

District 9

68TH LEGISLATIVE ASSEMBLY - REGULAR SESSION (2023)



Senator
Kent Weston
District 9 | R



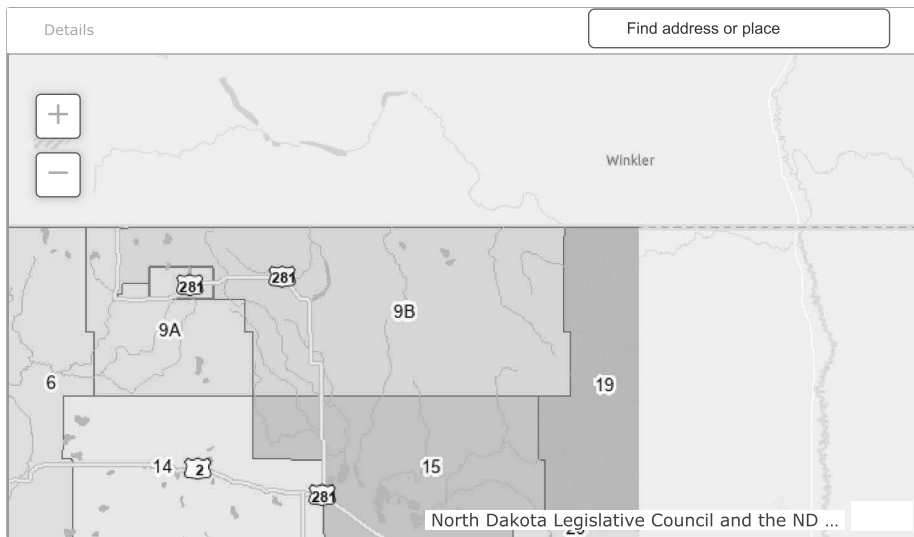
Representative
Jayme Davis
District 9A | D



Representative
Donna Henderson
District 9B | R

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[Population Statistics](#)



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[District 9A Map](#)

[District 9B Map](#)

Exhibit 39

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North Dakota Legislative Council

State Capitol

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Representative Donna Henderson



Biography

- Farm wife; Retired Dental Hygienist
- AA, NDSCS
- Secretary, Cavalier County Farm Bureau
- Married (Paul); 6 children; 7 grandchildren
- House since 2023

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2023

68th Legislative Assembly - Regular Session (2023) Regular

House of Representatives

Republican

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Calvin

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North Dakota Legislative Council

Prepared for the Redistricting Committee
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2020 CENSUS - POPULATION CHANGE SUMMARY

On August 12, 2021, the United States Census Bureau released the results of the 2020 Census. The data indicated North Dakota experienced the fourth largest percentage increase in population nationwide with a population increase of 15.8 percent over the state's 2010 population. The state also is home to the county with the largest population increase in the nation with McKenzie County increasing in population by 131 percent over the county's 2010 population. However, in regard to rural counties, North Dakota's population trends tracked with the nationwide trend of less populous counties further losing population. This memorandum provides a summary of the change in the population of North Dakota's legislative districts, counties, and cities when comparing the results of the 2010 Census to the results of the 2020 Census.

LEGISLATIVE DISTRICTS

When comparing the 2010 Census results to the 2020 Census results, the five legislative districts with the largest percentage increase in population are Districts 2, 27, 16, 7, and 39; with a population increase of 102 percent, 94 percent, 81 percent, 61 percent, and 54 percent, respectively. The five legislative districts with the largest percentage decrease in population are Districts 9, 42, 23, 10, and 14; with a population decrease of 13 percent, 9 percent, 7 percent, 6 percent, and 6 percent, respectively. The following table summarizes the population change in legislative districts when comparing the 2010 Census results to the 2020 Census results, including the resulting deviation from the newly calculated ideal district size of 16,576 when using 47 legislative districts. The attached [appendix](#) provides a visual representation of the percentage deviation from the ideal district size in each legislative district.

Legislative District	Population		Increase (Decrease)		Change Needed to Match Ideal District Size Based on 2020 Population	
	2010 ¹	2020 ²	Amount	Percent	Amount	Percent
1	14,395	19,120	4,725	32.82%	(2,544)	(15.35%)
2	14,657	29,622	14,965	102.10%	(13,046)	(78.70%)
3	14,626	16,692	2,066	14.13%	(116)	(0.70%)
4	14,081	16,794	2,713	19.27%	(218)	(1.32%)
5	14,129	14,638	509	3.60%	1,938	11.69%
6	14,294	14,006	(288)	(2.01%)	2,570	15.50%
7	13,919	22,437	8,518	61.20%	(5,861)	(35.36%)
8	14,175	15,951	1,776	12.53%	625	3.77%
9	13,937	12,187	(1,750)	(12.56%)	4,389	26.48%
10	14,393	13,483	(910)	(6.32%)	3,093	18.66%
11	14,781	14,646	(135)	(0.91%)	1,930	11.64%
12	13,768	14,144	376	2.73%	2,432	14.67%
13	14,862	14,959	97	0.65%	1,617	9.76%
14	14,431	13,594	(837)	(5.80%)	2,982	17.99%
15	13,697	13,767	70	0.51%	2,809	16.95%
16	14,897	26,960	12,063	80.98%	(10,384)	(62.64%)
17	13,894	20,408	6,514	46.88%	(3,832)	(23.12%)
18	13,929	13,783	(146)	(1.05%)	2,793	16.85%
19	13,812	13,255	(557)	(4.03%)	3,321	20.04%
20	14,314	14,354	40	0.28%	2,222	13.40%
21	14,728	15,294	566	3.84%	1,282	7.73%
22	14,838	21,995	7,157	48.23%	(5,419)	(32.69%)
23	14,455	13,467	(988)	(6.84%)	3,109	18.76%
24	13,818	13,943	125	0.90%	2,633	15.88%
25	14,469	14,891	422	2.92%	1,685	10.17%
26	14,021	14,352	331	2.36%	2,224	13.42%
27	14,014	27,246	13,232	94.42%	(10,670)	(64.37%)
28	13,729	13,969	240	1.75%	2,607	15.73%
29	13,905	13,655	(250)	(1.80%)	2,921	17.62%
30	14,689	16,836	2,147	14.62%	(260)	(1.57%)
31	14,844	16,002	1,158	7.80%	574	3.46%

Legislative District	Population		Increase (Decrease)		Change Needed to Match Ideal District Size Based on 2020 Population	
	2010 ¹	2020 ²	Amount	Percent	Amount	Percent
32	14,541	15,128	587	4.04%	1,448	8.74%
33	14,279	14,910	631	4.42%	1,666	10.05%
34	14,439	18,046	3,607	24.98%	(1,470)	(8.87%)
35	14,787	14,645	(142)	(0.96%)	1,931	11.65%
36	14,084	19,064	4,980	35.36%	(2,488)	(15.01%)
37	14,301	18,817	4,516	31.58%	(2,241)	(13.52%)
38	14,093	17,275	3,182	22.58%	(699)	(4.22%)
39	14,806	22,755	7,949	53.69%	(6,179)	(37.28%)
40	14,257	16,604	2,347	16.46%	(28)	(0.17%)
41	14,668	15,096	428	2.92%	1,480	8.93%
42	14,001	12,677	(1,324)	(9.46%)	3,899	23.52%
43	13,906	15,157	1,251	9.00%	1,419	8.56%
44	14,213	13,519	(694)	(4.88%)	3,057	18.44%
45	14,575	15,590	1,015	6.96%	986	5.95%
46	14,630	15,332	702	4.80%	1,244	7.50%
47	14,510	18,029	3,519	24.25%	(1,453)	(8.77%)
Total	672,591	779,094	N/A	N/A	N/A	N/A

¹For the 2010 population data, the ideal district size was 14,310 based on 47 legislative districts.

²For the 2020 population data, the ideal district size is 16,576 based on 47 legislative districts.

If the committee elected to modify the number of legislative districts, within the constitutionally permissible range of 40 to 54 districts, the ideal district size would be as follows:

Number of Districts	Ideal District Size
40	19,477
41	19,002
42	18,550
43	18,118
44	17,707
45	17,313
46	16,937
47	16,576
48	16,231
49	15,900
50	15,582
51	15,276
52	14,983
53	14,700
54	14,428

COUNTIES

When comparing the 2010 Census results to the 2020 Census results, the five counties with the largest percentage increase in population are McKenzie, Williams, Stark, Mountrail, and Cass; with a population increase of 131 percent, 83 percent, 39 percent, 28 percent, and 23 percent, respectively. The five counties with the largest percentage decrease in population are Rolette, Benson, McIntosh, Steele, and Pierce; with a population decrease of 13 percent, 10 percent, 10 percent, 9 percent, and 8 percent, respectively. The following table summarizes the population changes in counties when comparing the 2010 Census results to the 2020 Census results:

County	Population		Increase (Decrease)	
	2010	2020	Amount	Percent
Adams	2,343	2,200	(143)	(6.10%)
Barnes	11,066	10,853	(213)	(1.92%)
Benson	6,660	5,964	(696)	(10.45%)
Billings	783	945	162	20.69%
Bottineau	6,429	6,379	(50)	(0.78%)
Bowman	3,151	2,993	(158)	(5.01%)
Burke	1,968	2,201	233	11.84%
Burleigh	81,308	98,458	17,150	21.09%
Cass	149,778	184,525	34,747	23.20%
Cavalier	3,993	3,704	(289)	(7.24%)
Dickey	5,289	4,999	(290)	(5.48%)

County	Population		Increase (Decrease)	
	2010	2020	Amount	Percent
Divide	2,071	2,195	124	5.99%
Dunn	3,536	4,095	559	15.81%
Eddy	2,385	2,347	(38)	(1.59%)
Emmons	3,550	3,301	(249)	(7.01%)
Foster	3,343	3,397	54	1.62%
Golden Valley	1,680	1,736	56	3.33%
Grand Forks	66,861	73,170	6,309	9.44%
Grant	2,394	2,301	(93)	(3.88%)
Griggs	2,420	2,306	(114)	(4.71%)
Hettinger	2,477	2,489	12	0.48%
Kidder	2,435	2,394	(41)	(1.68%)
LaMoure	4,139	4,093	(46)	(1.11%)
Logan	1,990	1,876	(114)	(5.73%)
McHenry	5,395	5,345	(50)	(0.93%)
McIntosh	2,809	2,530	(279)	(9.93%)
McKenzie	6,360	14,704	8,344	131.20%
McLean	8,962	9,771	809	9.03%
Mercer	8,424	8,350	(74)	(0.88%)
Morton	27,471	33,291	5,820	21.19%
Mountrail	7,673	9,809	2,136	27.84%
Nelson	3,126	3,015	(111)	(3.55%)
Oliver	1,846	1,877	31	1.68%
Pembina	7,413	6,844	(569)	(7.68%)
Pierce	4,357	3,990	(367)	(8.42%)
Ramsey	11,451	11,605	154	1.34%
Ransom	5,457	5,703	246	4.51%
Renville	2,470	2,282	(188)	(7.61%)
Richland	16,321	16,529	208	1.27%
Rolette	13,937	12,187	(1,750)	(12.56%)
Sargent	3,829	3,862	33	0.86%
Sheridan	1,321	1,265	(56)	(4.24%)
Sioux	4,153	3,898	(255)	(6.14%)
Slope	727	706	(21)	(2.89%)
Stark	24,199	33,646	9,447	39.04%
Steele	1,975	1,798	(177)	(8.96%)
Stutsman	21,100	21,593	493	2.34%
Towner	2,246	2,162	(84)	(3.74%)
Traill	8,121	7,997	(124)	(1.53%)
Walsh	11,119	10,563	(556)	(5.00%)
Ward	61,675	69,919	8,244	13.37%
Wells	4,207	3,892	(315)	(7.49%)
Williams	22,398	40,950	18,552	82.83%
Total	672,591	779,094	N/A	N/A

CITIES

When comparing the 2010 Census results to the 2020 Census results, the five cities with the largest percentage increase in population are Watford City, Arnegard, Venturia, Williston, and Tioga; with a population increase of 256 percent, 145 percent, 110 percent, 98 percent, and 79 percent, respectively. The five cities with the largest percentage decrease in population are Ruso, Wales, Calio, Bantry, and Ardoch; with a population decrease of 75 percent, 68 percent, 64 percent, 57 percent, and 54 percent, respectively. The following table summarizes the population changes in cities and census designated places (CDPs) when comparing the 2010 Census results to the 2020 Census results:

City/CDP	Population		Increase (Decrease)	
	2010	2020	Amount	Percent
Abercrombie	263	244	(19)	(7.22%)
Adams	127	127	0	0.00%
Alamo	57	53	(4)	(7.02%)
Alexander	223	319	96	43.05%
Alice	40	41	1	2.50%
Almont	122	100	(22)	(18.03%)
Alsen	35	32	(3)	(8.57%)
Ambrose	26	24	(2)	(7.69%)

City/CDP	Population		Increase (Decrease)	
	2010	2020	Amount	Percent
Amenia	94	85	(9)	(9.57%)
Amidon	20	24	4	20.00%
Anamoose	227	230	3	1.32%
Aneta	222	234	12	5.41%
Antler	27	22	(5)	(18.52%)
Ardoch	67	31	(36)	(53.73%)
Argusville	475	480	5	1.05%
Arnegard	115	282	167	145.22%
Arthur	337	328	(9)	(2.67%)
Ashley	749	613	(136)	(18.16%)
Auburn CDP	48	31	(17)	(35.42%)
Ayr	17	11	(6)	(35.29%)
Balfour	26	20	(6)	(23.08%)
Balta	65	66	1	1.54%
Bantry	14	6	(8)	(57.14%)
Barney	52	40	(12)	(23.08%)
Barton CDP	20	13	(7)	(35.00%)
Bathgate	43	47	4	9.30%
Beach	1,019	981	(38)	(3.73%)
Belcourt CDP	2,078	1,510	(568)	(27.33%)
Belfield	800	996	196	24.50%
Benedict	66	68	2	3.03%
Bergen	7	10	3	42.86%
Berlin	34	31	(3)	(8.82%)
Berthold	454	490	36	7.93%
Beulah	3,121	3,058	(63)	(2.02%)
Binford	183	170	(13)	(7.10%)
Bisbee	126	110	(16)	(12.70%)
Bismarck	61,272	73,622	12,350	20.16%
Blanchard CDP	26	16	(10)	(38.46%)
Bottineau	2,211	2,194	(17)	(0.77%)
Bowbells	336	301	(35)	(10.42%)
Bowdon	131	137	6	4.58%
Bowman	1,650	1,470	(180)	(10.91%)
Braddock	21	18	(3)	(14.29%)
Briarwood	73	57	(16)	(21.92%)
Brinsmade	35	30	(5)	(14.29%)
Brocket	57	34	(23)	(40.35%)
Brooktree Park CDP	80	76	(4)	(5.00%)
Buchanan	90	87	(3)	(3.33%)
Bucyrus	27	18	(9)	(33.33%)
Buffalo	188	195	7	3.72%
Burlington	1,060	1,291	231	21.79%
Butte	68	70	2	2.94%
Buxton	323	348	25	7.74%
Caledonia CDP	39	37	(2)	(5.13%)
Calio	22	8	(14)	(63.64%)
Calvin	20	15	(5)	(25.00%)
Cando	1,115	1,117	2	0.18%
Cannon Ball CDP	875	864	(11)	(1.26%)
Carpio	157	144	(13)	(8.28%)
Carrington	2,065	2,080	15	0.73%
Carson	293	254	(39)	(13.31%)
Casselton	2,329	2,479	150	6.44%
Cathay	43	20	(23)	(53.49%)
Cavalier	1,302	1,246	(56)	(4.30%)
Cayuga	27	40	13	48.15%
Center	571	588	17	2.98%
Christine	150	151	1	0.67%
Churchs Ferry	12	9	(3)	(25.00%)
Cleveland	83	57	(26)	(31.33%)
Clifford	44	30	(14)	(31.82%)
Cogswell	99	73	(26)	(26.26%)
Coleharbor	79	59	(20)	(25.32%)
Colfax	121	172	51	42.15%

City/CDP	Population		Increase (Decrease)	
	2010	2020	Amount	Percent
Columbus	133	139	6	4.51%
Conway	23	15	(8)	(34.78%)
Cooperstown	984	983	(1)	(0.10%)
Courtenay	45	36	(9)	(20.00%)
Crary	142	113	(29)	(20.42%)
Crosby	1,070	1,065	(5)	(0.47%)
Crystal	138	116	(22)	(15.94%)
Dahlen CDP	18	17	(1)	(5.56%)
Davenport	252	256	4	1.59%
Dawson	61	74	13	21.31%
Dazey	104	78	(26)	(25.00%)
Deering	98	94	(4)	(4.08%)
De Lamere CDP	30	25	(5)	(16.67%)
Denhoff CDP	20	13	(7)	(35.00%)
Des Lacs	204	185	(19)	(9.31%)
Devils Lake	7,141	7,192	51	0.71%
Dickey	42	42	0	0.00%
Dickinson	17,787	25,679	7,892	44.37%
Dodge	87	89	2	2.30%
Donnybrook	59	75	16	27.12%
Douglas	64	93	29	45.31%
Drake	275	292	17	6.18%
Drayton	824	757	(67)	(8.13%)
Driscoll CDP	82	68	(14)	(17.07%)
Dunn Center	146	227	81	55.48%
Dunseith	773	632	(141)	(18.24%)
Dwight	82	80	(2)	(2.44%)
East Dunseith CDP	500	500	0	0.00%
East Fairview CDP	76	73	(3)	(3.95%)
Edgeley	563	585	22	3.91%
Edinburg	196	199	3	1.53%
Edmore	182	139	(43)	(23.63%)
Egeland	28	32	4	14.29%
Elgin	642	543	(99)	(15.42%)
Ellendale	1,394	1,125	(269)	(19.30%)
Elliott	25	24	(1)	(4.00%)
Embden CDP	59	41	(18)	(30.51%)
Emerado	414	443	29	7.00%
Enderlin	886	881	(5)	(0.56%)
Englevale CDP	40	36	(4)	(10.00%)
Epping	100	84	(16)	(16.00%)
Erie CDP	50	54	4	8.00%
Esmond	100	91	(9)	(9.00%)
Fairdale	38	30	(8)	(21.05%)
Fairmount	367	343	(24)	(6.54%)
Fargo	105,549	125,990	20,441	19.37%
Fessenden	479	462	(17)	(3.55%)
Fingal	97	92	(5)	(5.15%)
Finley	445	401	(44)	(9.89%)
Flasher	232	217	(15)	(6.47%)
Flaxton	66	60	(6)	(9.09%)
Forbes	53	36	(17)	(32.08%)
Fordville	212	207	(5)	(2.36%)
Forest River	125	109	(16)	(12.80%)
Forman	504	509	5	0.99%
Fort Ransom	77	91	14	18.18%
Fort Totten CDP	1,243	1,160	(83)	(6.68%)
Fortuna	22	30	8	36.36%
Fort Yates	184	176	(8)	(4.35%)
Four Bears Village CDP	517	500	(17)	(3.29%)
Foxholm CDP	75	56	(19)	(25.33%)
Fredonia	46	38	(8)	(17.39%)
Frontier	214	195	(19)	(8.88%)
Fullerton	54	62	8	14.81%
Gackle	310	281	(29)	(9.35%)

