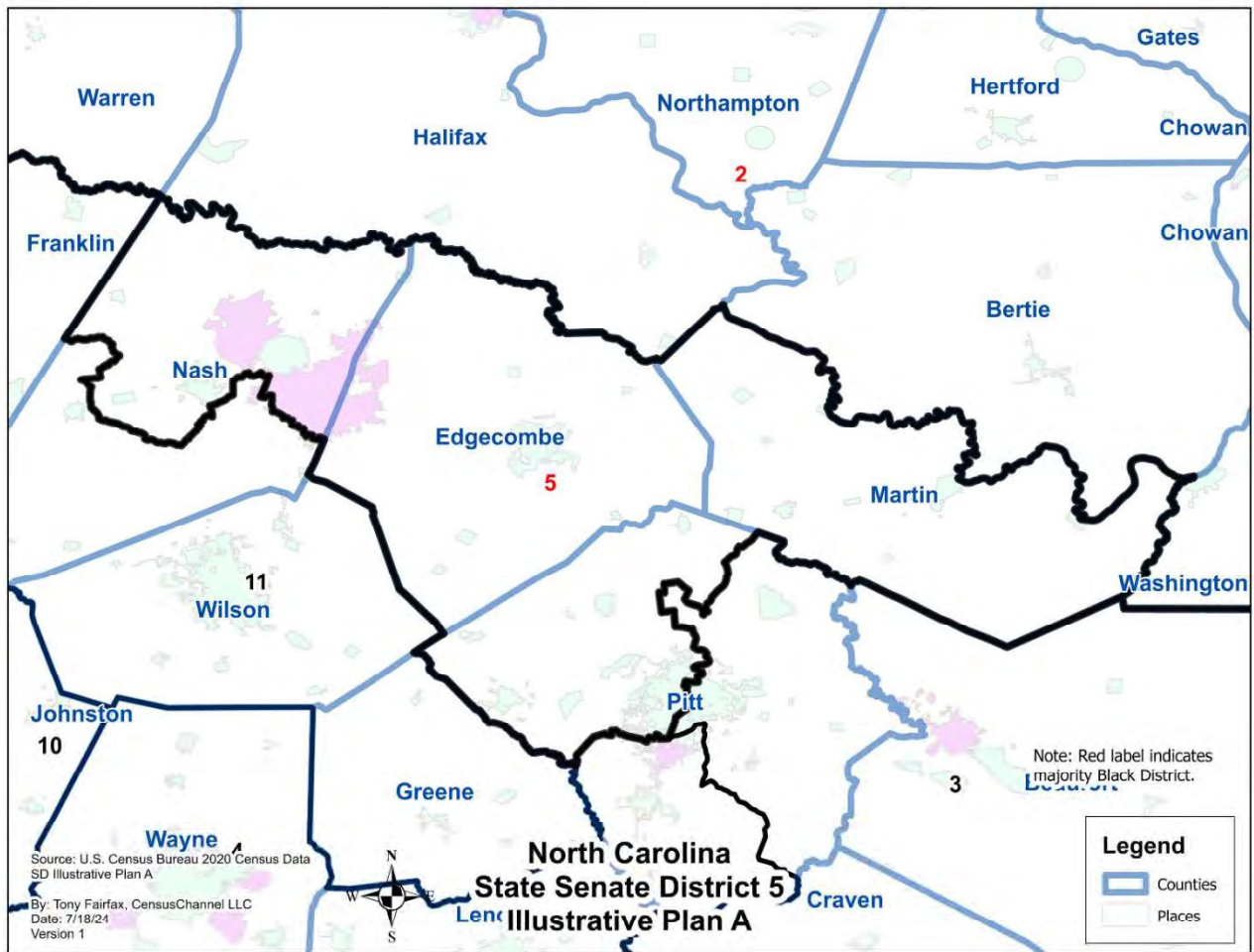


Figure 16 – Senate Illustrative Plan A - District 5

Table 30 - Senate Illustrative Plan A - District 2's Top 10 Populated Census Places

| Census Places                         | TTLPop  | %       |
|---------------------------------------|---------|---------|
| Rocky Mount City                      | 52,606  | 96.81%  |
| Greenville City                       | 42,854  | 48.96%  |
| Tarboro Town                          | 10,721  | 100.00% |
| Nashville Town                        | 5,632   | 100.00% |
| Williamston Town                      | 5,248   | 100.00% |
| Farmville Town                        | 4,461   | 100.00% |
| Red Oak Town                          | 3,342   | 100.00% |
| Bethel Town                           | 1,373   | 100.00% |
| Robersonville Town                    | 1,269   | 100.00% |
| Princeville Town                      | 1,254   | 100.00% |
| Total Population of District 2 Places | 135,931 |         |