City/CDP	Population		Increase (Decrease)	
	2010	2020	Amount	Percent
Galesburg	108	118	10	9.26%
Gardena	29	24	(5)	(17.24%)
Gardner	74	129	55	74.32%
Garrison	1,453	1,462	9	0.62%
Gascoyne	16	21	5	31.25%
Gilby	237	243	6	2.53%
Gladstone	239	271	32	13.39%
Glenburn	380	404	24	6.32%
Glenfield	91	94	3	3.30%
Glen Ullin	807	732	(75)	(9.29%)
Golden Valley	182	191	9	4.95%
Golva	61	84	23	37.70%
Goodrich	98	106	8	8.16%
Grace City	63	53	(10)	(15.87%)
Grafton	4,284	4,170	(114)	(2.66%)
Grand Forks	52,838	59,166	6,328	11.98%
Grand Forks AFB CDP	2,367	2,002	(365)	(15.42%)
Grandin	173	186	13	7.51%
Grano	7	9	2	28.57%
Granville	241	240	(1)	(0.41%)
Great Bend	60	49	(11)	(18.33%)
Green Acres CDP	575	605	30	5.22%
Grenora	244	221	(23)	(9.43%)
Gwinner	753	924	171	22.71%
Hague	71	70	(1)	(1.41%)
Halliday	188	241	53	28.19%
Hamberg	21	11	(10)	(47.62%)
Hamilton	61	46	(15)	(24.59%)
Hampden	48	29	(19)	(39.58%)
Hankinson	919	921	2	0.22%
Hannaford	131	126	(5)	(3.82%)
Hannah	15	8	(7)	(46.67%)
Hansboro	12	15	3	25.00%
Harmon CDP	145	259	114	78.62%
Harvey	1,783	1,650	(133)	(7.46%)
Harwood	718	794	76	10.59%
Hatton	777	712	(65)	(8.37%)
Havana	71	67	(4)	(5.63%)
Haynes	23	15	(8)	(34.78%)
Hazelton	235	223	(12)	(5.11%)
Hazen	2,411	2,281	(130)	(5.39%)
Hebron	747	794	47	6.29%
Heil CDP	15	15	0	0.00%
Heimdal CDP	27	16	(11)	(40.74%)
Hettinger	1,226	1,074	(152)	(12.40%)
Hillsboro	1,603	1,649	46	2.87%
Hoople	242	247	5	2.07%
Hope	258	272	14	5.43%
Horace	2,430	3,085	655	26.95%
Hunter	261	332	71	27.20%
Hurdsfield	84	64	(20)	(23.81%)
Inkster	50	38	(12)	(24.00%)
Jamestown	15,427	15,849	422	2.74%
Jessie CDP	25	22	(3)	(12.00%)
Jud	72	65	(7)	(9.72%)
Karlsruhe	82	87	5	6.10%
Kathryn	52	66	14	26.92%
Kenmare	1,096	961	(135)	(12.32%)
Kensal	163	146	(17)	(10.43%)
Kief	13	8	(5)	(38.46%)
Killdeer	751	939	188	25.03%
Kindred	692	889	197	28.47%
Knox	25	22	(3)	(12.00%)
Kramer	29	24	(5)	(17.24%)
Kulm	354	368	14	3.95%

City/CDP	Population		Increase (Decrease)	
	2010	2020	Amount	Percent
Lakota	672	683	11	1.64%
LaMoure	889	764	(125)	(14.06%)
Landa	38	41	3	7.89%
Langdon	1,878	1,909	31	1.65%
Lankin	98	102	4	4.08%
Lansford	245	238	(7)	(2.86%)
Larimore	1,346	1,260	(86)	(6.39%)
Larson CDP	12	9	(3)	(25.00%)
Lawton	30	15	(15)	(50.00%)
Leal	20	27	7	35.00%
Leeds	427	442	15	3.51%
Lehr	80	81	1	1.25%
Leith	16	28	12	75.00%
Leonard	223	248	25	11.21%
Lidgerwood	652	600	(52)	(7.98%)
Lignite	155	141	(14)	(9.03%)
Lincoln	2,406	4,257	1,851	76.93%
Linton	1,097	1,071	(26)	(2.37%)
Lisbon	2,154	2,204	50	2.32%
Litchville	172	169	(3)	(1.74%)
Logan CDP	194	247	53	27.32%
Loma	16	10	(6)	(37.50%)
Loraine	9	9	0	0.00%
Ludden	23	15	(8)	(34.78%)
Luverne	31	28	(3)	(9.68%)
McClusky	380	322	(58)	(15.26%)
McHenry	56	64	8	14.29%
McLeod CDP	27	22	(5)	(18.52%)
McVille	349	392	43	12.32%
Maddock	382	402	20	5.24%
Makoti	154	148	(6)	(3.90%)
Mandan	18,331	24,206	5,875	32.05%
Mandaree CDP	596	691	95	15.94%
Manning CDP	74	47	(27)	(36.49%)
Mantador	64	67	3	4.69%
Manvel	360	377	17	4.72%
Mapleton	762	1,320	558	73.23%
Marion	133	125	(8)	(6.02%)
Marmarth	136	101	(35)	(25.74%)
Martin	78	63	(15)	(19.23%)
Max	334	331	(3)	(0.90%)
Maxbass	84	89	5	5.95%
Mayville	1,858	1,854	(4)	(0.22%)
Medina	308	264	(44)	(14.29%)
Medora	112	121	9	8.04%
Menoken CDP	70	78	8	11.43%
Mercer	94	88	(6)	(6.38%)
Michigan City	294	263	(31)	(10.54%)
Milnor	653	624	(29)	(4.44%)
Milton	58	39	(19)	(32.76%)
Minnewaukan	224	199	(25)	(11.16%)
Minot	40,888	48,377	7,489	18.32%
Minot AFB CDP	5,521	5,017	(504)	(9.13%)
Minto	604	616	12	1.99%
Mohall	783	694	(89)	(11.37%)
Monango	36	30	(6)	(16.67%)
Montpelier	87	85	(2)	(2.30%)
Mooreton	197	177	(20)	(10.15%)
Mott	721	653	(68)	(9.43%)
Mountain	92	80	(12)	(13.04%)
Munich	210	190	(20)	(9.52%)
Mylo	20	21	1	5.00%
Napoleon	792	749	(43)	(5.43%)
Nash CDP	32	13	(19)	(59.38%)
Neche	371	344	(27)	(7.28%)

City/CDP	Population		Increase (Decrease)	
	2010	2020	Amount	Percent
Nekoma	50	31	(19)	(38.00%)
Newburg	110	96	(14)	(12.73%)
New England	600	683	83	13.83%
New Leipzig	221	218	(3)	(1.36%)
New Rockford	1,391	1,361	(30)	(2.16%)
New Salem	946	973	27	2.85%
New Town	1,925	2,764	839	43.58%
Niagara	53	46	(7)	(13.21%)
Nome	62	51	(11)	(17.74%)
Noonan	121	137	16	13.22%
North River	56	55	(1)	(1.79%)
Northwood	945	982	37	3.92%
Oakes	1,856	1,798	(58)	(3.13%)
Oberon	105	101	(4)	(3.81%)
Oriska	118	114	(4)	(3.39%)
Orrin CDP	22	7	(15)	(68.18%)
Osnabrock	134	105	(29)	(21.64%)
Overly	18	10	(8)	(44.44%)
Oxbow	305	381	76	24.92%
Page	232	190	(42)	(18.10%)
Palermo	74	125	51	68.92%
Park River	1,403	1,424	21	1.50%
Parshall	903	949	46	5.09%
Pekin	70	75	5	7.14%
Pembina	592	512	(80)	(13.51%)
Perth	9	6	(3)	(33.33%)
Petersburg	192	162	(30)	(15.63%)
Pettibone	70	60	(10)	(14.29%)
Pick City	123	123	0	0.00%
Pillsbury	12	12	0	0.00%
Pingree	60	41	(19)	(31.67%)
Pisek	106	89	(17)	(16.04%)
Plaza	171	211	40	23.39%
Porcupine CDP	146	197	51	34.93%
Portal	126	125	(1)	(0.79%)
Portland	606	578	(28)	(4.62%)
Powers Lake	280	385	105	37.50%
Prairie Rose	73	56	(17)	(23.29%)
Raleigh CDP	12	14	2	16.67%
Ray	592	740	148	25.00%
Reeder	162	125	(37)	(22.84%)
Regan	43	35	(8)	(18.60%)
Regent	160	170	10	6.25%
Reile's Acres	513	703	190	37.04%
Reynolds	301	277	(24)	(7.97%)
Rhame	169	158	(11)	(6.51%)
Richardton	529	692	163	30.81%
Riverdale	205	223	18	8.78%
Robinson	37	36	(1)	(2.70%)
Rocklake	101	94	(7)	(6.93%)
Rogers	46	49	3	6.52%
Rolette	594	484	(110)	(18.52%)
Rolla	1,280	1,223	(57)	(4.45%)
Ross	97	95	(2)	(2.06%)
Rugby	2,876	2,509	(367)	(12.76%)
Ruso	4	1	(3)	(75.00%)
Ruthville CDP	191	151	(40)	(20.94%)
Rutland	163	163	0	0.00%
Ryder	85	108	23	27.06%
St. John	341	322	(19)	(5.57%)
St. Thomas	331	323	(8)	(2.42%)
Sanborn	192	161	(31)	(16.15%)
Sarles	28	16	(12)	(42.86%)
Sawyer	357	319	(38)	(10.64%)
Scranton	281	258	(23)	(8.19%)

City/CDP	Population		Increase (Decrease)	
	2010	2020	Amount	Percent
Selfridge	160	127	(33)	(20.63%)
Seiz CDP	46	40	(6)	(13.04%)
Sentinel Butte	56	61	5	8.93%
Sharon	96	86	(10)	(10.42%)
Sheldon	116	95	(21)	(18.10%)
Shell Valley CDP	1,197	1,146	(51)	(4.26%)
Sherwood	242	194	(48)	(19.83%)
Sheyenne	204	186	(18)	(8.82%)
Sibley	30	19	(11)	(36.67%)
Solen	83	70	(13)	(15.66%)
Souris	58	37	(21)	(36.21%)
South Heart	301	394	93	30.90%
Spiritwood CDP	18	29	11	61.11%
Spiritwood Lake	90	97	7	7.78%
Springbrook	27	37	10	37.04%
Stanley	1,458	2,321	863	59.19%
Stanton	366	368	2	0.55%
Starkweather	117	100	(17)	(14.53%)
Steele	715	665	(50)	(6.99%)
Strasburg	409	379	(30)	(7.34%)
Streeter	170	149	(21)	(12.35%)
Surrey	934	1,357	423	45.29%
Sutton CDP	17	17	0	0.00%
Sykeston	117	105	(12)	(10.26%)
Tappen	197	217	20	10.15%
Taylor	148	230	82	55.41%
Thompson	986	1,101	115	11.66%
Tioga	1,230	2,202	972	79.02%
Tolley	47	41	(6)	(12.77%)
Tolna	166	136	(30)	(18.07%)
Tower City	253	268	15	5.93%
Towner	533	479	(54)	(10.13%)
Turtle Lake	581	542	(39)	(6.71%)
Tuttle	80	60	(20)	(25.00%)
Underwood	778	784	6	0.77%
Upham	130	135	5	3.85%
Valley City	6,585	6,575	(10)	(0.15%)
Velva	1,084	1,086	2	0.18%
Venturia	10	21	11	110.00%
Verona	85	59	(26)	(30.59%)
Voltaire	40	46	6	15.00%
Wahpeton	7,766	8,007	241	3.10%
Walcott	235	262	27	11.49%
Wales	31	10	(21)	(67.74%)
Walhalla	996	893	(103)	(10.34%)
Warwick	65	55	(10)	(15.38%)
Washburn	1,246	1,300	54	4.33%
Watford City	1,744	6,207	4,463	255.91%
West Fargo	25,830	38,626	12,796	49.54%
Westhope	429	374	(55)	(12.82%)
Wheatland CDP	68	92	24	35.29%
White Earth	80	100	20	25.00%
White Shield CDP	336	363	27	8.04%
Wildrose	110	115	5	4.55%
Williston	14,716	29,160	14,444	98.15%
Willow City	163	149	(14)	(8.59%)
Wilton	711	718	7	0.98%
Wimbledon	216	178	(38)	(17.59%)
Wing	152	132	(20)	(13.16%)
Wishek	1,002	864	(138)	(13.77%)
Wolford	36	43	7	19.44%
Woodworth	50	44	(6)	(12.00%)
Wyndmere	429	454	25	5.83%
York	23	17	(6)	(26.09%)
Ypsilanti CDP	104	109	5	4.81%

City/CDP	Population		Increase (Decrease)	
	2010	2020	Amount	Percent
Zap	237	221	(16)	(6.75%)
Zeeland	86	82	(4)	(4.65%)

ATTACH:1

**UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF NORTH DAKOTA
EASTERN DIVISION**

<p>TURTLE MOUNTAIN BAND OF CHIPPEWA INDIANS, <i>et al.</i></p> <p style="text-align: center;"><i>Plaintiffs,</i></p> <p style="text-align: center;">v.</p> <p>ALVIN JAEGER, in his official capacity as Secretary of State for North Dakota,</p> <p style="text-align: center;"><i>Defendant.</i></p>

Civil Action No. 3:22-cv-00022-PDW-ARS

EXPERT REPORT OF M.V. HOOD III

I, M.V. Hood III, affirm the conclusions I express in this report are provided to a reasonable degree of professional certainty. In addition, I do hereby declare the following:

I. INTRODUCTION AND BACKGROUND

My name is M.V. (Trey) Hood III, and I am a tenured professor at the University of Georgia with an appointment in the Department of Political Science. I have been a faculty member at the University of Georgia since 1999. I also serve as the Director of the School of Public and International Affairs Survey Research Center. I am an expert in American politics, specifically in the areas of electoral politics, racial politics, election administration, and Southern politics. I teach courses on American politics, Southern politics, and research methods and have taught graduate seminars on the topics of election administration and Southern politics.

I have received research grants to study election administration issues from the National Science Foundation, the Pew Charitable Trust, the Center for Election Innovation and Research, and the MIT Election Data and Science Lab. I have also published peer-reviewed journal articles specifically in the area of election administration, including redistricting. My academic publications are detailed in a copy of my vita that is attached to the end of this report. Currently, I serve on the editorial boards for *Social Science Quarterly* and *Election Law Journal*. The latter is a peer-reviewed academic journal focused on the area of election administration.

During the preceding five years, I have offered expert testimony (through deposition or at trial) in ten cases around the United States: *Ohio A. Philip Randolph Institute v. Ryan Smith*, 1:18-cv-357 (S.D. Ohio), *Libertarian Party of Arkansas v. Thurston*, 4:19-cv-00214 (E.D. Ark.); *Chestnut v. Merrill*, 2:18-cv-907 (N.D. Ala.), *Common Cause v. Lewis*, 18-CVS-014001 (Wake County Superior Court); *Nielsen v. DeSantis*, 4:20-cv-236 (N.D. Fla.); *Western Native Voice v. Stapleton*, DV-56-2020-377 (Montana Thirteenth Judicial District Court); *Driscoll v. Stapleton*, DV-20-0408 (Montana Thirteenth Judicial District Court); *North Carolina v. Holmes*, 18-CVS-15292 (Wake County Superior Court); *Caster v. Merrill*, 2:21-cv-1536 (S.D. Ala); and *Robinson v. Ardoin*, 3:22-cv-00211 (M.D. La.).

I am receiving \$400 an hour for my work on this case and \$400 an hour for any testimony associated with this work. In reaching my conclusions, I have drawn on my training, experience, and knowledge as a social scientist who has specifically conducted research in the area of redistricting. My compensation in this case is not dependent upon the outcome of the litigation or the substance of my opinions.

II. SCOPE AND OVERVIEW

Plaintiffs in this matter are alleging North Dakota's current legislative districting plan violates Section 2 of the Voting Rights Act by diluting the voting strength of Native Americans in LD 9 and LD 15. The relief sought involves the creation of a new LD 9 which incorporates both the Spirit Lake Reservation and the Turtle Mountain Reservation into a single district.¹ In this report, I am responding to Professor Collingwood's Expert Report of November 30, 2022 and also providing my expert opinion relating to other matters present in this case.

¹Complaint in *Turtle Mountain Band of Chippewa Indians, et. al. v. Alvin Jaeger* [3:22-cv-00022]. February 7, 2022.

III. THE GINGLES TEST

In order to substantiate a claim of racial vote dilution, plaintiffs must rely on the now long-established *Gingles* test, which contains three prongs.² The three prongs are as follows:

1. The minority group must be of sufficient size and geographically compact enough to allow for the creation of a single-member district for the group in question.
2. It must be demonstrated that the minority group is politically cohesive.
3. It must further be demonstrated that the candidate of choice for the minority group is typically defeated by the majority voting bloc.

To prevail on a vote dilution claim, evidence must be provided that all three *Gingles* preconditions have been met. In addition to the *Gingles* preconditions, evidence of the lingering effects of discrimination, known as the *totality-of-the-circumstances test*, can also be used by the Court in making a determination of whether vote dilution is present.

IV. ANALYSIS OF LD 9

LD 9 in the enacted legislative plan³ is comprised of 51.7% Native American voting age population.⁴ As such, under Section 2 of the Voting Rights Act it would be described as a minority, opportunity-to-elect district.⁵ LD 9 is also subdivided into LD 9A and LD 9B where each subdistrict serves as a single-member district for the purpose of electing members to the North Dakota House. Subdistrict 9A is 77.0% Native American VAP and LD 9B is 29.4% Native American VAP. Given LD 9 is majority Native American in terms of voting age, per prong 1 it is certainly possible to create a district where the minority group in question to comprises a majority of the district's population.

As related to Prong 2 of the *Gingles* analysis Professor Collingwood analyzes a total of 38 elections configured to the present boundaries of LD 9. Of these, he reports the presence of racially polarized voting in 36 of 38 races analyzed. Stated differently, a clear candidate of choice for Native Americans can be identified in almost all the elections he analyzes. Conversely, this also means that the white community has a different preferred candidate of choice.

Professor Collingwood then conducts what he terms a performance analysis in order to determine if the Native American candidate of choice is typically defeated for those races where racially polarized voting is present. From Professor Collingwood's report I have compiled the results of his analyses in Table 1 below. The results presented include all of the races he

²Established in *Thornburg v. Gingles*, 478 U.S. 30 (1986).

³Throughout this report the enacted plan refers to the legislative districting plan passed by the North Dakota Legislature following the 2020 Census that was in place for the 2022 election-cycle.

⁴Measured as single-race Native Americans of voting age population from the 2020 decennial Census. North Dakota 2022 Legislative Plan Statistics (<https://www.ndlegis.gov/assembly/67-2021/session-interim/2021-legislative-redistricting-maps>).

⁵See *Bartlett v. Strickland*, 556 U.S. 1 (2009).

analyzed across LD 9, LD 9A, and LD 9B. The key takeaway from the table is that although almost all the races analyzed by Professor Collingwood contain a clear candidate of choice for the Native American community in LD 9, the Native American candidate of choice is not typically defeated by the white voting bloc in the district. As summarized in Table 1, of the races analyzed by Professor Collingwood, the preferred Native American candidate loses less than a majority (38%) of the time. Thus, prong 3 of the *Gingles* test is not met. Perhaps this is not a surprise given the fact that LD 9 is already a Native American opportunity-to-elect district as defined by *Bartlett v. Strickland*. As such, it appears that Professor Collingwood's own analysis confirms that LD 9 is functioning as a district where the Native American community can typically elect its candidates of choice.

Table 1. Summary of Races Analyzed by Professor Collingwood (LD 9, LD 9A, LD 9B)

Contests	Number	Percent
Number of races analyzed	110	----
No clear Native American candidate of choice	2 ⁶	1.8%
Clear Native American candidate of choice	108	98.2%
Native American candidate wins	66	60.0%
Native American candidate defeated	42	38.2%

I have also compiled Professor Collingwood's results based solely on his analysis of LD 9, sans the LD 9A and LD 9B subdistricts (see Table 2 below). Looking at Table 2, the same pattern is revealed. Although almost all (95%) of races Professor Collingwood analyzes contain a clear Native American candidate of choice, more often than not these candidates are not defeated by the white voting bloc. Of the 38 races Professor Collingwood analyzes, the Native American preferred candidate is defeated only about a third of the time (34%). For the other cases, there was either no clearly defined Native American preferred candidate of choice (5%) or the Native American preferred candidate of choice prevailed (61%).

Table 2. Summary of Races Analyzed by Professor Collingwood (LD 9)

Contests	Number	Percent
Number of races analyzed	38	----
No clear Native American candidate of choice	2	5.3%
Clear Native American candidate of choice	36	94.7%
Native American candidate wins	23	60.5%
Native American candidate defeated	13	34.2%

Having examined the evidence proffered by Professor Collingwood on prongs 2 and 3 of the *Gingles* test, what conclusions can one draw? Hood, Morrison, and Bryan (2017) provide guidance on the manner in which one may determine if the second and third prongs have been substantiated in a particular matter.

The *Gingles* test established by the Court makes clear that plaintiffs must show a *pattern* of vote dilution. What constitutes a pattern? The language used by the Court adds the qualifier *typically*—meaning the minority candidate of choice is *typically*

⁶Professor Collingwood reports that two of the races he analyzed did not exhibit racially polarized voting.

defeated by the majority voting bloc. Operationally, one can define typically as meaning “more often than not.” Accordingly, a plaintiff’s expert must demonstrate that both prongs two and three are sustained in a numerical majority of cases considered for a vote dilution claim to have any merit.⁷

With these conditions in mind, it is clear that Professor Collingwood’s analysis of LD 9 as currently configured does not meet the requirement for prong 3. While evidence of racially polarized voting is present in a majority of cases he analyzes, it is not the case that a majority of Native American candidates of choice are defeated by the white voting bloc in the district. Thus, there appears to be a decided lack of evidence by which prong 3 might be substantiated in LD 9.

V. ANALYSIS OF LD 15

Professor Collingwood also analyzes voting patterns in LD 15 in the enacted plan. The first prong of the *Gingles* inquiry, however, asks if the minority group is of sufficient size and geographically compact enough to allow for the creation of a majority-minority district for the racial group in question. In the case of LD 15, there is a geographic concentration of Native Americans located in and around the Spirit Lake Reservation. Outside of this concentration, there is little Native American population found within LD 15 (see Figure 1). From the 2020 Census, Native Americans of voting age make up 20.4% of the total VAP for enacted LD 15.⁸ As related to *Gingles* prong 1, Native Americans within LD 15 then do not comprise a majority of the voting age population.

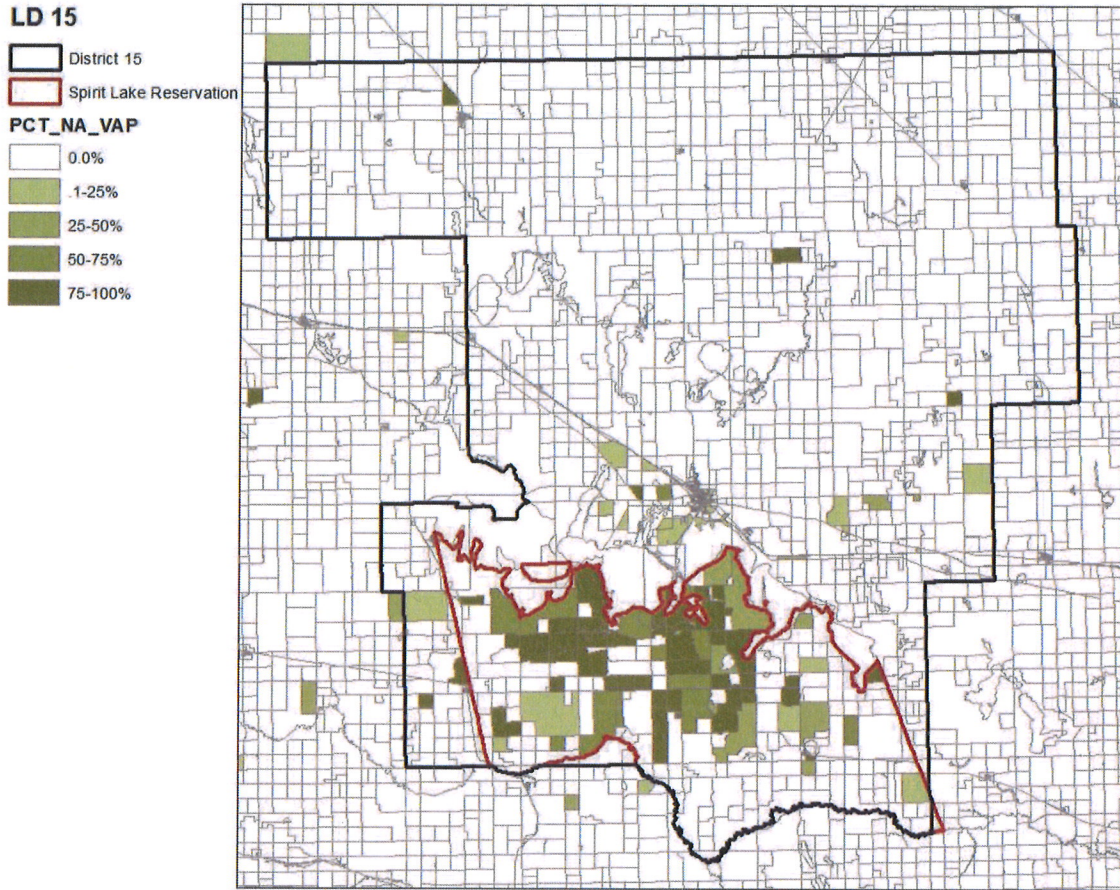
In his report Professor Collingwood concludes that racially polarized voting exists in 30 of 32 races analyzed for this district. He further concludes that the Native American candidate of choice would win only one of the thirty election contests analyzed where racially polarized voting is present in the current LD 15. Based on this analysis, prongs 2 and 3 of the *Gingles* test would appear to be met. However, in order for a vote dilution claim to be substantiated in part, there must be evidence to substantiate all three prongs, not one or two.

While racially polarized voting may, in fact, exist in LD 15; it is not possible for the State of North Dakota to create a minority opportunity-to-elect district in the vicinity of the Spirit Lake Reservation. Therefore, prong 1 of the *Gingles* test is not substantiated in the case of LD 15. With all three preconditions being requisite to proving a vote dilution claim, analysis need not proceed to the second and third *Gingles* prongs.

⁷Quoted material from page 545. M.V. Hood III, Peter A. Morrison, and Thomas M. Bryan. 2017. “From Legal Theory to Practical Application: A How-To for Performing Vote Dilution Analyses.” *Social Science Quarterly* 99(2): 536-552.

⁸Even if LD 15 was partitioned, the Native American voting age population would not constitute a majority in either subdistrict.

Figure 1. Legislative District 15—Block-Level Native American Voting Age Population



VI. ILLUSTRATIVE DISTRICTS

Professor Collingwood examines two demonstrative districts created by the plaintiffs. Both these demonstrative districts represent newly created incarnations of LD 9. Below, I will discuss both of these illustrative districts in the context of a number of traditional redistricting criteria. It has long been recognized that when considering prong one of the *Gingles* test that traditional redistricting criteria cannot be ignored when creating a minority-majority district. For example, irregularly shaped and/or non-compact districts may raise questions concerning whether race was the predominant factor in the drawing of district lines.

In a report issued by the North Dakota Redistricting Committee, the committee was charged by the Legislative Assembly to develop a legislative districting plan and, in doing so, to ensure

traditional redistricting criteria were followed. For example, the committee's plan should include districts which are compact, contiguous, and meet the legal requirement for population equality. Further, in developing the legislative districting plan the committee also considered other factors such as not splitting political subdivisions (e.g. counties and reservations) across legislative districts; preserving district cores; protecting incumbents; and respecting other communities of interest.⁹

A. Demonstrative District 1

Plaintiff's demonstrative District 1 (abbreviated D-D1) uses a land bridge to link Native American population clusters centered around the Turtle Mountain Reservation (currently in LD 9) and the Spirit Lake Reservation (currently in LD15). In fact, part of the boundary for the Spirit Lake Reservation is contiguous with a portion of the D-D1 boundary.

i. Population Deviation

The ideal district size of North Dakota legislative districts from the 2020 Census is 16,576 persons.¹⁰ LD 9 under the enacted plan contains 16,158 people, producing a deviation of -2.52%. LD 9 under D-D1 would contain a population of 17,096, 3.14% over the ideal district size.

ii. Compactness

There are myriad measures of compactness to analyze legislative districts. For this report, I make use of three of the most commonly employed compactness scores: Reock, Polsby-Popper, and Schwartzberg. The Reock measure is also denoted as the smallest circle score in that it compares the area of the district to the area of a circle. More formally the Reock measure is the *ratio of the district area to the area of the minimum circumscribing circle*.¹¹ The Polsby-Popper measure, a perimeter-to-area comparison, calculates the *ratio of the district area to the area of a circle with the same perimeter*.¹² The Schwartzberg measure is a ratio that compares the perimeter of a district to the *perimeter of a circle of equal area*.¹³

The Reock and Polsby-Popper measures range between 0 and 1, with one an indication of perfect compactness. For both measures a district analogous to a circle would score a value of 1. A circle would also score a value of one on the Schwartzberg index and less compact shapes would be represented by values greater than one. I modified the standard Schwartzberg measure in order that it would range from 0 to 1, with higher scores an indication of greater compactness.¹⁴ The

⁹Interim Redistricting Committee Report, pp. 19-30. Found at: <https://ndlegis.gov/files/resource/67-2021/legislative-management-final-reports/2021ssfinalreport.pdf>.

¹⁰Based on total population.

¹¹Quoted material from page 1160. Richard G. Niemi, Bernard Grofman, Carl Calucci, and Thomas Hofeller. 1990. "Measuring Compactness and the Role of a Compactness Standard in a Test for Partisan and Racial Gerrymandering." *Journal of Politics* 52: 1155-1181.

¹²Quoted material from page 1160. Richard G. Niemi, Bernard Grofman, Carl Calucci, and Thomas Hofeller. 1990. "Measuring Compactness and the Role of a Compactness Standard in a Test for Partisan and Racial Gerrymandering." *Journal of Politics* 52: 1155-1181.

¹³Quoted material from page 44. Joseph E. Schwartzberg. "Reapportionment, Gerrymanders, and the Notion of 'Compactness.'" *Minnesota Law Review* 50:443-452.

¹⁴Adjusted Score = (1/Schwartzberg Score)². This adjustment has been previously suggested in the academic literature. For example, see Daniel D. Polsby and Robert D. Popper. 1991. "The Third Criterion: Compactness as a Procedural Safeguard against Partisan Gerrymandering." *Yale Law and Policy Review* 9: 301-335 and Christopher P.

adjusted Schwartzberg scores presented below are now scaled in the same manner as the Reock and Polsby-Popper measures.

Table 3 compares Reock, Polsby-Popper, and Schwartzberg (adjusted) measures for LD 9 in the plaintiff Demonstrative Plan-1 and under the enacted plan. Using the Reock, Polsby-Popper, or adjusted Schwartzberg compactness measures, LD 9 in Demonstrative Plan-1 is less compact as compared to LD 9 in the enacted plan. The Reock score difference is .14, for the Polsby-Popper score it is .37, and the Schwartzberg score it is .31. For the Reock metric there is a 36% decrease in compactness between the two districts; for the Polsby-Popper measure there is a 63% decrease; and for the Schwartzberg measure the decrease is over half (53%).

Within Demonstrative Plan-1 as a whole, LD 9 ranks 45th out of forty-seven districts using the Reock measure.¹⁵ Using the Polsby-Popper measure, LD 9 ranks 44th in terms of compactness and for the Schwartzberg measure it ranks 45th in terms of compactness. For the enacted plan, LD 9 ranks 33rd in terms of compactness using the Reock measure; 5th using the Polsby-Popper measure; and 6th using the Schwartzberg measure. To summarize, using any of the three compactness measures deployed, LD 9 under plaintiff Demonstrative Plan-1 is less compact as compared to LD 9 under the enacted plan.

Table 3. Compactness Score Comparisons

Plan/District	Reock	Polsby-Popper	Schwartzberg-Adjusted
Demonstrative-1			
LD 9	.25	.22	.28
Rank	(45 th)	(44 th)	(45 th)
Enacted			
LD 9	.39	.59	.59
Rank	(33 rd)	(5 th)	(6 th)
Difference	.14	.37	.31

Note: A higher ranking indicates a less compact district. A ranking of one would be indicative of the most compact district and a ranking of 47th the least compact district.

iii. Communities of Interest

As a recognized traditional redistricting criteria, counties are important political subdivisions and, to the extent possible, should not be split across districts. On this metric the enacted plan splits 20 counties (38%), while Plan D-D1 splits 21 (40%). In the enacted plan, LD 9 splits only Towner County, while in plaintiff's D-D1 LD 9 splits three counties: Eddy, Pierce, and Rolette.

Chambers and Alan D. Miller. 2010. "A Measure of Bizarreness." *Quarterly Journal of Political Science* 5(1): 27-44.

¹⁵For these comparisons lower rankings are indicative of higher compactness. For example, a district ranking first would be the most compact district and a ranking of 47th would mean the district was the least compact.

iv. Core Retention

District core retention is another factor that can be considered under traditional redistricting criteria.¹⁶ Core retention for the various plans is measured as the percentage of the population in a new district carried over from the corresponding 2011 (benchmark) district. As such, district core retention is a measure that ranges from 0% to 100%.¹⁷ The higher the percentage, the more a district is representative of its former self. Under the enacted plan, district core retention for LD-9 was 75% using total population and 72% using voting age population. Under plaintiff's Plan D-D1, the core retention for LD 9 is 63% using total population and 63% using voting age population. In summary, core retention for LD 9 under D-D1 is lower than core retention for LD 9 under the enacted plan.

B. Demonstrative District 2

Plaintiff's demonstrative District 2 (abbreviated D-D2) is geographically similar to D-D1 in that it also links Native American population clusters centered around the Turtle Mountain Reservation (currently in LD 9) and the Spirit Lake Reservation (currently in LD15).

i. Population Deviation

Under the enacted plan LD 9 contains 16,158 people, producing a deviation of -2.52% from the ideal district size. D-D2 under plaintiff's illustrative plan would contain a population of 17,327, making it 4.53% over the ideal district size.

ii. Compactness

In this section I analyze compactness for D-D2 using the Reock, Polsby-Popper, and Schwartzberg measures (see Table 4). D-D2 has a Reock score of .20 compared to enacted LD 9 with a score of .39, producing a difference of .19. This equates to a drop of 49% in compactness. For the enacted plan, LD 9 ranks 33rd on compactness using the Reock score, while D-D2 ranks 45th on compactness using this measure (Again, a higher ranking equates with lower compactness). Looking at the Polsby-Popper measure LD 9 under D-D2 scores a .19, compared to enacted LD 9 at .59, for a difference of .40 (a 68% drop in compactness). LD 9 in the plaintiff illustrative plan ranks 46 out of 47 districts in terms of compactness (For reference, LD 9 in the enacted plan is the 5th most compact district on this measure). Finally, on the Schwartzberg measure, LD 9 under D-D2 has a value of .24, compared with .59 for LD-9 under the enacted plan, for a difference of .35. This equates to a decline of 59% in compactness. In comparison to the rest of plaintiff Illustrative Plan 2, D-D2 ranks 46th on the basis of the Schwartzberg measure, while LD 9 under the enacted plan ranks 6th.

¹⁶The presence of a district core is closely linked to incumbent electoral success and, as such, is an important element related to protecting incumbents across a redistricting cycle.

¹⁷District core retention is calculated using both total population and voting age population.

Table 4. Compactness Score Comparisons

Plan/District	Reock	Polsby-Popper	Schwartzberg-Adjusted
Demonstrative-2			
LD 9	.20	.19	.24
Rank	(45 th)	(46 th)	(46 th)
Enacted			
LD 9	.39	.59	.59
Rank	(33 rd)	(5 th)	(6 th)
Difference	.19	.40	.35

Note: A higher ranking indicates a less compact district. A ranking of one would be indicative of the most compact district and a ranking of 47th the least compact district.

iii. Communities of Interest

Under D-D2, a total of 20 counties are split across legislative districts, which is the same number of counties split under the state's enacted plan. However, where only Towner County is split under LD 9 in the enacted plan, LD 9 under D-D2 splits a total of three counties: Benson, Eddy, and Pierce.

iv. Core Retention

Under plaintiff's Demonstrative Plan D-D2, core retention for LD-9 is 70% using total population or 71% using voting age population. This represents some decline from that of enacted LD-9 which had core retention scores of 75% (Total Population) and 72% (Voting Age Population).