Source: U.S. Census Bureau 2020 Census Data; Maptitude Report Data

120. The counties of Edgecombe, Martin, Nash, and Pitt possess socioeconomic commonalities. For example, according to the 2022 5-Yr ACS, Edgecombe and Martin counties are in the bottom two quintiles of the state for high school degree or greater and median household income (see Appendix E).

D. Senate Illustrative Plan A - Redistricting Criteria

Introduction

121. Senate Illustrative Plan A performs well when reviewing the redistricting criteria established by the NCGA.

Equal Population

122. Senate Illustrative Plan A satisfies the one person-one vote requirement of equal population. The overall population deviation of Senate Illustrative Plan A is 9.99% which is identical to the Senate Enacted Plan (See Appendix D). This deviation is within the acceptable overall range for state legislative district's NCGA House and Senate redistricting criteria.

Contiguity

123. Senate Illustrative Plan A and the Senate Enacted Plan are both contiguous.

Compactness

124. Using two compactness measures, Reock and Polsby-Popper, Senate Illustrative Plan A is as similarly compact as the Senate Enacted Plan. A detailed analysis of Senate Illustrative Plan A's compactness can be found in the *Gingles I* Analysis section below.

Minimize Political Subdivision Splits

125. Senate Illustrative Plan A contains 17 county splits and 12 VTDs splits. The Senate Enacted Plan has 15 county splits and 12 VTD splits. The Senate Enacted Plan performs slightly better reviewing county splits and equal with VTD splits.

Community Consideration (Communities of Interest)

126. Senate Illustrative Plan A splits 79 Census Places while the Senate Enacted Plan splits 79. The Senate Illustrative Plan A splits 246 landmark areas while the Senate Enacted Plan splits 242. In addition, all of the northeast majority Black districts were developed by combining counties that contained similar socioeconomic attributes or communities of interest (see Table 8. Senate Illustrative Plan A performs equally to

the Senate Enacted Plan regarding COI of Census Places, while the Senate Enacted Plan performs slightly better using landmark data.

E. Senate Illustrative Plan A - Satisfying *Gingles*’ Sufficiently Large Component

127. Senate Illustrative Plan A includes two Majority Black districts (using VAP and CVAP<sup>32</sup>), within the northeastern portion of North Carolina (see Tables 31 & 32). The resulting demographic data for the Illustrative Plans demonstrates that the numerosity requirement for the first *Gingles* precondition has been satisfied. In other words, the North Carolina state senate map can contain two districts with a Majority Black population measured by both APBVAP and APBCVAP. APBCVAP reflects the “Any Part Black” used for Total and VAP.

128. The Senate Illustrative Plan A’s Majority Black districts also adhere to traditional and state redistricting criteria relating to state senate districts, demonstrating that the Black population is sufficiently compact to form the majority in a reasonably configured district, as required by the first *Gingles* precondition.

**Table 31 – Senate Illustrative Plan A’s NE Majority Black District’s Voting Age Population**

| District | VAP     | WVAP  | WVAP % | AP BVAP | AP BVAP % |
|----------|---------|-------|--------|---------|-----------|
| 2        | 162,352 | 69877 | 43.04% | 81,583  | 50.25%    |
| 5        | 156,649 | 66089 | 42.19% | 78,900  | 50.37%    |

Note: WVAP includes Not Hispanic Alone category, APBVAP includes “Any Part” Black (which contains Hispanic Black VAP).

Source: U.S. Census Bureau 2020 Census Data extracted from Maptitude for Redistricting reports

**Table 32 – Senate Illustrative Plan A’s NE Majority Black Districts CVAP**

| District | CVAP    | WCVAP  | WCVAP % | AP BCVAP | AP BCVAP % |
|----------|---------|--------|---------|----------|------------|
| 2        | 157,985 | 68,795 | 43.55%  | 81335    | 51.48%     |
| 5        | 150,916 | 67,271 | 44.58%  | 77608    | 51.42%     |

Note: All race data are Not Hispanic Alone categories.