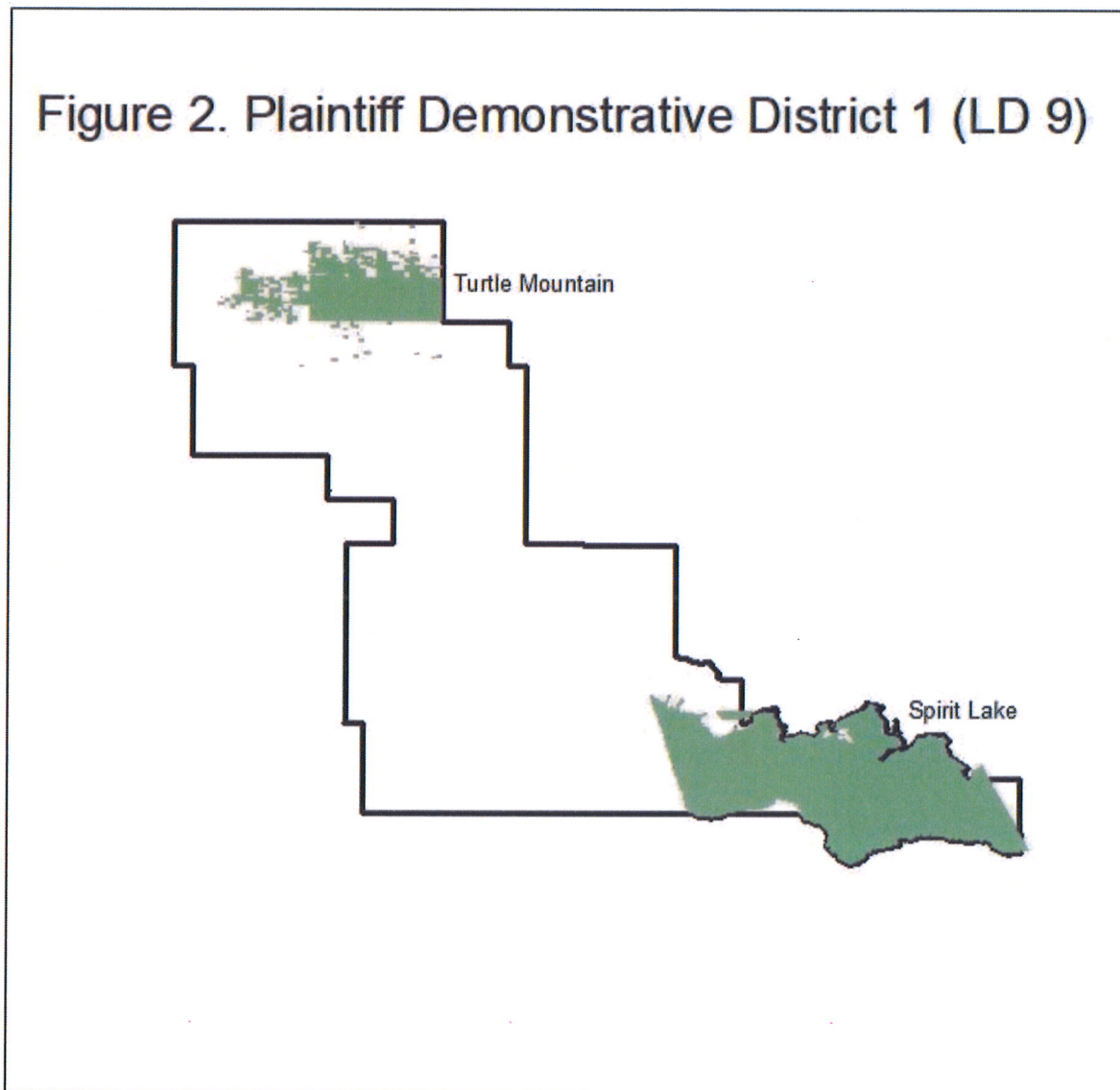
VII. SUMMARY AND CONCLUSIONS

In his expert report Professor Loren Collingwood has performed an analysis of *Gingles* prongs 2 and 3 for LD 9 and LD 15 under the state's enacted legislative districting plan. In the case of LD 9, it appears that Professor Collingwood's own analysis demonstrates that Native American-preferred candidates are not typically defeated by a white voting bloc. Thus, prong three of the *Gingles* test is not substantiated. Turning to LD 15, *Native Americans* comprise a substantial minority of the district's population. As such, the *Gingles* analysis fails on prong one in the case of LD 15. A successful vote dilution claim requires one to verify all three *Gingles* prongs, not one or two. In my opinion, this bar has not been met by the plaintiffs as it relates to LD 9 and LD 15 under the state's enacted plan.

Plaintiffs have drawn two illustrative districts that create a reconfigured LD 9. Both these illustrative districts encompass the Spirit Lake and Turtle Mountain Reservations. Additionally, territory from enacted LD 9 (which contains the Turtle Lake Reservation) and enacted LD 15 (which contains the Spirit Lake Reservation) is connected via a land bridge (see Figures 2 and 3 for maps of these illustrative districts). Both these plans produce a newly drawn LD 9 that performs worse on some traditional redistricting criteria as compared to LD 9 under the enacted plan. For example, using any of the three measures of compactness employed in this report, LD 9 under either illustrative plan is less compact than LD 9 under the enacted plan. In addition,

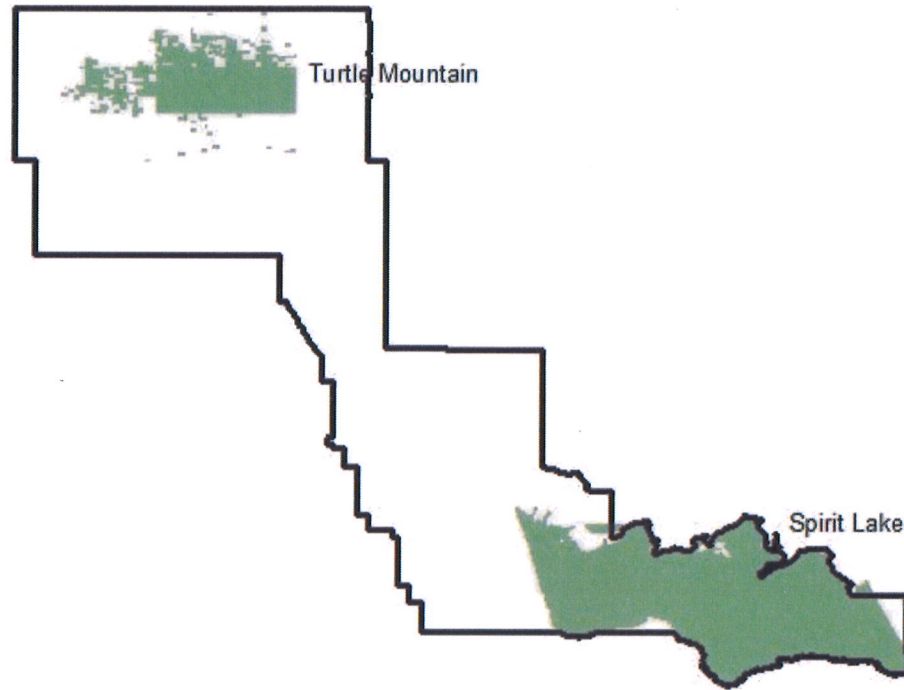
population deviation, core retention, and respect for communities of interest also appears diminished under the plaintiff's demonstrative plans for LD 9.

A degradation of traditional redistricting criteria, coupled with the fact that plaintiffs have drawn a district that specifically joins two Indian reservations along with pockets of surrounding Native American population via use of a land bridge, can certainly raise the question of whether the creation of LD 9 under the plaintiff demonstrative plans results in a racial gerrymander.¹⁸



¹⁸Centroid to centroid the distance between the two reservations is 77 miles.

Figure 3. Plaintiff Demonstrative District 2 (LD9)



VIII. DECLARATION

I declare under penalty of perjury under the laws of the United States that the foregoing is true and correct to the best of my knowledge.

Executed on January 17, 2023.

M.V. Hood III

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Appendix: Reliance Materials

Expert Report of Professor Loren Collingwood. *Turtle Mountain Band of Chippewa Indians, et. al. v. Alvin Jaeger* [3:22-cv-00022]. November 30, 2022.

Plaintiff Illustrative Plan 1 Shapefile.

Plaintiff Illustrative Plan 2 Shapefile.

North Dakota 2022 Enacted Legislative Plan Shapefile (<https://www.ndlegis.gov/assembly/67-2021/special/approved-legislative-redistricting-maps>).

North Dakota 2022 Enacted Legislative Plan Statistics (<https://www.ndlegis.gov/assembly/67-2021/session-interim/2021-legislative-redistricting-maps>).

Interim Redistricting Committee Report (<https://ndlegis.gov/files/resource/67-2021/legislative-management-final-reports/2021ssfinalreport.pdf>).

U.S. Census Bureau. 2020 P.L. 94-171 Data for North Dakota (<https://data.census.gov/table>).

U.S. Census Tiger/Line Shapefiles (<https://www.census.gov/geographies/mapping-files/time-series/geo/tiger-line-file.html>).

Curriculum Vitae
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Academic Positions:

University of Georgia
Director, SPIA Survey Research Center, 2016-present
Director of Graduate Studies, 2011-2016
Professor, 2013-present
Associate Professor, 2005-2013
Assistant Professor, 1999-2005
Texas Tech University
Visiting Assistant Professor, 1997-1999

Education:

Ph.D.	Political Science	Texas Tech University	1997
M.A.	Political Science	Baylor University	1993
B.S.	Political Science	Texas A&M University	1991

Peer-Reviewed Books:

Rural Republican Realignment in the Modern South: The Untold Story. 2022.
Columbia, SC: The University of South Carolina Press. (Seth C. McKee, co-author).

The Rational Southerner: Black Mobilization, Republican Growth, and the Partisan Transformation of the American South. 2012. New York: Oxford University Press.
(Quentin Kidd and Irwin L. Morris, co-authors).
[Softcover version in 2014 with new Epilogue]

Peer-Reviewed Publications:

“The Hardest Path to Reelection: Dueling Incumbent House Primaries in 2022.” 2022 (Online First). *The Forum*. (Seth C. McKee, co-author).

“Postal Voting in the 2020 Election.” 2022. *Journal of Election Administration, Research, and Practice* 1(1): 19-29. (Lonna Rae Atkeson, Colin Jones, Mason Reece, and Robert M. Stein, co-authors).

- “Partisan Schism in America’s Newest Swing State.” 2022 (Online First). *Party Politics*. (Seth C. McKee, co-author).
- “Getting the Message: Opinion Polarization over Election Law.” 2022. *Election Law Journal* 21(2): 124-134. (Seth C. McKee, co-author).
- “Tracking Hispanic Political Emergence in Georgia: An Update.” 2021. *Social Science Quarterly* 102(1): 259-268. (Charles S. Bullock, III, co-author).
- “Switching Sides but Still Fighting the Civil War in Southern Politics.” 2020. *Politics, Groups, and Identities* 10(1): 100-116. (Christopher Cooper, Scott H. Huffmon, Quentin Kidd, Gibbs Knotts, Seth C. McKee, co-authors).
- “The Election of African American State Legislators in the Modern South.” 2020. *Legislative Studies Quarterly* 45(4): 581-608. (Charles S. Bullock, III, William Hicks, Seth C. McKee, Adam S. Myers, and Daniel A. Smith, co-authors).
- “What’s in a Name? Gauging the Effect of Labels on Third Party Vote Shares.” 2022. *Journal of Elections, Public Opinion & Parties* 32(3): 542-555. (Seth C. McKee, co-author).
- “Why Georgia, Why? Peach State Residents’ Perceptions of Voting-Related Improprieties and their Impact on the 2018 Gubernatorial Election.” 2019. *Social Science Quarterly* 100(5): 1828-1847. (Seth C. McKee, co-author).
- “Palmetto Postmortem: Examining the Effects of the South Carolina Voter Identification Statute.” 2019. *Political Research Quarterly* 73(2): 492-505. (Scott E. Buchanan, co-author).
- “Contagious Republicanism in Louisiana, 1966-2008.” 2018. *Political Geography* 66(Sept): 1-13. (Jamie Monogan, co-author).
- “The Comeback Kid: Donald Trump on Election Day in 2016.” 2019. *PS: Political Science and Politics* 52(2): 239-242. (Seth C. McKee and Daniel A. Smith, co-authors).
- “Election Daze: Mode of Voting and Voter Preferences in the 2016 Presidential Election.” 2017-2018. *Florida Political Chronicle* 25(2): 123-141. (Seth C. McKee and Daniel A. Smith, co-authors).
- “Out of Step and Out of Touch: The Matter with Kansas in the 2014 Midterm.” 2017. *The Forum* 15(2): 291-312. (Seth C. McKee and Ian Ostrander, co-authors).
- “From Legal Theory to Practical Application: A How-To for Performing Vote Dilution Analyses.” 2018. *Social Science Quarterly* 99(2): 536-552. (Peter A. Morrison and Thomas M. Bryan, co-authors).
- “Race, Class, Religion and the Southern Party System: A Field Report from Dixie.” 2016. *The Forum* 14(1): 83-96.

- "*Black Votes Count: The 2014 Republican Senate Nomination in Mississippi.*" 2017. *Social Science Quarterly* 98(1): 89-106. (Seth C. McKee, coauthor).
- "Sunshine State Dilemma: Voting for the 2014 Governor of Florida." 2015. *Electoral Studies* 40: 293-299. (Seth C. McKee, co-author).
- "Tea Leaves and Southern Politics: Explaining Tea Party Support Among Southern Republicans." 2015. *Social Science Quarterly* 96(4): 923-940. (Quentin Kidd and Irwin L. Morris, co-authors).
- "True Colors: White Conservative Support for Minority Republican Candidates." 2015. *Public Opinion Quarterly* 79(1): 28-52. (Seth C. McKee, co-author).
- "Race and the Tea Party in the Old Dominion: Split-Ticket Voting in the 2013 Virginia Elections." 2015. *PS: Political Science and Politics* 48(1):107-114. (Quentin Kidd and Irwin L. Morris, co-authors).
- "The Damnedest Mess: An Empirical Evaluation of the 1966 Georgia Gubernatorial Election." 2014. *Social Science Quarterly* 96(1):104-118. (Charles S. Bullock, III, co-author).
- "Candidates, Competition, and the Partisan Press: Congressional Elections in the Early Antebellum Era." 2014. *American Politics Research* 42(5):670-783. (Jamie L. Carson, co-author).
[Winner of the 2014 Hahn-Sigelman Prize]
- "Strategic Voting in a U.S. Senate Election." 2013. *Political Behavior* 35(4):729-751. (Seth C. McKee, co-author).
- "Unwelcome Constituents: Redistricting and Countervailing Partisan Tides." 2013. *State Politics and Policy Quarterly* 13(2):203-224. (Seth C. McKee, co-author).
- "The Tea Party, Sarah Palin, and the 2010 Congressional Elections: The Aftermath of the Election of Barack Obama." 2012. *Social Science Quarterly* 93(5):1424-1435. (Charles S. Bullock, III, co-author).
- "Much Ado About Nothing?: An Empirical Assessment of the Georgia Voter Identification Statute." 2012. *State Politics and Policy Quarterly* 12(4):394-314. (Charles S. Bullock, III, co-author).
- "Achieving Validation: Barack Obama and Black Turnout in 2008." 2012. *State Politics and Policy Quarterly* 12:3-22. (Seth C. McKee and David Hill, co-authors).
- "They Just Don't Vote Like They Used To: A Methodology to Empirically Assess Election Fraud." 2012. *Social Science Quarterly* 93:76-94. (William Gillespie, co-author).

- “An Examination of Efforts to Encourage the Incidence of Early In-Person Voting in Georgia, 2008.” 2011. *Election Law Journal* 10:103-113. (Charles S. Bullock, III, co-author).
- “What Made Carolina Blue? In-migration and the 2008 North Carolina Presidential Vote.” 2010. *American Politics Research* 38:266-302. (Seth C. McKee, co-author).
- “Stranger Danger: Redistricting, Incumbent Recognition, and Vote Choice.” 2010. *Social Science Quarterly* 91:344-358. (Seth C. McKee, co-author).
- “Trying to Thread the Needle: The Effects of Redistricting in a Georgia Congressional District.” 2009. *PS: Political Science and Politics* 42:679-687. (Seth C. McKee, co-author).
- “Citizen, Defend Thyself: An Individual-Level Analysis of Concealed-Weapon Permit Holders.” 2009. *Criminal Justice Studies* 22:73-89. (Grant W. Neeley, co-author).
- “Two Sides of the Same Coin?: Employing Granger Causality Tests in a Time Series Cross-Section Framework.” 2008. *Political Analysis* 16:324-344. (Quentin Kidd and Irwin L. Morris, co-authors).
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- “Punch Cards, Jim Crow, and Al Gore: Explaining Voter Trust in the Electoral System in Georgia, 2000.” 2005. *State Politics and Policy Quarterly* 5:283-294. (Charles S. Bullock, III and Richard Clark, co-authors).
- “When Southern Symbolism Meets the Pork Barrel: Opportunity for Executive Leadership.” 2005. *Social Science Quarterly* 86:69-86. (Charles S. Bullock, III, co-author).
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- “Bugs in the NRC’s Doctoral Program Evaluation Data: From Mites to Hissing Cockroaches.” 1998. *PS* 31:829-835. (Nelson Dometrius, Quentin Kidd, and Kurt Shirkey, co-authors).
- “Boll Weevils and Roll-Call Voting: A Study in Time and Space.” 1998. *Legislative Studies Quarterly* 23:245-269. (Irwin Morris, co-author).
- “Give Us Your Tired, Your Poor,...But Make Sure They Have a Green Card: The Effects of Documented and Undocumented Migrant Context on Anglo Opinion Towards Immigration.” 1998. *Political Behavior* 20:1-16. (Irwin Morris, co-author).
- “¡Quedate o Vente!: Uncovering the Determinants of Hispanic Public Opinion Towards Immigration.” 1997. *Political Research Quarterly* 50:627-647. (Irwin Morris and Kurt Shirkey, co-authors).
- “¿Amigo o Enemigo?: Context, Attitudes, and Anglo Public Opinion toward Immigration.” 1997. *Social Science Quarterly* 78: 309-323. (Irwin Morris, co-author).

Book Chapters:

- “The 2020 Presidential Nomination Process.” 2021. In *The 2020 Presidential Election in the South*, eds. Branwell DuBose Kapeluck and Scott E. Buchanan. Lanham, MD: Rowman & Littlefield. (Aaron A. Hitefield, co-author).
- “Texas: A Shifting Republican Terrain.” 2021. In *The New Politics of the Old South*, 7th ed., Charles S. Bullock, III and Mark J. Rozell, editors. New York: Rowman and Littlefield Publishers, Inc. (Seth C. McKee, co-author).
- “Texas: Big Red Rides On.” 2018. In *The New Politics of the Old South*, 6th ed., Charles S. Bullock, III and Mark J. Rozell, editors. New York: Rowman and Littlefield Publishers, Inc. (Seth C. McKee, co-author).
- “The Participatory Consequences of Florida Redistricting.” 2015. In *Jigsaw Puzzle Politics in the Sunshine State*, Seth C. McKee, editor. Gainesville, FL: University of Florida Press. (Danny Hayes and Seth C. McKee, co-authors).
- “Texas: Political Change by the Numbers.” 2014. In *The New Politics of the Old South*, 5th ed., Charles S. Bullock, III and Mark J. Rozell, editors. New York: Rowman and Littlefield Publishers, Inc. (Seth C. McKee, co-author).
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- “The Reintroduction of the *Elephas maximus* to the Southern United States: The Rise of Republican State Parties, 1960-2000.” 2010. In *Controversies in Voting Behavior*, 5th ed., David Kimball, Richard G. Niemi, and Herbert F. Weisberg, editors. Washington, DC: CQ Press. (Quentin Kidd and Irwin Morris, co-authors).
[Reprint of 2004 *APR* article with Epilogue containing updated analysis and other original material.]
- “The Texas Governors.” 1997. In *Texas Policy and Politics*, Mark Somma, editor. Needham Heights, MA: Simon & Schuster.

Book Reviews:

- The Resilience of Southern Identity: Why the South Still Matters in the Minds of Its People*. 2018.
Reviewed for *The Journal of Southern History*.

Other Publications:

- “Provisionally Admitted College Students: Do They Belong in a Research University?” 1998. In *Developmental Education: Preparing Successful College Students*, Jeanne Higbee and Patricia L. Dwinell, editors. Columbia, SC: National Resource Center for the First-Year Experience & Students in Transition (Don Garnett, co-author).

NES Technical Report No. 52. 1994. "The Reliability, Validity, and Scalability of the Indicators of Gender Role Beliefs and Feminism in the 1992 American National Election Study: A Report to the ANES Board of Overseers." (Sue Tolleson-Rinehart, Douglas R. Davenport, Terry L. Gilmour, William R. Moore, Kurt Shirkey, co-authors).

Grant-funded Research (UGA):

Co-Principal Investigator. "Georgia Absentee Ballot Signature Verification Study." Budget: \$36,950. 2021. (with Audrey Haynes and Charles Stewart III). Funded by the Georgia Secretary of State.

Co-Principal Investigator. "The Integrity of Mail Voting in the 2020 Election." Budget: \$177,080. (with Lonna Atkeson and Robert Stein). Funded by the National Science Foundation.

Co-Principal Investigator. "Georgia Voter Verification Study." Budget: \$52,060. 2020. (with Audrey Haynes). Funded by Center for Election Innovation and Research.

Co-Principal Investigator. "An Examination of Non-Precinct Voting in the State of Georgia." Budget: \$47,000. October 2008-July 2009. (with Charles S. Bullock, III). Funded by the Pew Charitable Trust.

Co-Principal Investigator. "The Best Judges Money Can Buy?: Campaign Contributions and the Texas Supreme Court." (SES-0615838) Total Budget: \$166,576; UGA Share: \$69,974. September 2006-August 2008. (with Craig F. Emmert). Funded by the National Science Foundation. REU Supplemental Award (2008-2009): \$6,300.

Principal Investigator. "Payola Justice or Just Plain 'Ole Politics Texas-Style?: Campaign Finance and the Texas Supreme Court." \$5,175. January 2000-Januray 2001. Funded by the University of Georgia Research Foundation, Inc.

Curriculum Grants (UGA):

Learning Technology Grant: "Converting Ideas Into Effective Action: An Interactive Computer and Classroom Simulation for the Teaching of American Politics." \$40,000. January-December 2004. (with Loch Johnson). Funded by the Office of Instructional Support and Technology, University of Georgia.

Dissertation:

"Capturing Bubba's Heart and Mind: Group Consciousness and the Political Identification of Southern White Males, 1972-1994."

Chair: Professor Sue Tolleson-Rinehart

Papers and Activities at Professional Meetings:

"Rural Voters in Southern U.S. House Elections." 2021. (with Seth C. McKee). Presented at the Virtual American Political History Conference. University of Georgia. Athens, GA.

- “Mail It In: An Analysis of the Peach State’s Response to the Coronavirus Pandemic.” 2020. (with Audrey Haynes). Presented at the Election Science, Reform, and Administrative Conference. Gainesville, FL. [Virtually Presented].
- “Presidential Republicanism and Democratic Darn Near Everything Else.” 2020. (with Seth C. McKee). Presented at the Citadel Southern Politics Symposium. Charleston, SC.
- “Why Georgia, Why? Peach State Residents’ Perceptions of Voting-Related Improprieties and their Impact on the 2018 Gubernatorial Election.” 2019. (with Seth C. McKee). Presented at the Election Science, Reform, and Administrative Conference. Philadelphia, PA.
- “The Demise of White Class Polarization and the Newest American Politics.” 2019. (with Seth C. McKee). Presented at the Annual Meeting of the Southern Political Science Association. Austin, TX.
- “The Geography of Latino Growth in the American South.” 2018. (with Seth C. McKee). State Politics and Policy Conference. State College, PA.
- “A History and Analysis of Black Representation in Southern State Legislatures.” 2018. (with Charles S. Bullock, III, William D. Hicks, Seth C. McKee, Adam S. Myers, and Daniel A. Smith). Presented at the Citadel Symposium on Southern Politics. Charleston, SC.
- Discussant. Panel titled “Southern Distinctiveness?” 2018. The Citadel Symposium on Southern Politics. Charleston, SC.
- Roundtable Participant. Panel titled “The 2018 Elections.” 2018. The Citadel Symposium on Southern Politics. Charleston, SC.
- “Still Fighting the Civil War?: Southern Opinions on the Confederate Legacy.” 2018. (with Christopher A. Cooper, Scott H. Huffmon, Quentin Kidd, H. Gibbs Knotts, and Seth C. McKee). The Citadel Symposium on Southern Politics. Charleston, SC.
- “Tracking Hispanic Growth in the American South.” 2018. (with Seth C. McKee). Presented at the Annual Meeting of the Southern Political Science Association. New Orleans, LA.
- “An Assessment of Online Voter Registration in Georgia.” 2017. (with Greg Hawrelak and Colin Phillips). Presented at the Annual Meeting of Election Sciences, Reform, and Administration. Portland, Oregon.
- Moderator. Panel titled “What Happens Next.” 2017. The Annual Meeting of Election Sciences, Reform, and Administration. Portland, Oregon.
- “Election Daze: Time of Vote, Mode of Voting, and Voter Preferences in the 2016 Presidential Election.” 2017. (with Seth C. McKee and Dan Smith). Presented at the Annual Meeting of the State Politics and Policy Conference. St. Louis, MO.

“Palmetto Postmortem: Examining the Effects of the South Carolina Voter Identification Statute.” 2017. (with Scott E. Buchanan). Presented at the Annual Meeting of the Southern Political Science Association. New Orleans, LA.

Panel Chair and Presenter. Panel titled “Assessing the 2016 Presidential Election.” 2017. UGA Elections Conference. Athens, GA.

Roundtable Discussant. Panel titled “Author Meets Critics: Robert Mickey's Paths Out of Dixie.” 2017. The Annual Meeting of the Southern Political Science Association. New Orleans, LA.

“Out of Step and Out of Touch: The Matter with Kansas in the 2014 Midterm Election.” (with Seth C. McKee and Ian Ostrander). 2016. Presented at the Annual Meeting of the Southern Political Science Association. San Juan, Puerto Rico.

“Contagious Republicanism in North Carolina and Louisiana, 1966-2008.”(with Jamie Monogan). 2016. Presented at the Citadel Symposium on Southern Politics. Charleston, SC.

“The Behavioral Implications of Racial Resentment in the South: The Intervening Influence of Party.” (with Quentin Kidd and Irwin L. Morris). 2016. Presented at the Citadel Symposium on Southern Politics. Charleston, SC.

Discussant. Panel titled “Partisan Realignment in the South.” 2016. The Citadel Symposium on Southern Politics. Charleston, SC.

“Electoral Implications of Racial Resentment in the South: The Influence of Party.” (with Quentin Kidd and Irwin L. Morris). 2016. Presented at the Annual Meeting of the American Political Science Association. Philadelphia, PA.

“Racial Resentment and the Tea Party: Taking Regional Differences Seriously.” (with Quentin Kidd and Irwin L. Morris). 2015. Poster presented at the Annual Meeting of the American Political Science Association. San Francisco, CA.

“Race and the Tea Party in the Palmetto State: Tim Scott, Nikki Haley, Bakari Sellers and the 2014 Elections in South Carolina.” (with Quentin Kidd and Irwin L. Morris). 2015. Presented at the Annual Meeting of the Southern Political Science Association. New Orleans, LA.

Participant. Roundtable on the 2014 Midterm Elections in the Deep South. Annual Meeting of the Southern Political Science Association. New Orleans, LA.

“Race and the Tea Party in the Old Dominion: Split-Ticket Voting in the 2013 Virginia Elections.” (with Irwin L. Morris and Quentin Kidd). 2014. Paper presented at the Citadel Symposium on Southern Politics. Charleston, SC.

- “Race and the Tea Party in the Old Dominion: Down-Ticket Voting and Roll-Off in the 2013 Virginia Elections.” (with Irwin L. Morris and Quentin Kidd). 2014. Paper presented at the Annual Meeting of the Southern Political Science Association. New Orleans, LA.
- “Tea Leaves and Southern Politics: Explaining Tea Party Support Among Southern Republicans.” (with Irwin L. Morris and Quentin Kidd). 2013. Paper presented at the Annual Meeting of the Southern Political Science Association. Orlando, FL.
- “The Tea Party and the Southern GOP.” (with Irwin L. Morris and Quentin Kidd). 2012. Research presented at the Effects of the 2012 Elections Conference. Athens, GA.
- “Black Mobilization in the Modern South: When Does Empowerment Matter?” (with Irwin L. Morris and Quentin Kidd). 2012. Paper presented at the Citadel Symposium on Southern Politics. Charleston, SC.
- “The Legislature Chooses a Governor: Georgia’s 1966 Gubernatorial Election.” (with Charles S. Bullock, III). 2012. Paper presented at the Citadel Symposium on Southern Politics. Charleston, SC.
- “One-Stop to Victory? North Carolina, Obama, and the 2008 General Election.” (with Justin Bullock, Paul Carlsen, Perry Joiner, and Mark Owens). 2011. Paper presented at the Annual Meeting of the Southern Political Science Association. New Orleans.
- “Redistricting and Turnout in Black and White.” (with Seth C. McKee and Danny Hayes). 2011. Paper presented the Annual Meeting of the Midwest Political Science Association. Chicago, IL.
- “One-Stop to Victory? North Carolina, Obama, and the 2008 General Election.” (with Justin Bullock, Paul Carlsen, Perry Joiner, Jeni McDermott, and Mark Owens). 2011. Paper presented at the Annual Meeting of the Midwest Political Science Association Meeting. Chicago, IL.
- “Strategic Voting in the 2010 Florida Senate Election.” (with Seth C. McKee). 2011. Paper Presented at the Annual Meeting of the Florida Political Science Association. Jupiter, FL.
- “The Republican Bottleneck: Congressional Emergence Patterns in a Changing South.” (with Christian R. Grose and Seth C. McKee). Paper presented at the Annual Meeting of the Southern Political Science Association. New Orleans, LA.
- “Capturing the Obama Effect: Black Turnout in Presidential Elections.” (with David Hill and Seth C. McKee) 2010. Paper presented at the Annual Meeting of the Florida Political Science Association. Jacksonville, FL.
- “The Republican Bottleneck: Congressional Emergence Patterns in a Changing South.” (with Seth C. McKee and Christian R. Grose). 2010. Paper presented at the Citadel Symposium on Southern Politics. Charleston, SC.
- “Black Mobilization and Republican Growth in the American South: The More Things

- Change the More They Stay the Same?” (with Quentin Kidd and Irwin L. Morris). 2010. Paper presented at the Citadel Symposium on Southern Politics. Charleston, SC.
- “Unwelcome Constituents: Redistricting and Incumbent Vote Shares.” (with Seth C. McKee). 2010. Paper presented at the Annual Meeting of the Southern Political Science Association. Atlanta, GA.
- “Black Mobilization and Republican Growth in the American South: The More Things Change the More They Stay the Same?” (with Quentin Kidd and Irwin L. Morris). 2010. Paper presented at the Annual Meeting of the Southern Political Science Association. Atlanta, GA.
- “The Impact of Efforts to Increase Early Voting in Georgia, 2008.” (With Charles S. Bullock, III). 2009. Presentation made at the Annual Meeting of the Georgia Political Science Association. Callaway Gardens, GA.
- “Encouraging Non-Precinct Voting in Georgia, 2008.” (With Charles S. Bullock, III). 2009. Presentation made at the Time-Shifting The Vote Conference. Reed College, Portland, OR.
- “What Made Carolina Blue? In-migration and the 2008 North Carolina Presidential Vote.” (with Seth C. McKee). 2009. Paper presented at the Annual Meeting of the Florida Political Science Association. Orlando, FL.
- “Swimming with the Tide: Redistricting and Voter Choice in the 2006 Midterm.” (with Seth C. McKee). 2009. Paper presented at the Annual Meeting of the Midwest Political Science Association. Chicago.
- “The Effect of the Partisan Press on U.S. House Elections, 1800-1820.” (with Jamie Carson). 2008. Paper presented at the Annual Meeting of the History of Congress Conference. Washington, D.C.
- “Backward Mapping: Exploring Questions of Representation via Spatial Analysis of Historical Congressional Districts.” (Michael Crespín). 2008. Paper presented at the Annual Meeting of the History of Congress Conference. Washington, D.C.
- “The Effect of the Partisan Press on U.S. House Elections, 1800-1820.” (with Jamie Carson). 2008. Paper presented at the Annual Meeting of the Midwest Political Science Association. Chicago.
- “The Rational Southerner: The Local Logic of Partisan Transformation in the South.” (with Quentin Kidd and Irwin L. Morris). 2008. Paper presented at the Citadel Symposium on Southern Politics. Charleston, SC.
- “Stranger Danger: The Influence of Redistricting on Candidate Recognition and Vote Choice.” (with Seth C. McKee). 2008. Paper presented at the Annual Meeting of the Southern Political Science Association. New Orleans.

“Backward Mapping: Exploring Questions of Representation via Spatial Analysis of Historical Congressional Districts.” (with Michael Crespin). 2007. Paper presented at the Annual Meeting of the American Political Science Association. Chicago.

“Worth a Thousand Words? : An Analysis of Georgia’s Voter Identification Statute.” (with Charles S. Bullock, III). 2007. Paper presented at the Annual Meeting of the Southwestern Political Science Association. Albuquerque.

“Gerrymandering on Georgia’s Mind: The Effects of Redistricting on Vote Choice in the 2006 Midterm Election.” (with Seth C. McKee). 2007. Paper presented at the Annual Meeting of The Southern Political Science Association. New Orleans.

“Personalismo Politics: Partisanship, Presidential Popularity and 21st Century Southern Politics.” (with Quentin Kidd and Irwin L. Morris). 2006. Paper presented at the Annual Meeting of the American Political Science Association. Philadelphia.

“Explaining Soft Money Transfers in State Gubernatorial Elections.” (with William Gillespie and Troy Gibson). 2006. Paper presented at the Annual Meeting of the Midwest Political Science Association. Chicago.

“Two Sides of the Same Coin?: A Panel Granger Analysis of Black Electoral Mobilization and GOP Growth in the South, 1960-2004.” (with Quentin Kidd and Irwin L. Morris). 2006. Paper presented at the Citadel Symposium on Southern Politics. Charleston, SC.

“Hispanic Political Emergence in the Deep South, 2000-2004.” (With Charles S. Bullock, III). 2006. Paper presented at the Citadel Symposium on Southern Politics. Charleston.

“Black Mobilization and the Growth of Southern Republicanism: Two Sides of the Same Coin?” (with Quentin Kidd and Irwin L. Morris). 2006. Paper presented at the Annual Meeting of the Southern Political Science Association. Atlanta.

“Exploring the Linkage Between Black Turnout and Down-Ticket Challenges to Black Incumbents.” (With Troy M. Gibson). 2006. Paper presented at the Annual Meeting of the Southern Political Science Association. Atlanta.

“Race and the Ideological Transformation of the Democratic Party: Evidence from the Bayou State.” 2004. Paper presented at the Biennial Meeting of the Citadel Southern Politics Symposium. Charleston.

“Tracing the Evolution of Hispanic Political Emergence in the Deep South.” 2004. (Charles S. Bullock, III). Paper presented at the Biennial Meeting of the Citadel Southern Politics Symposium. Charleston.

“Much Ado about Something? Religious Right Status in American Politics.” 2003. (With Mark C. Smith). Paper presented at the Annual Meeting of the Midwest Political Science Association. Chicago.