APBCVAP included Not Hispanic Black Alone plus Not Hispanic Black and White combined plus Not Hispanic Black and American Indian combined CVAP.

Source: U.S. Census Bureau 2022 5-Year ACS Data extracted from Maptitude for Redistricting reports

<sup>32</sup> Although many times the focus is on voting age population, the Senate Illustrative Plan has been developed to contain a majority of Black citizen voting age population for each Majority Black district as well.

129. Reviewing the APBVAP and APBCVAP results for Senate Districts 2 and 5 shows that these two Senate districts are Majority Black. The Senate Enacted Plan contains no Majority Black districts in the northeast section of the state (see Appendix D). Thus, the first component of the first precondition of *Gingles* is clearly met with two additional Majority Black districts satisfying the “sufficiently large” element.

F. Senate Illustrative Plan A – Satisfying *Gingles*’ Geographically Compact Component

130. The second component of the first *Gingles* precondition is to show that the minority population is “geographically compact”. This is shown by demonstrating that the minority population is compact enough to be drawn into a reasonably configured majority-minority district.

131. Various measures have been developed in order to quantify the compactness of a district and plan. I used two popular measures to determine compactness: Reock and Polsby-Popper. Both of these measures indicate a more compact district as the value moves closer to 1.

132. Viewing the compactness measures of a particular plan itself provides some context to the compactness of the plan. However, a comparative analysis with one or more plans is desired when determining whether a plan is sufficiently compact. Preferably, a plan should be compared to a previously enacted plan that has been approved.

133. Senate Illustrative Plan A’s two northeast Majority Black districts range from values of 0.31 to 0.33 for Reock, and 0.18 to 0.26 for Polsby-Popper (see Table 33). The overall mean compactness measures for the entire plan are 0.40 for Reock and 0.31 for Polsby Popper. A primary way of comparing compactness between different plans is to compare the mean or average of the measures. The Senate Enacted Plan’s means are 0.40 for Reock and 0.31 for Polsby Popper. Thus, reviewing the means, Senate Illustrative Plan A and Senate Enacted Plan are equally compact.

**Table 33 – Senate Illustrative Plan A’s Compactness Comparison to Senate Enacted Plan**

|                 | <b>Plan A</b> |                      | <b>Senate Enacted</b> |                      |          |         |
|-----------------|---------------|----------------------|-----------------------|----------------------|----------|---------|
|                 | <b>Reock</b>  | <b>Polsby-Popper</b> | <b>Reock</b>          | <b>Polsby-Popper</b> |          |         |
| Sum             | N/A           | N/A                  | N/A                   | N/A                  |          |         |
| Min             | 0.19          | 0.11                 | 0.19                  | 0.10                 |          |         |
| Max             | 0.68          | 0.61                 | 0.68                  | 0.61                 |          |         |
| Mean            | 0.40          | 0.31                 | 0.40                  | 0.31                 | Equal    | Equal   |
| Std. Dev.       | 0.11          | 0.13                 | 0.12                  | 0.13                 |          |         |
| <b>District</b> | <b>Reock</b>  | <b>Polsby-Popper</b> | <b>Reock</b>          | <b>Polsby-Popper</b> |          |         |
| 2               | 0.31          | 0.26                 | 0.23                  | 0.10                 | Plan A   | Plan A  |
| 5               | 0.33          | 0.18                 | 0.40                  | 0.34                 | Enacted  | Enacted |
|                 |               |                      |                       |                      |          |         |
|                 |               |                      |                       |                      | TTLReock | TTLPP   |
| <b>Plan A</b>   |               |                      |                       |                      | 3        | 3       |
| <b>Enacted</b>  |               |                      |                       |                      | 3        | 3       |
| <b>Equal</b>    |               |                      |                       |                      | 44       | 44      |

Source: Senate Illustrative Plan A and Senate Enacted Plan Maptitude Compactness report.