- “Tracking the Flow of Non-Federal Dollars in U. S. Senate Campaigns, 1992-2000.” 2003. (With Janna Deitz and William Gillespie). Paper presented at the Annual Meeting of the Midwest Political Science Association. Chicago.
- “PAC Cash and Votes: Can Money Rent a Vote?” 2002. (With William Gillespie). Paper presented at the Annual Meeting of the Southern Political Science Association. Savannah.
- “What Can Gubernatorial Elections Teach Us About American Politics?: Exploiting and Underutilized Resource.” 2002. (With Quentin Kidd and Irwin L. Morris). Paper presented at the Annual Meeting of the American Political Science Association. Boston.
- “I Know I Voted, But I’m Not Sure It Got Counted.” 2002. (With Charles S. Bullock, III and Richard Clark). Paper presented at the Annual Meeting of the Southwestern Social Science Association. New Orleans.
- “Race and Southern Gubernatorial Elections: A 50-Year Assessment.” 2002. (With Quentin Kidd and Irwin Morris). Paper presented at the Biennial Southern Politics Symposium. Charleston, SC.
- “Top-Down or Bottom-Up?: An Integrated Explanation of Two-Party Development in the South, 1960-2000.” 2001. Paper presented at the Annual Meeting of the Southern Political Science Association. Atlanta.
- “Cash, Congress, and Trade: Did Campaign Contributions Influence Congressional Support for Most Favored Nation Status in China?” 2001. (With William Gillespie). Paper presented at the Annual Meeting of the Southwestern Social Science Association. Fort Worth.
- “Key 50 Years Later: Understanding the Racial Dynamics of 21st Century Southern Politics” 2001. (With Quentin Kidd and Irwin Morris). Paper presented at the Annual Meeting of the Southern Political Science Association. Atlanta.
- “The VRA and Beyond: The Political Mobilization of African Americans in the Modern South.” 2001. (With Quentin Kidd and Irwin Morris). Paper presented at the Annual Meeting of the American Political Science Association. San Francisco.
- “Payola Justice or Just Plain ‘Ole Politics Texas Style?: Campaign Finance and the Texas Supreme Court.” 2001. (With Craig Emmert). Paper presented at the Annual Meeting of the Midwest Political Science Association. Chicago.
- “The VRA and Beyond: The Political Mobilization of African Americans in the Modern South.” 2000. (With Irwin Morris and Quentin Kidd). Paper presented at the Annual Meeting of the Southern Political Science Association. Atlanta.
- “Where Have All the Republicans Gone? A State-Level Study of Southern Republicanism.” 1999. (With Irwin Morris and Quentin Kidd). Paper presented at the Annual Meeting of the Southern Political Science Association. Savannah.

- “Elephants in Dixie: A State-Level Analysis of the Rise of the Republican Party in the Modern South.” 1999. (With Irwin Morris and Quentin Kidd). Paper presented at the Annual Meeting of the American Political Science Association. Atlanta.
- “Stimulant to Turnout or Merely a Convenience?: Developing an Early Voter Profile.” 1998. (With Quentin Kidd and Grant Neeley). Paper presented at the Annual Meeting of the Southern Political Science Association. Atlanta.
- “The Impact of the Texas Concealed Weapons Law on Crime Rates: A Policy Analysis for the City of Dallas, 1992-1997.” 1998. (With Grant W. Neeley). Paper presented to the Annual Meeting of the Midwest Political Science Association. Chicago.
- “Analyzing Anglo Voting on Proposition 187: Does Racial/Ethnic Context Really Matter?” 1997. (With Irwin Morris). Paper presented to the Annual Meeting of the Southern Political Science Association. Norfolk.
- “Capturing Bubba's Heart and Mind: Group Consciousness and the Political Identification of Southern White Males, 1972-1994.” 1997. Paper presented at the Annual Meeting of the Midwest Political Science Association. Chicago.
- “Of Byrds[s] and Bumpers: A Pooled Cross-Sectional Study of the Roll-Call Voting Behavior of Democratic Senators from the South, 1960-1995.” 1996. (With Quentin Kidd and Irwin Morris). Paper presented to the Annual Meeting of the Southern Political Science Association. Atlanta.
- “Pest Control: Southern Politics and the Eradication of the Boll Weevil.” 1996. (With Irwin Morris). Paper presented to the Annual Meeting of the American Political Science Association. San Francisco.
- “Fit for the Greater Functions of Politics: Gender, Participation, and Political Knowledge.” 1996. (With Terry Gilmour, Kurt Shirkey, and Sue Tolleson-Rinehart). Paper presented to the Annual Meeting of the Midwest Political Science Association. Chicago.
- “¿Amigo o Enemigo?: Racial Context, Attitudes, and White Public Opinion on Immigration.” 1996. (With Irwin Morris). Paper presented to the Annual Meeting of the Midwest Political Science Association. Chicago.
- “¿Quedate o Vente!: Uncovering the Determinants of Hispanic Public Opinion Towards Immigration.” 1996. (With Irwin Morris and Kurt Shirkey). Paper presented to the Annual Meeting of the Southwestern Political Science Association. Houston.
- “Downs Meets the Boll Weevil: When Southern Democrats Turn Left.” 1995. (With Irwin Morris). Paper presented to the Annual Meeting of the Southern Political Science Association. Tampa.
- “¿Amigo o Enemigo?: Ideological Dispositions of Whites Residing in Heavily Hispanic Areas.” 1995. (With Irwin Morris). Paper presented to the Annual Meeting of the Southern Political Science Association. Tampa.

Chair. Panel titled “Congress and Interest Groups in Institutional Settings.” 1995. Annual Meeting of the Southwestern Political Science Association. Dallas.

“Death of the Boll Weevil?: The Decline of Conservative Democrats in the House.” 1995. (With Kurt Shirkey). Paper presented to the Annual Meeting of the Southwestern Political Science Association. Dallas.

“Capturing Bubba’s Heart and Mind: The Political Identification of Southern White Males.” 1994. (With Sue Tolleson-Rinehart). Paper presented to the Annual Meeting of the Southern Political Science Association. Atlanta.

Areas of Teaching Competence:

American Politics: Behavior and Institutions
Public Policy
Scope, Methods, Techniques

Teaching Experience:

University of Georgia, 1999-present.
Graduate Faculty, 2003-present.
Provisional Graduate Faculty, 2000-2003.
Distance Education Faculty, 2000-present.

Texas Tech University, 1993-1999.
Visiting Faculty, 1997-1999.
Graduate Faculty, 1998-1999.
Extended Studies Faculty, 1997-1999.
Teaching Assistant, 1993-1997.

Courses Taught:

Undergraduate:

American Government and Politics, American Government and Politics (Honors),
Legislative Process, Introduction to Political Analysis, American Public Policy, Political
Psychology, Advanced Simulations in American Politics (Honors), Southern Politics,
Southern Politics (Honors), Survey Research Internship

Graduate:

Election Administration and Related Issues (Election Sciences), Political Parties and Interest
Groups, Legislative Process, Seminar in American Politics, Southern Politics; Publishing for
Political Science

Editorial Boards:

Social Science Quarterly. Member. 2011-present.

Election Law Journal. Member. 2013-present.

Other Professional Service:

Listed expert. MIT Election Data and Science Lab.

Keynote Address. 2020 Symposium on Southern Politics. The Citadel. Charleston, SC.

Institutional Service (University-Level):

University Information Technology Committee, 2022-present.

University Promotion and Tenure Committee, 2019-2022.

University Program Review Committee, 2009-2011.

Chair, 2010-2011

Vice-Chair, 2009-2010.

Graduate Council, 2005-2008.

Program Committee, 2005-2008.

Chair, Program Committee, 2007-2008.

University Libraries Committee, 2004-2014.

Search Committee for University Librarian and Associate Provost, 2014.

Expert Report of Dr. Loren Collingwood

Loren Collingwood

2023-01-17

Executive Summary

In this report, I examine past election results in North Dakota's recently enacted Legislative District 4. I do this to determine if voting is racially polarized—i.e., if Native American voters generally prefer one set of candidates, and white voters generally prefer a different set of candidates. In conducting this analysis, I analyzed 35 general elections from 2014 to 2022, and used the Ecological Inference (EI) and Rows by Columns (RxC) statistical methods to evaluate if racially polarized voting (RPV) exists. RPV is present in every election contest.

I also conducted electoral performance analyses in the following jurisdictions: The newly adopted full District 4, as well as Subdistricts 4A and 4B. An electoral performance analysis reconstructs previous election results based on new district boundaries to assess whether a Native or white preferred candidate is most likely to win in a given jurisdictions under consideration (i.e., the newly adopted legislative map).

Overall, the accumulated evidence leads me to conclude the following:

- Racially polarized voting (RPV) is present in the areas comprising the newly adopted Legislative District 4. This is particularly clear in the 2016 elections featuring three Native American candidates, and is also evident in the 2022 contest featuring a Native American candidate (Moniz).
- I used two well-known statistical methods to assess RPV, which consistently demonstrated racially polarized voting patterns between Native Americans and non-Hispanic white voters.
- Native American voters cohesively prefer the same candidates for political office in the newly adopted Legislative District 4. White voters cohesively prefer a different set of candidates for political office.
- In my reconstituted electoral performance analysis, Native American-preferred candidates lose every single race in the full District 4 for a block rate of 100%; but win handily in the newly adopted Legislative Sub-District 4A (33 of 34 contests) for a block rate of 3%. However, Native American-preferred candidates lose 34 of 34 contests in the newly adopted Legislative Sub-District 4B for a block rate of 100%.
- In the recent legislative general election held Sub-District 4A, the Native-American-preferred candidate, Lisa Finley-Deville, who is Native-American herself, won

handily in District 4A 69% to 31% for Terry Burton Jones. A correlation analysis in this contest shows a relationship between percent Native-American and percent Finley-Deville over 0.7 on a 0-1 scale – a very strong relationship.

- Native-American voters strongly backed Native-American candidate, Cesar Alvarez, in the 2016 Legislative District 4 election, whereas white voters split their votes evenly between two different candidates.

My opinions are based on the following data sources: Statewide and local North Dakota general elections from 2014-2022; 2020 U.S. Census voting age population data taken from Dave's Redistricting, and North Dakota Legislative Districts shape files.

Background and Qualifications

I am an associate professor of political science at the University of New Mexico. Previously, I was an associate professor of political science and co-director of civic engagement at the Center for Social Innovation at the University of California, Riverside. I have published two books with *Oxford University Press*, 40 peer-reviewed journal articles, and nearly a dozen book chapters focusing on sanctuary cities, race/ethnic politics, election administration, and racially polarized voting. I received a Ph.D. in political science with a concentration in political methodology and applied statistics from the University of Washington in 2012 and a B.A. in psychology from the California State University, Chico, in 2002. I have attached my curriculum vitae, which includes an up-to-date list of publications.

In between my B.A. and Ph.D., I spent 3-4 years working in private consulting for the survey research firm Greenberg Quinlan Rosner Research in Washington, D.C. I also founded the research firm Collingwood Research, which focuses primarily on the statistical and demographic analysis of political data for a wide array of clients, and lead redistricting and map-drawing and demographic analysis for the Inland Empire Funding Alliance in Southern California. I was the redistricting consultant for the West Contra Costa Unified School District, CA, independent redistricting commission in which I am charged with drawing court-ordered single member districts. I am contracted with Roswell, NM Independent School District to draw single member districts.

I served as a testifying expert for the plaintiff in the Voting Rights Act Section 2 case *NAACP v. East Ramapo Central School District*, No. 17 Civ. 8943 (S.D.N.Y.), on which I worked from 2018 to 2020. I am the quantitative expert in *LULAC vs. Pate (Iowa)*, 2021, and have filed an expert report in that case. I am the BISG expert for plaintiff in *LULAC Texas, et al. v. John Scott, et al.*, having filed one report in that case. I am the racially polarized voting expert for the plaintiff in *East St. Louis Branch NAACP, et al. vs. Illinois State Board of Elections, et al.*, having filed two reports in that case, and submitted written testimony. I am the Senate Factors expert for plaintiff in *Pendergrass v. Raffensperger (N.D. Ga. 2021)*, having filed a report in that case and submitted written testimony. I am the racially polarized voting expert for plaintiff in *Johnson, et al., v. WEC, et al., No. 2021AP1450-OA*, having filed three reports in that case and submitted written testimony. I am the racially polarized voting expert for plaintiff in *Faith Rivera, et al. v. Scott Schwab and Michael Abbott No. 2022-CV-000089*. I have filed a report in that case and provided testimony. I served as the RPV

expert in *Lower Brule Sioux Tribe v. Lyman County* where I filed a report and testified at trial. I am the RPV expert for plaintiff in *Soto Palmer et al. vs. Hobbs et al.* and have filed a report and been deposed. In each instance courts have accepted my opinion. In this case I am compensated at a rate of \$325/hour.

District 4A Characteristics

District 4A has a Native American voting age population of 67.2%. It scores very high on measures of compactness. Two common measures are the Reock and Polsby-Popper scores. District 4A has a Reock score of .45 and a Polsby-Popper score of .57. These scores reflect a very compact district.

Racially Polarized Voting

Racially polarized voting (RPV) occurs when one racial group (i.e., Native American voters) consistently votes for one candidate or set of candidates, and another racial group (i.e., non-Hispanic white voters) regularly votes for another candidate or set of candidates. I analyze multiple elections across four election years to determine whether a pattern of RPV is present in a given geography and/or political jurisdiction (i.e., statewide, Legislative District 4, etc.). In an election contest between two candidates, RPV is present when a majority of voters belonging to one racial/ethnic group vote for one candidate and a majority of voters who belong to another racial/ethnic group prefer the other candidate. The favored candidate of a given racial group is called a "candidate of choice." However, if a majority of voters (i.e., 50%+1) of one racial group back a particular candidate and so do a majority of voters from another racial group, then RPV is not present in that contest.

Racially polarized voting does not mean voters are racist or intend to discriminate. In situations where RPV is clearly present, however, majority voters may often be able to block minority voters from electing candidates of choice by voting as a broadly unified bloc against minority voters' preferred candidate.

I examine RPV in the context of North Dakota statewide general elections – subsetting to voting districts located inside of the newly enacted District 4.

Ecological Inference

To determine if RPV exists, experts must generally infer individual level voting behavior from aggregate data – a problem called ecological inference. We turn to aggregate data because most of the time we do not have publicly available survey data on all election contests and in particular geographic areas where we want to see if RPV is present. In general, we want to know how groups of voters (i.e., Native Americans or non-Hispanic whites) voted in a particular election when all we have to analyze are precinct vote returns and the demographic composition of the people who live in those precincts.

Experts have at their disposal several methods to analyze RPV: homogeneous precinct analysis (i.e., taking the vote average across high density white precincts vs. high density

Black precincts), ecological regression (ER), ecological inference (EI), and ecological inference Rows by Columns (RxC), which is designed specifically for the multi-candidate, multi-racial group environment, though all of these methods can be used to assess whether RPV is present in diverse election environments involving multiple candidates and multiple groups. In this report I rely on the ecological inference (EI) and RxC method to assess whether voting is racially polarized. I also focus my attention on the two top of the ticket candidates in each contest.

The R software package, eiCompare (Collingwood et al. 2020), builds upon packages eiPack (Lau, Moore, and Kellermann 2020) and ei (King and Roberts 2016) to streamline RPV analysis, and includes all of these aforementioned statistical methods. In this report I include ecological inference estimates accounting for variation in turnout by race. That is, I divide candidate vote by voting age population and include an estimate for no vote. I then calculate vote choice estimates by race for only people estimated to have voted. In this way, the method differences out non-voters and attempts to account for variation in turnout by race.

The rest of the report presents my results: 1) A list of the elections analyzed; 2) District 4 RPV analysis; 3) District 4, 4A and 4B electoral performance analysis.

List of Elections Analyzed

Table 1 presents the analyzed exogenous elections. Native-American candidates have an asterisk after their name. Overall, there are 35 elections. In the full District 4, I analyze 34 elections across five election cycles finding RPV in each contest. I also examined the most recent 4A election, taking a slightly different approach, which I discuss later in the report. In addition, I analyzed the 2014 LD-4 contest between Terry Jones, Bill Oliver, Kenton Onstad, and Cesar Alvarez (Native-American candidate). This district is very similar to the newly adopted LD-4 but has a few additional precincts.

Table 1. List of contests analyzed, between 2014-2022. Native American candidates have an asterisk after their name.

Year	Contest	Candidate 1	Candidate 2	Native Prefer	D4 RPV	D4 Native-Prefer Win	D4A Native-Prefer Win	D4B Native-Prefer Win
2022	U.S. Senate	Christiansen	Hoeven	Christianse n	YES	No	Yes	No
2022	U.S. House	Mund	Armstrong	Mund	YES	No	Yes	No
2022	Agriculture Commissioner	Dooley	Goehring	Dooley	YES	No	Yes	No
2022	Attorney General	Charles Lamb	Wrigley	Charles Lamb	YES	No	Yes	No
2022	Secretary of State	Powell	Howe	Powell	YES	No	Yes	No
2022	Public Service Commissioner	Moniz*	Fedorchak	Moniz	YES	No	Yes	No
2022	Public Service Commissioner 4yr	Hammer	Haugen-Hoffart	Hammer	YES	No	Yes	No
2020	President	Biden	Trump	Biden	YES	No	Yes	No
2020	U.S. House	Raknerud	Armstrong	Rakenrud	YES	No	Yes	No
2020	Governor	Lenz	Burgum	Lenz	YES	No	Yes	No
2020	Auditor	Hart	Gallion	Hart	YES	No	Yes	No
2020	Treasurer	Haugen	Beadle	Haugen	YES	No	Yes	No
2020	Public Services Commissioner	Buchmann	Kroshus	Buchmann	YES	No	Yes	No
2018	U.S. Senate	Heitkamp	Cramer	Heitkamp	YES	No	Yes	No
2018	U.S. House	Schneider	Armstrong	Schneider	YES	No	Yes	No
2018	Secretary of State	Boschee	Jaeger (I)	Boshee	YES	No	Yes	No
2018	Attorney General	Thompson	Stenhjem	Thompson	YES	No	Yes	No
2018	Agriculture Commissioner	Dotzenrod	Goehring	Dotzenrod	YES	No	Yes	No
2018	Public Services Commissioner	Brandt	Christmann	Brandt	YES	No	Yes	No
2018	Public Services Commissioner 2yr	Buchmann	Kroshus	Buchmann	YES	No	Yes	No
2018	Tax Commissioner	Oversen	Rauschenberge r	Oversen	YES	No	Yes	No
2016	President	Clinton	Trump	Clinton	YES	No	Yes	No
2016	U.S. Senate	Glassheim	Hoeven	Glassheim	YES	No	No	No
2016	U.S. House	Iron Eyes*	Cramer	Iron Eyes	YES	No	Yes	No
2016	Governor	Nelson	Burgum	Nelson	YES	No	Yes	No
2016	Insurance	Buffalo*	Godfread	Buffalo	YES	No	Yes	No
2016	Public Services Commissioner	Hunte Beaubrun*	Fedorchak	Hunte Beaubrun	YES	No	Yes	No
2014	Attorney General	Kraus	Stenhjem	Kraus	YES	No	Yes	No
2014	Agriculture Commissioner	Taylor	Goehring	Taylor	YES	No	Yes	No
2014	Public Service Commissioner 2yr	Axness	Fedorchak	Axness	YES	No	Yes	No
2014	Public Service Commissioner	Reisenauer	Kalk	Reisenauer	YES	No	Yes	No
2014	Secretary of State	Fairfield	Jaeger	Fairfield	YES	No	Yes	No
2014	Tax Commissioner	Astrup	Rauschenberge r	Astrup	YES	No	Yes	No
2014	U.S. House	Sinner	Cramer	Sinner	YES	No	Yes	No