134. When analyzing Senate Illustrative Plan A’s Majority Black districts on a district by districts basis, one of the two districts, SD 2, performs better than the Senate Enacted Plan’s corresponding district using Reock. For Polsby-Popper, the Senate Illustrative Plan A also performs better for SD 2. The Senate Enacted Plan performs better comparing SD 5 for Reock and Polsby-Popper.
135. When analyzing all of the districts using Reock, Senate Illustrative Plan A and the Senate Enacted Plan perform equally with three districts in each performing better than their counterpart (see Appendix D). There were 44 districts that performed the same using Reock and Polsby-Popper.
136. When analyzing Senate Illustrative Plan A’s Majority Black districts using the minimum compactness scores, all of the districts perform better than the minimum compactness measure in the Senate Enacted Plan. Senate Illustrative Plan A’s northeast Majority Black districts range from values of 0.31 to 0.33 for Reock, and 0.18 to 0.26 for Polsby-Popper. The Senate Enacted Plan’s minimum compactness measures are 0.19 for Reock and 0.10 for Polsby-Popper. Thus, all Senate Illustrative Plan A’s Majority Black districts are more compact than the least compact districts in the Senate Enacted Plan.

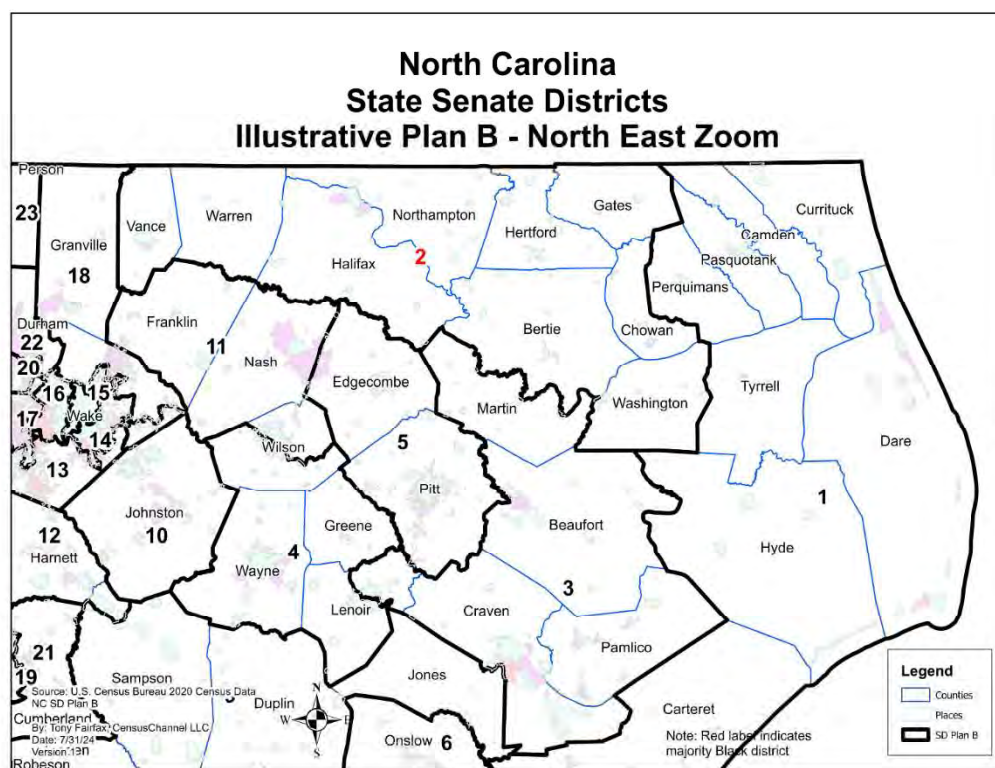


137. Reviewing the mean, the district-by-district, and minimum compactness analyses, Illustrative Plan B performs similarly, equally, or better than the Senate Enacted Plan. Thus, the second component of the first precondition of *Gingles I*, has been satisfied.

## XI. Senate Illustrative Plan B

### A. Senate Illustrative Plan B Introduction

138. I was asked by Plaintiffs' counsel to draw a Senate Plan retaining 2023 Enacted SD 5 while adding a single majority-BVAP Illustrative district in the northeastern part of the state. Consequently, Senate Illustrative Plan B was developed using federal and North Carolina's state redistricting criteria, and retains SD 5 in the 2023 Enacted Plan. Figure 17 as well as the included reports show that the Senate Illustrative Plan B adheres to state and federal laws as well as traditional redistricting criteria. In addition to these redistricting criteria, the plan's maps and data reports summarized below also show that North Carolina's Black population is sufficiently large and geographically compact to constitute a majority in two single-member districts, thereby satisfying the first precondition of *Gingles*.<sup>33</sup>



**Figure 17 – Senate Illustrative Plan B for Northeast Districts**

<sup>33</sup>See *Thornburg v. Gingles*, 478 U.S. 30, 50-51 (1986). The first precondition of *Gingles* requires demonstration that the minority population is sufficiently numerous and geographically compact to enable the creation of at least one single-member majority-minority district.



**Table 35 – Senate Illustrative Plans’ and 2023 Enacted Plans’ Criteria Comparison**

| <b>Criteria</b>  | <b>Senate Plan A</b>  | <b>Senate Plan B</b>  | <b>Enacted Plan</b>   |
|--|-----------------------|-----------------------|-----------------------|
| U.S. Constitution, Alabama Constitution, and the Federal Voting Rights Act - Section 2 ( <i>Gingles</i> Prong 1) | 2 Maj Black NE Region | 1 Maj Black NE Region | 0 Maj Black NE Region |
| Equal Population   | Y<br>(9.99%)          | Y<br>(9.99%)          | Y<br>(9.99%)          |
| Contiguity   | Y                     | Y                     | Y                     |
| Compactness^ - (Reock – Polsby-Popper)<br># District More Compact by Measure:                                    |                       |                       |                       |
| - Plan Mean  | 0.40 - 0.31           | 0.41 - 0.32           | 0.40 - 0.31           |
| - District by District   | 3 - 3                 | 4 of 50               | 3 - 3/ 0 - 0          |
| - Comparing Maj Black Districts  | 1 - 1                 | 1 - 1                 | 1 - 1/ 0 - 0          |
| - Minimum Enacted Plan Values:<br>Compared to 10 Maj Black SDs   | 2 - 2                 | 2 - 2                 | 0 - 0/ 0 - 0          |
| COIs/Political Subdivision Splits  |                       |                       |                       |
| Census Places (cities, towns, CDPs)  | 79                    | 79                    | 79                    |
| - Landmark Areas   | 246                   | 241                   | 242                   |
| - Voting Districts (VTDs)  | 12                    | 12                    | 12                    |
| County Splits  | 17                    | 15                    | 15                    |

Source: Illustrative and Enacted Plans extracted from Maptitude for Redistricting reports

^See the Gingles Analysis section Illustrative Plan Districts - “Geographically Compact” (Compactness Analysis).

\*The compactness and COI/Political Subdivision metrics between the Illustrative Plan A and the 2023 Enacted Plan are extremely close and are not the same but very similar in performance.

### **XIII. Apportionment Analysis**

143. I also analyzed several clusters contained within the 2023 Senate and House Enacted Plans regarding malapportionment of the districts. The analysis started with the recreation of the House and Senate plans using the Maptitude software. Once I recreated the plans, I was able to generate and observe alternative configurations that could be created.

#### **A. Wake County House Districts Cluster**

144. I reviewed the 2023 Enacted Plan population deviations in the Wake County House district cluster. (See Table 36). Wake County wholly contains 13 House districts (SD 37, 41, 34, 66, 21, 38, 11, 40, 36, 39, 33, 49, and 35). The population deviation of the districts ranges from a high of 3.81% to a low of -4.48% with an overall deviation of 8.29%. Wake County’s average ideal population size is extremely close to the state’s at 86,878 (1,129,410 divided by 13 districts) with an average

deviation of -117 or -0.13%. Thus, each HD within the Wake Cluster could have a population deviation as low as -0.13%.