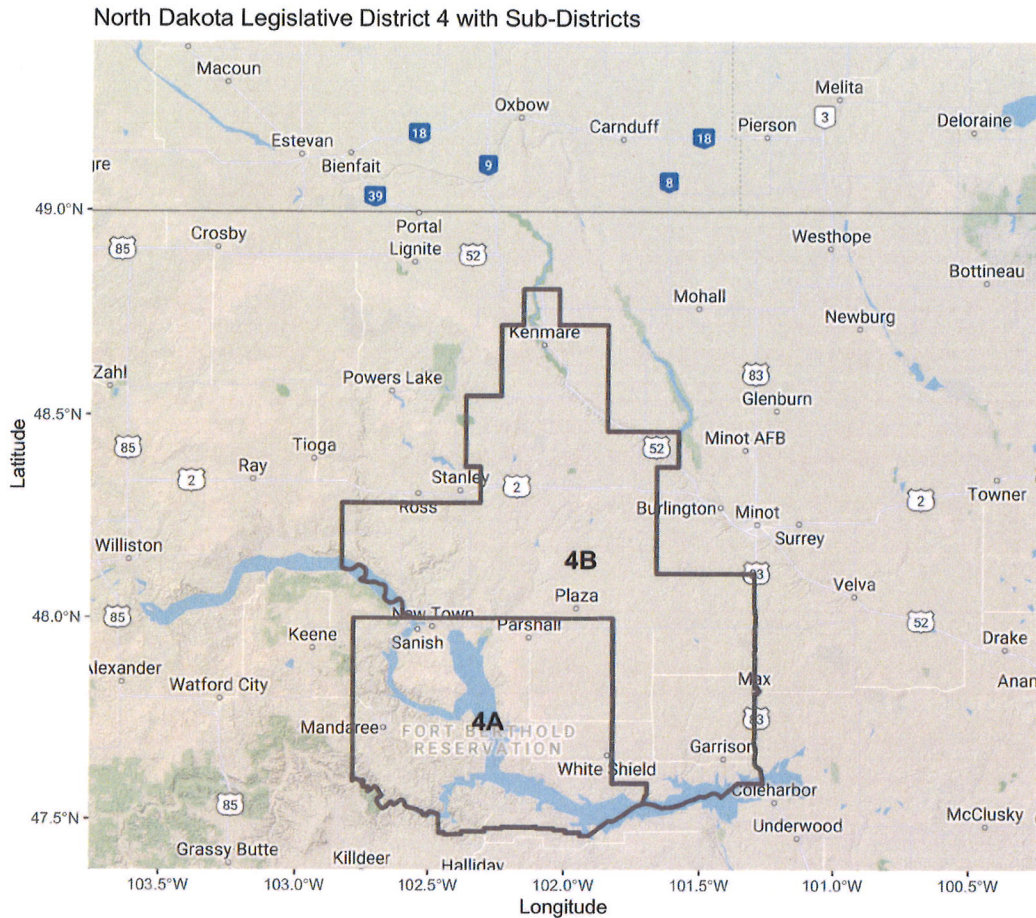
Racially Polarized Voting District 4

To conduct the analysis, I gathered precinct election returns for candidates running in each statewide contest either from the redistricting data hub¹ or the North Dakota Secretary of State, which provides precinct vote returns.² While the redistricting data hub data come formatted in precincts/VTDs and in GIS shape files, not all contests are always available. In the case where I downloaded data from the Secretary of State website I joined the data with VTD shape files based on common precinct names.

Next, I downloaded Census VTD files containing Voting Age Population (VAP) data from the 2020 U.S. Census from Dave's Redistricting – a popular website and program for redistricting. These data contain counts of VAP by race per precinct/VTD. I join precinct vote returns with VAP data using a combination of GEOID20 indicators and precinct names. Thus, I now have datasets that contain both candidate votes and racial demographics. Next, I subset the full statewide data to just the precincts found in the new District 4, which is presented in Figure 1.

¹ <https://redistrictingdatahub.org/state/north-dakota/>

² See <https://results.sos.nd.gov/ResultsSW.aspx?text=All&type=SW&map=CTY&eid=292> for 2016 example.

Figure 1. District 4 under new North Dakota map.

The last step is to develop the inputs to the ecological inference model. I convert the precinct racial estimates to a percent, generating a percent Native American by dividing the estimated number of VAP Native American individuals by the total number of VAP individuals in a precinct. To generate my estimate of percent white, I do the same for non-Hispanic white. I then collapse all other race groups into a catch-all group – which is required for statistical estimation -- although I do not substantively analyze race: other. I then calculate vote choice estimates by race for people estimated to have voted. In this way, the method attempts to difference out non-voters and accounts for variation in turnout by race.

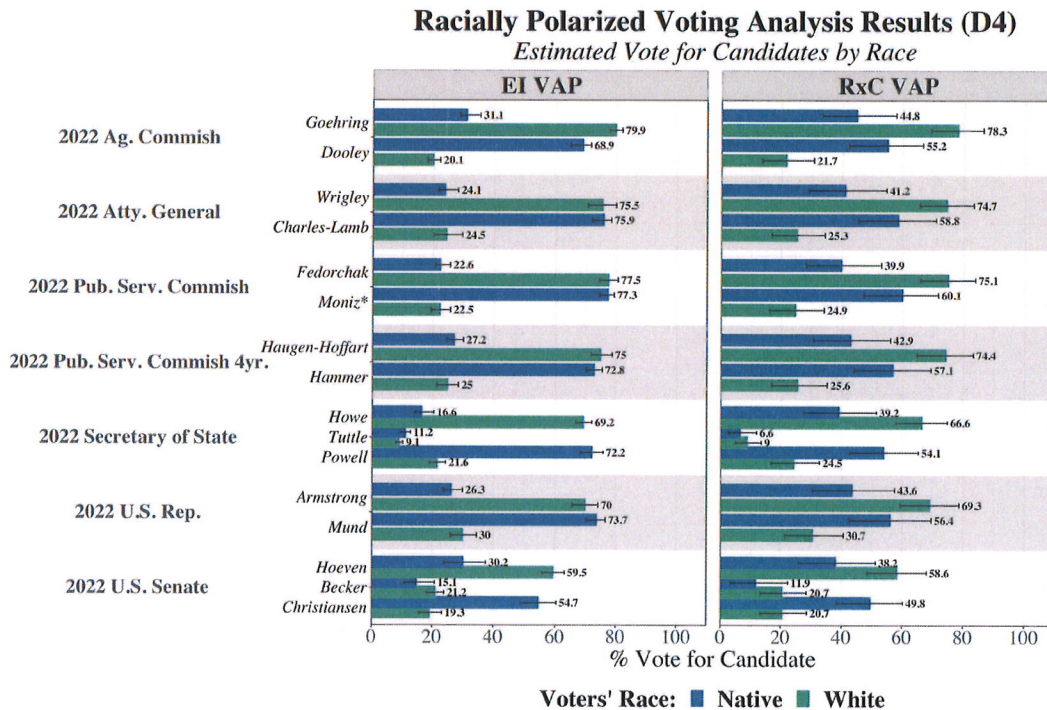
I do not conduct an ecological inference RPV analysis in Sub-Districts 4A and 4B because 1) there are relatively few precincts in each subdistrict, and 2) Sub-District 4A has a large share of Native Americans, whereas 4B does not, so locating homogeneous precincts of both racial groups in both subdistricts is challenging. Instead, I rely on the overall District 4 RPV results to assess candidate preference in the general region. However, I do conduct

performance analysis in the subdistricts to evaluate whether white votes block Native American candidates and Native-preferred candidates.

Figure 2 presents the 2022 RPV results. The left column axis shows the contest name, the middle panel the EI results, and the rightmost panel the RxC results. The results are generally consistent, showing RPV in every contest, or an RPV rate of 100%.³ I also present 95% confidence error bands showing each model’s statistical uncertainty. Finally, candidates with an asterisk are known Native-American candidates.

There are so many contests I will not enumerate the results of each one; rather I will provide one example: the 2022 Agriculture Commissioner. In the EI model, 69% of Native voters backed Dooley (55% in the RxC model); whereas 80% of whites backed Goehring (78% in the RxC model). Thus, a majority of Native voters favor one candidate, and a clear majority of white voters favor a different candidate.

Figure 2. Racially Polarized Voting assessment in statewide contests subset to the new District 4 boundaries, 2022 general election.



While I did not conduct ecological inference analyses in either subdistrict, I did conduct a correlation analysis of the most recent election in Sub-District 4A. Figure 3 presents bivariate (race and candidate vote share) scatterplots and reveals a trend consistent with an RPV analysis. For instance, in the bottom left corner, as the share of Native-American

³ The 2022 Senate race shows lower rates of RPV in the RxC model but diverging candidate preference by race is still very evident.

voters in a precinct increases, the vote share for Finley-Deville also rises. The converse occurs for Burton – who does best in the whitest precincts in Sub-District 4A (top right panel).

Figure 3. Scatterplots showing correlation/association between race and candidate choice in Sub-District 4A.

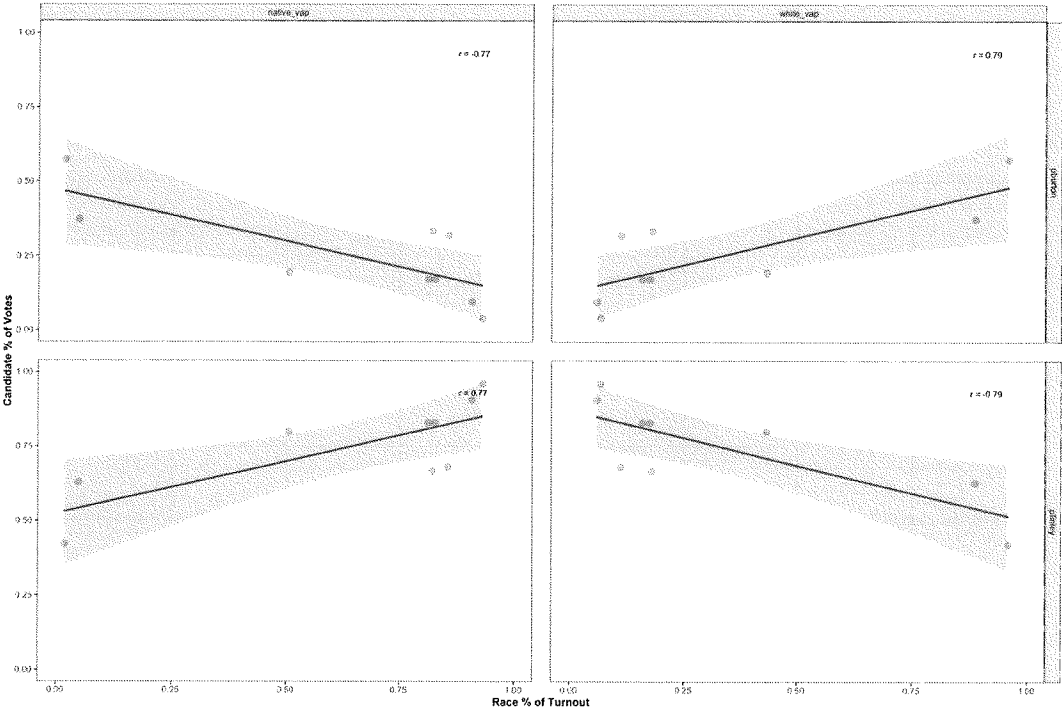


Figure 4 presents the racially polarized voting results for the 2020 contests. The results are consistent: in every single contest there is overwhelming evidence of RPV.

Figure 4. Racially Polarized Voting assessment in statewide contests subset to the new District 4 boundaries, 2020 general election.

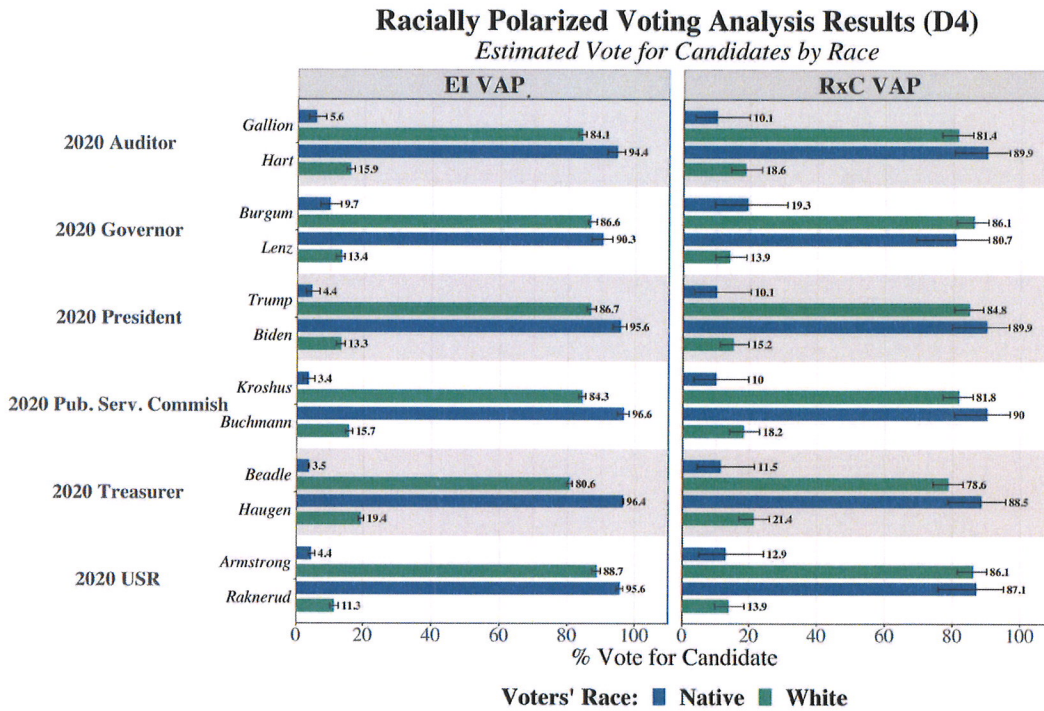


Figure 5 presents the racially polarized voting results for the 2018 contests. Again, the results show overwhelming evidence of RPV.

Figure 5. Racially Polarized Voting assessment in statewide contests subset to the new District 4 boundaries, 2018 general election.

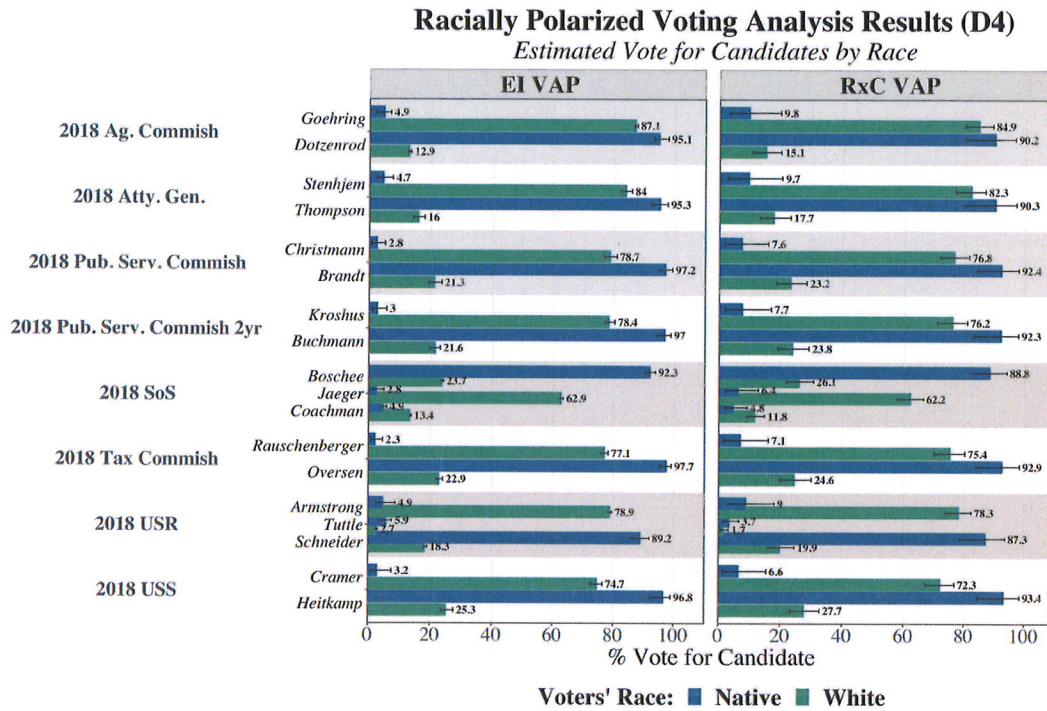


Figure 6 presents the racially polarized voting results for the 2016 contests.

Figure 6. Racially Polarized Voting assessment in statewide contests subset to the new District 4 boundaries, 2016 general election.