**Table 36 - Wake County, North Carolina House District Population Deviation**

| District        | Population | Ideal Value | Deviation | % Deviation |
|-----------------|------------|-------------|-----------|-------------|
| 37              | 90,307     | 86,995      | 3,312     | 3.81%       |
| 41              | 89,876     | 86,995      | 2,881     | 3.31%       |
| 34              | 89,807     | 86,995      | 2,812     | 3.23%       |
| 66              | 88,717     | 86,995      | 1,722     | 1.98%       |
| 21              | 87,764     | 86,995      | 769       | 0.88%       |
| 38              | 86,444     | 86,995      | -551      | -0.63%      |
| 11              | 86,381     | 86,995      | -614      | -0.71%      |
| 40              | 86,359     | 86,995      | -636      | -0.73%      |
| 36              | 86,038     | 86,995      | -957      | -1.10%      |
| 39              | 85,371     | 86,995      | -1,624    | -1.87%      |
| 33              | 85,001     | 86,995      | -1,994    | -2.29%      |
| 49              | 84,251     | 86,995      | -2,744    | -3.15%      |
| 35              | 83,094     | 86,995      | -3,901    | -4.48%      |
| Cluster Average | 86,878     | 86,995      | -117      | -0.13%      |

Source: North Carolina 2023 Enacted Plan Maptitude Dataview

145. I was able to create and observe multiple options that would allow me to shift one or two VTDs that would bring the district population closer to the ideal population and the overall population deviation closer to zero. Some of the possible VTD movements that I observed would not only result in a lower population deviation, but also make the districts slightly more compact. In addition, the movements would not result in additional splits of political subdivisions (cities and towns) or noticeable communities of interest (CDPs or landmark areas). Finally, all of the movements resulted in contiguous districts.

146. Simple modification could be made to the Wake County cluster which would lower the overall population deviation. Thus, I find no redistricting criteria justification for the Wake County cluster to include a population deviation that is as high as 8.29%.

**B. Forsyth – Stokes House District Cluster**

147. I also reviewed the population deviation in the Forsyth-Stokes House district cluster. (See Table 37). The Forsyth-Stokes cluster wholly contains 5 House districts (SD 71, 75, 72, 74, and 91). The population deviation of the districts ranges from a high of 2.10% to a low of -4.68% with an overall deviation of 6.78%. Forsyth-Stokes Cluster's average ideal population size is 85,422 (427,110 divided by 5 districts) with

an average deviation of -1,573 or -1.81%. Thus, potentially each HD within the Forsyth-Stokes Cluster could have a population deviation as low as -1.81%.

**Table 37 - Forsyth – Stokes Cluster, North Carolina House District Population Deviation**

| District        | Population | Ideal Value | Deviation | % Deviation |
|-----------------|------------|-------------|-----------|-------------|
| 71              | 88,823     | 86,995      | 1,828     | 2.10%       |
| 75              | 87,378     | 86,995      | 383       | 0.44%       |
| 72              | 84,444     | 86,995      | -2,551    | -2.93%      |
| 74              | 83,545     | 86,995      | -3,450    | -3.97%      |
| 91              | 82,920     | 86,995      | -4,075    | -4.68%      |
| Cluster Average | 85,422     | 86,995      | -1,573    | -1.81%      |

Source: North Carolina Enacted Plan Mapitude Dataview

148. Once again, I was able to create and observe several options that would allow me to shift one or two VTDs that would bring the district population closer to the ideal population and the overall population deviation closer to zero. Some of the possible VTD movements that I observed would not only result in a lower population deviation, but also make the districts slightly more compact. In addition, the movements would not result in additional splits of political subdivisions (cities and towns) or noticeable communities of interest (CDPs or landmark areas). Finally, all of the movements resulted in contiguous districts.

149. Simple modification could be made to the Forsyth and Stokes cluster which would lower the overall population deviation. Thus, I find no redistricting criteria justification for the Forsyth and Stokes cluster to include a population deviation that is as high as 6.78%.

**C. Brunswick, New Hanover, and Columbus Senate District Cluster**

150. I also reviewed the population deviation in the Brunswick, New Hanover, and Columbus Senate cluster. The Brunswick, New Hanover, and Columbus cluster wholly contains two Senate districts (SD 7 and 8). (See Table 38). The population deviation of the districts ranges from a high of 2.76% to a low of -4.94% with an overall deviation of 7.70%. Brunswick-New Hanover Cluster's average ideal population size is 206,509 (413,018 divided by 5 districts) with an average deviation of -2,279 or -1.09%. Thus, potentially each SD within the Brunswick-New Hanover Cluster could have a population deviation as low as -1.09%.

**Table 38 - Brunswick-New Hanover Cluster Senate District's Population Deviation**

| <b>District</b> | <b>Population</b> | <b>Ideal Value</b> | <b>Deviation</b> | <b>% Deviation</b> |
|-----------------|-------------------|--------------------|------------------|--------------------|
| 7               | 214,542           | 208,788            | -10,312          | -4.94%             |
| 8               | 198,476           | 208,788            | 5,754            | 2.76%              |
| Cluster Average | 206,509           | 208,788            | -2,279           | -1.09%             |

Source: North Carolina Enacted Plan Maptitude Dataview

151. Once again, I was able to create and observe several options that would allow me to shift one or two VTDs that would bring the district population closer to the ideal population and the overall population deviation closer to zero. Specifically, the areas in Wilmington added to SD 8 could be allocated between the two districts in this cluster in a more compact manner. In essence, this addition could be located in other areas and constructed in a more compact manner.
152. As with the other areas that I reviewed, some of the possible VTD movements that I observed would not only result in a lower population deviation, but also make the districts slightly more compact. In addition, the movements would not result in additional splits of political subdivisions (cities and towns) or noticeable communities of interest (CDPs or landmark areas). Finally, all of the movements resulted in contiguous districts.
153. Simple modification could be made to the Brunswick, New Hanover, and Columbus cluster which would lower the overall population deviation. Thus, I find no redistricting criteria justification for the Brunswick, New Hanover, and Columbus cluster to include a population deviation that is as high as 7.70%.

**D. Iredell-Mecklenburg Senate District Cluster**

154. I also reviewed the population deviation in the Mecklenburg and Iredell Senate cluster. (See Table 39). The Mecklenburg and Iredell cluster wholly contains six Senate districts (SD 37, 38, 39, 40, 41 and 42). The population deviation of the districts ranges from a high of 4.99% to a low of .28% with an overall deviation of 4.71%. Iredell-Mecklenburg Cluster's average ideal population size is 217,029 (1,302,175 divided by 6 districts) with an average deviation of 8,241 or 3.95%. Thus, each SD within the Iredell-Mecklenburg Cluster could have a population deviation as low as 3.95%.

**Table 39 - Iredell-Mecklenburg Cluster Senate District's Population Deviation**

| <b>District</b> | <b>Population</b> | <b>Ideal Value</b> | <b>Deviation</b> | <b>% Deviation</b> |
|-----------------|-------------------|--------------------|------------------|--------------------|
| 37              | 219,210           | 208,788            | 10,422           | 4.99%              |
| 39              | 219,123           | 208,788            | 10,335           | 4.95%              |
| 40              | 218,881           | 208,788            | 10,093           | 4.83%              |
| 38              | 217,905           | 208,788            | 9,117            | 4.37%              |
| 41              | 217,678           | 208,788            | 8,890            | 4.26%              |
| 42              | 209,378           | 208,788            | 590              | 0.28%              |
| Cluster Average | 217,029           | 208,788            | 8,241            | 3.95%              |

Source: North Carolina Enacted Plan Maptitude Dataview

155. Once again, I was able to create and observe several options that would allow me to shift one or two VTDs that would bring the district population closer to the ideal population and the overall population deviation closer to zero.

156. As with the other areas that I reviewed, some of the possible VTD movements that I observed would not only result in a lower population deviation, but also make the districts slightly more compact. In addition, the movements would not result in additional splits of political subdivisions (cities and towns) or noticeable communities of interest (CDPs or landmark areas). Finally, all of the movements resulted in contiguous districts.

157. Simple modification could be made to the Mecklenburg and Iredell cluster which would lower the overall population deviation. Thus, I find no redistricting criteria justification for the Mecklenburg and Iredell cluster to include a population deviation that is as high as 7.70%.

#### **XIV. Congressional Analysis**

158. I reviewed the North Carolina General Assembly criteria for drawing Congressional districts.<sup>34</sup> I also analyzed various district analytics including compactness, COI, and demographic measures comparing the court ordered CD 1 of the North Carolina's Interim Congressional 2022 and the CD 1 of the 2023 Enacted Plan, as well as the Triad CDs 5 and 6 of the Interim Congressional 2022 and the Triad CDs 5, 6, 9, and 10 of the 2023 Enacted Plan. A map of the 2023 Enacted Plan, with BVAP indicated with color shading within VTDs, is shown below in Figure 18.

---

<sup>34</sup> The North Carolina General Assembly criteria for drawing Congressional districts are available here: <https://webservices.ncleg.gov/ViewDocSiteFile/81643>. They are reproduced in Appendix B.

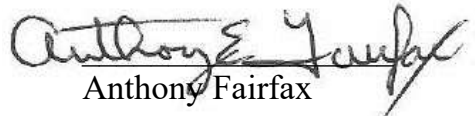
census place splits in the 2022 Interim Plan versus the 2023 Enacted Plan with 51 and 53 respectively.

\* \* \*

176. The findings and conclusions in this Report are based upon information that has been made available to me or known by me to date. My work in this matter is ongoing and I reserve the right to modify, update, or supplement my analyses, findings, and any conclusions as additional information is made available to me or as I perform further analysis.

Pursuant to 28 U.S.C. § 1746, I declare under penalty of perjury of the laws of the United States that the foregoing is true and correct according to the best of my knowledge, information and belief.

Dated: 10/28/24

Signed:   
Anthony Fairfax

### **Index of Appendices**

Appendix A - Resume of Anthony E. Fairfax (original version)

Appendix B – North Carolina Senate and House Redistricting Criteria (original version)

Appendix C - Maps of the Enacted and Illustrative Plans (original version)

Appendix D - Redistricting Criteria Comparison Reports (original version)

Appendix E - COIs and Socioeconomic & Other Maps (10/28/24 Version)



**Table 35 – Senate Illustrative Plans’ and 2023 Enacted Plans’ Criteria Comparison**

| Criteria   | Senate Plan A         | Senate Plan B         | Enacted Plan          |
|--|-----------------------|-----------------------|-----------------------|
| U.S. Constitution, Alabama Constitution, and the Federal Voting Rights Act - Section 2 ( <i>Gingles</i> Prong 1) | 2 Maj Black NE Region | 1 Maj Black NE Region | 0 Maj Black NE Region |
| Equal Population   | Y<br>(9.99%)          | Y<br>(9.99%)          | Y<br>(9.99%)          |
| Contiguity   | Y                     | Y                     | Y                     |
| Compactness^ - (Reock – Polsby-Popper)<br># District More Compact by Measure:                                    |                       |                       |                       |
| - Plan Mean  | 0.40 - 0.31           | 0.41 - 0.32           | 0.40 - 0.31           |
| - District by District   | 3 - 3                 | <u>4 - 4</u>          | 3 - 3/ <u>1 - 1</u>   |
| - Comparing Maj Black Districts  | 1 - 1                 | 1 - 1                 | 1 - 1/0 - 0           |
| - Minimum Enacted Plan Values:<br>Compared to <u>2/1</u> Maj Black SDs   | 2 - 2                 | <u>1 - 1</u>          | 0 - 0/0 - 0           |
| COIs/Political Subdivision Splits  |                       |                       |                       |
| Census Places (cities, towns, CDPs)  | 79                    | 79                    | 79                    |
| - Landmark Areas   | 246                   | 241                   | 242                   |
| - Voting Districts (VTDs)  | 12                    | 12                    | 12                    |
| County Splits  | 17                    | 15                    | 15                    |

Source: Illustrative and Enacted Plans extracted from Maptitude for Redistricting reports

^See the Gingles Analysis section Illustrative Plan Districts - “Geographically Compact” (Compactness Analysis).

\*The compactness and COI/Political Subdivision metrics between the Illustrative Plan A and the 2023 Enacted Plan are extremely close and are not the same but very similar in performance.

### **XIII. Apportionment Analysis**

143. I also analyzed several clusters contained within the 2023 Senate and House Enacted Plans regarding malapportionment of the districts. The analysis started with the recreation of the House and Senate plans using the Maptitude software. Once I recreated the plans, I was able to generate and observe alternative configurations that could be created.

#### **A. Wake County House Districts Cluster**

144. I reviewed the 2023 Enacted Plan population deviations in the Wake County House district cluster. (See Table 36). Wake County wholly contains 13 House districts (SD 37, 41, 34, 66, 21, 38, 11, 40, 36, 39, 33, 49, and 35). The population deviation of the districts ranges from a high of 3.81% to a low of -4.48% with an overall deviation of 8.29%. Wake County’s average ideal population size is extremely close to the state’s at 86,878 (1,129,410 divided by 13 districts) with an average