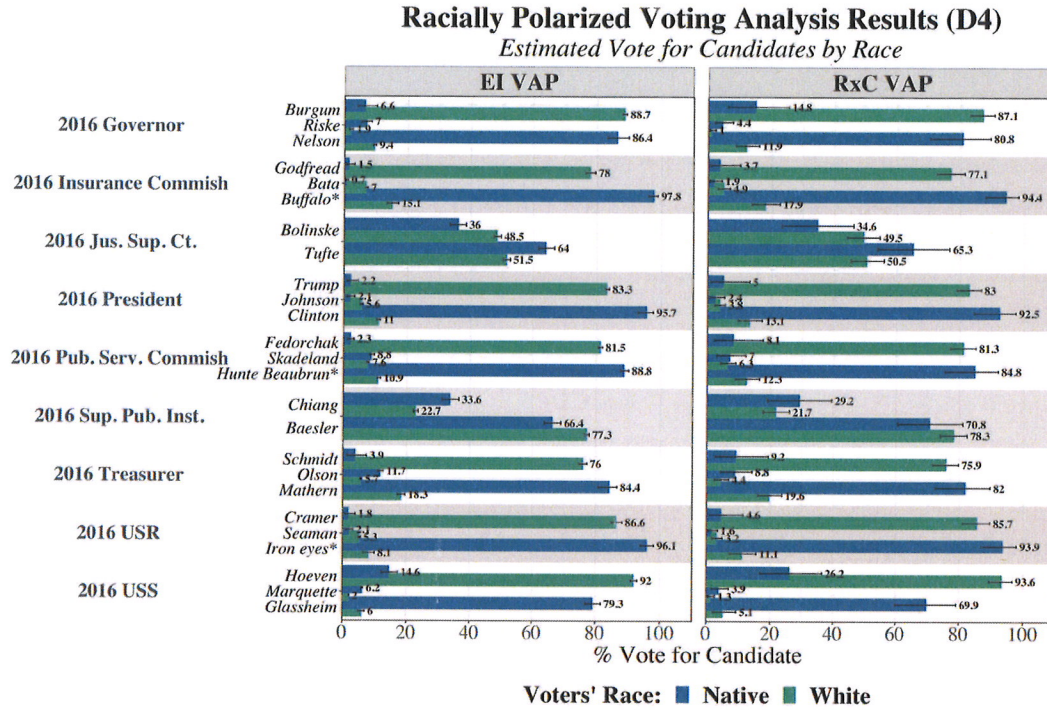


Figure 7 presents the racially polarized voting results for the 2016 Legislative District/State Representative 4 featuring Terry Jones, Bill Oliver, Kenton Onstad, and Cesar Alvarez. Mr. Alvarez is Native American while the remaining three candidates are white. Although this election was conducted under the prior version of District 4, and not the newly enacted version of the district, there were very few changes between the prior and the new district (2,364 people removed (91.4% white VAP) and 2,039 added (93.3% white VAP)). Because the district remained largely the same, with no change to the predominantly Native American portions of the district, the 2016 state legislative election is probative, especially so as an endogenous election featuring a Native American candidate. Voters could cast up to two ballots so I have normalized the results to account for overall voting behavior in preparing the RPV data. Native-American voters overwhelmingly backed Alvarez (62-65% of the vote), followed by Onstad – a white Democrat (31%). Note, that Native-American voters clearly prefer the Native-American Democrat over the white Democrat. Meanwhile, white voters cast split their ballot somewhat evenly between Oliver and Jones (34-36%) – the eventual winners. Indeed, only around 10% of white voters supported Alvarez. Notably, white voters were much more willing to vote for the white Democrat (20.3%) compared to the Native American Democrat (9.5%). This election illustrates how race, not partisanship, motivates racially polarized voting in the region.

Figure 7. Racially Polarized Voting assessment in Legislative District 4 for state representative, 2016.

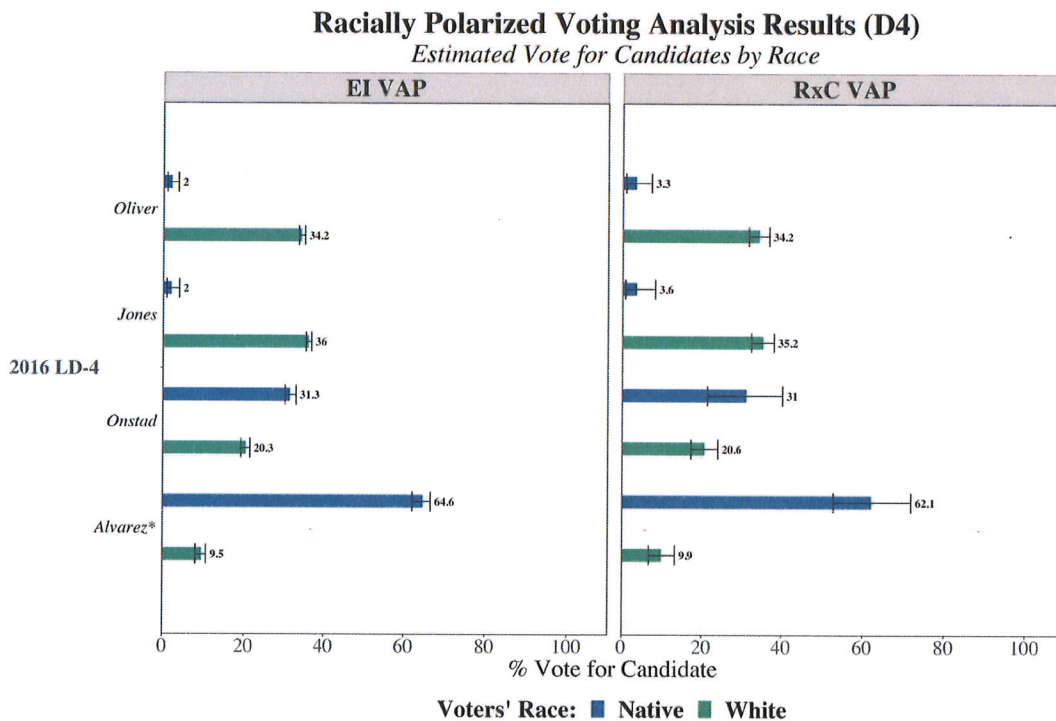
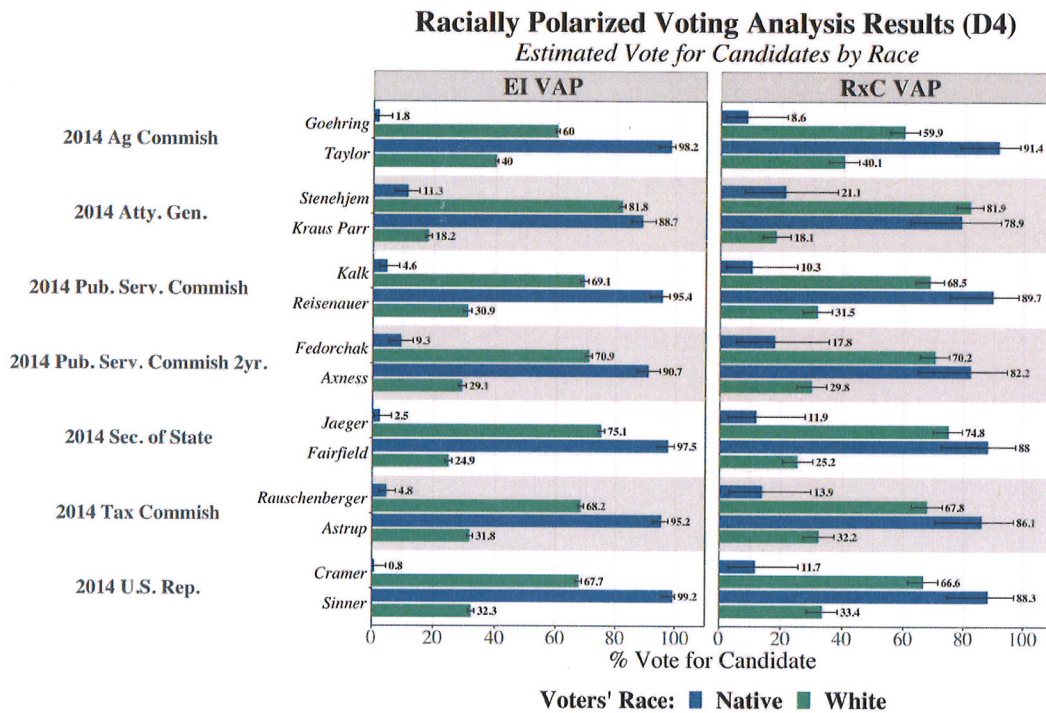


Figure 8 presents the racially polarized voting results for the 2014 contests.

Figure 8. Racially Polarized Voting assessment in statewide contests subset to the new District 4 boundaries, 2014 general election.



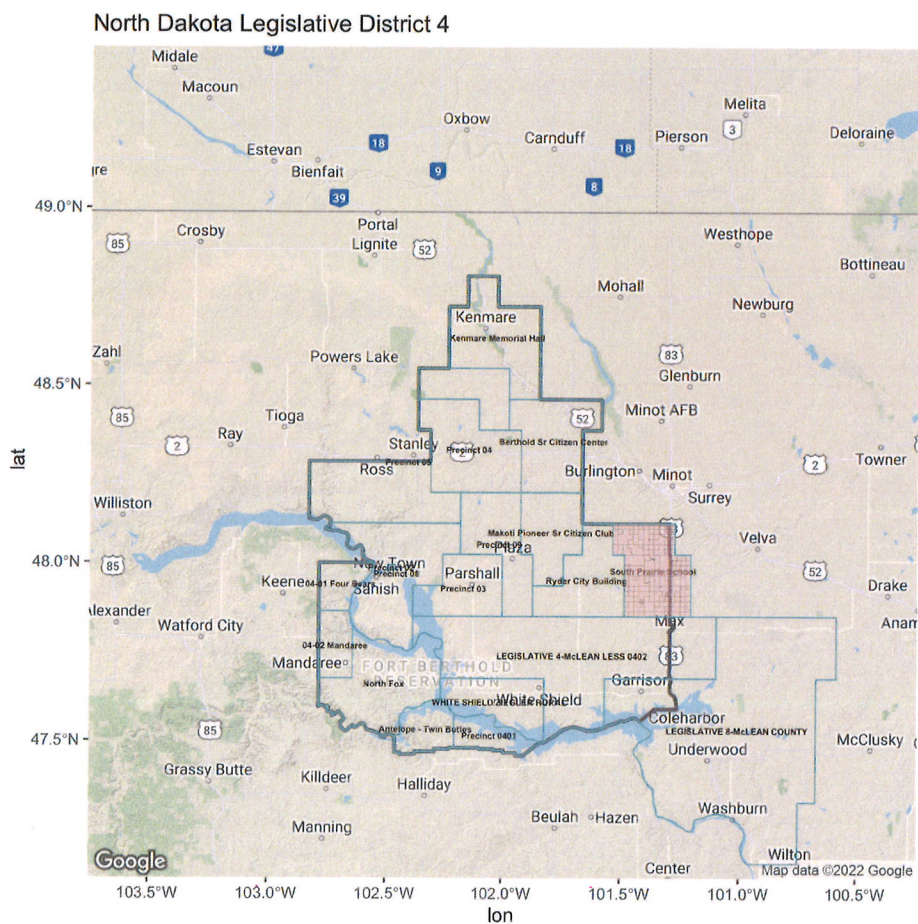
Performance Analysis District 4

To conduct the performance analysis, for 2022, I simply take the appropriate precincts falling within the full D4, then also look at D4A and D4B discretely. For the earlier contests where results are not presented by subdistrict, I take an additional step with regard to split precincts. For the full District 4, there are 3 precincts split across D4 and neighboring districts (i.e., District 8). These include South Prairie School (76.5% geographically in the district), LEGISLATIVE 4-McLEAN LESS 0402 (86.5% geographically inside the district),

and LEGISLATIVE 8-McLEAN COUNTY (7.4% geographically in the district). There are also several split precincts between D4A and D4B.

To account for these splits in my electoral performance analysis, I overlaid the precinct polygon shape file with the 2020 block polygon shape file and join population-level data including voting age population (VAP). Because blocks are fully nested inside precincts in this instance, I can make adjustments to precinct vote totals by weighting votes by total voting age population. In precincts that split between districts I take blocks on the one side of the District 4 boundary to estimate the share of the VAP that is inside/outside of the district. Figure 9 illustrates the idea. The part of the pink precinct to the left of the district boundary is included in D4, the part to the right is not.

Figure 9. Example of South Prairie School split precinct between District 4 and neighboring district, with Census blocks shaded pink.



One way to address this issue may be to turn to geographic distribution instead of population distribution. For example, a precinct might be geographically split 50-50 between District 4 and District 8. If there are 100 votes in the precinct, I could assign 50 votes to the part of the precinct in the district, and divide all candidate votes in half. If

Trump had received 70 of the precinct's initial 100 votes, and Biden 30, I would assign Trump 35 votes (70×0.5) and Biden 15 (30×0.5) totaling 50 votes.

However, another method when data are available is to take account of where the population lives within the precinct by using blocks – a much smaller and more compact geographic unit. Each block contains a tally for voting age population (VAP); therefore I can sum the VAP for all blocks for the part of the precinct falling inside of District 4, and for the part of the precinct outside of D4. This method more adequately accounts for population distribution within the precinct instead of relying on geographic area alone. It could be the case that 70% of the VAP resides in the part of the precinct falling into D4, and 30% in a neighboring district. So instead of multiplying the initial 100 votes by 0.5, for District 4, I multiply the precinct's initial 100 votes by 0.7. In this scenario, Trump would receive 49 of the 70 votes and Biden 21 votes. While the candidate vote share ratio might be the same the Trump net differential moves from plus 20 (35-15) to plus 28 (49-21).

Having accounted for the three split precincts, I combine those vote estimates with the 16 precincts fully inside D4. For each contest, I then sum votes for candidate 1 and candidate 2, respectively, and divide by total votes cast. I conduct the same procedure for the two subdistricts.

Figure 10 presents the 2022 electoral performance analysis results of the full District 4, then Sub-Districts 4A and 4B. The results show that the white-preferred candidate wins seven of seven (100%) contests in the full D4, loses all seven contests in D4A, and wins seven of seven contests in D4B. These results plainly show the need for a subdistrict in D4 – as the full district results show strong evidence of white voters blocking Native voters in their ability to elect candidates of choice at the full district level.

Figure 10. Performance analysis assessment in statewide contests subset to the new District 4 boundaries, 2022 elections.

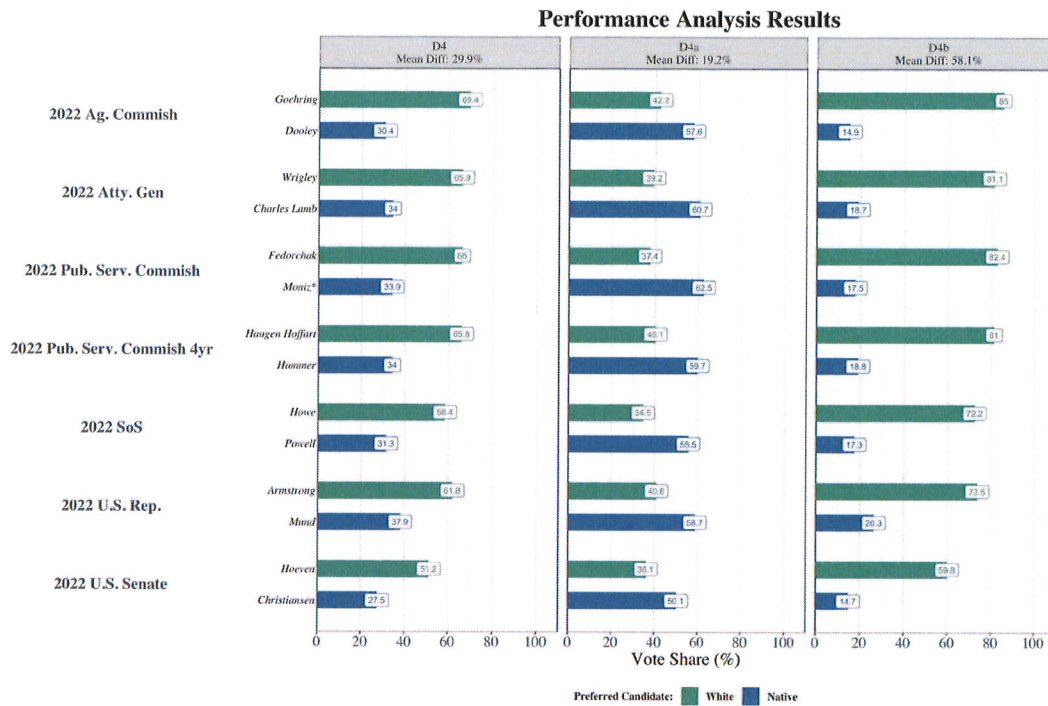


Figure 11 presents the 2020 election performance analysis results of the full District 4, then Sub-Districts 4A and 4B. Beginning with the leftmost panel – the full District 4 – the Native-preferred candidates loses 6 of 6 contests for a block rate of 100%. The middle panel tells a different story though. The Native-preferred candidates wins 6 of 6 contests for a block rate of 0%.

Finally, the rightmost panel (Sub-District 4B) tells the opposite story – the Native-preferred candidates loses 6 of 6 contests for a block rate of 100%.

Figure 11. Performance analysis assessment in statewide contests subset to the new District 4 boundaries, 2020 elections.

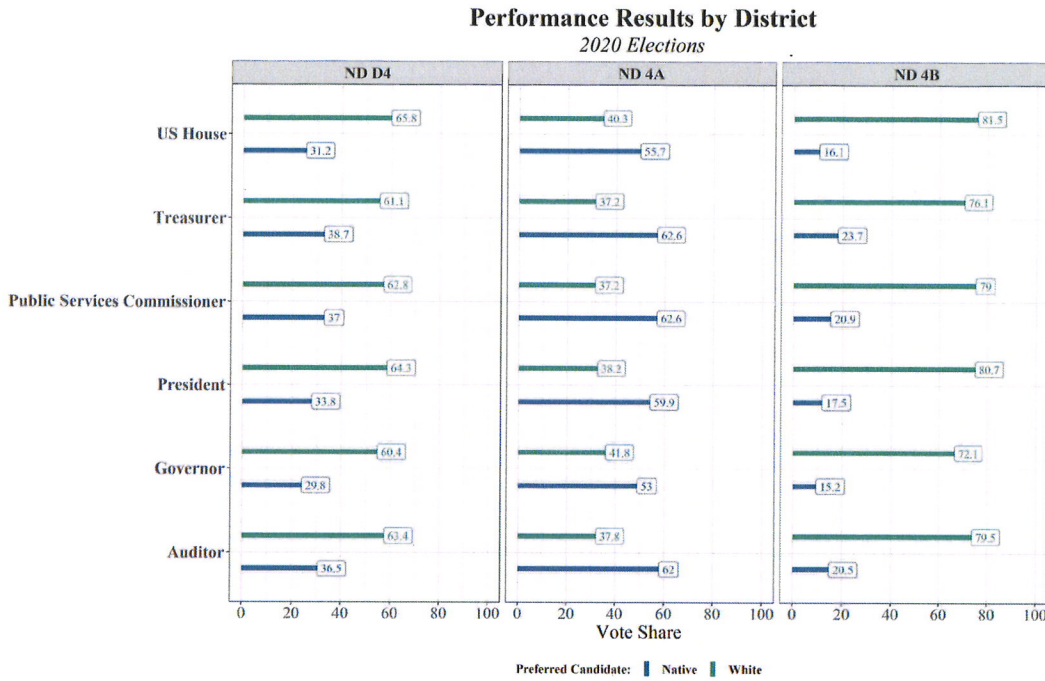


Figure 12 presents the 2018 election performance analysis results of the full District 4, then Sub-Districts 4A and 4B. Beginning with the leftmost panel – the full District 4 – the Native-preferred candidates loses 8 of 8 contests for a block rate of 100%. The middle panel tells a different story though. The Native-preferred candidates wins 8 of 8 contests for a block rate of 0%.

Finally, the rightmost panel (Sub-District 4B) tells the opposite story – the Native-preferred candidates loses 8 of 8 contests for a block rate of 100%.

Figure 12. Performance analysis assessment in statewide contests subset to the new District 4, 4A, and 4B boundaries, 2018 elections.

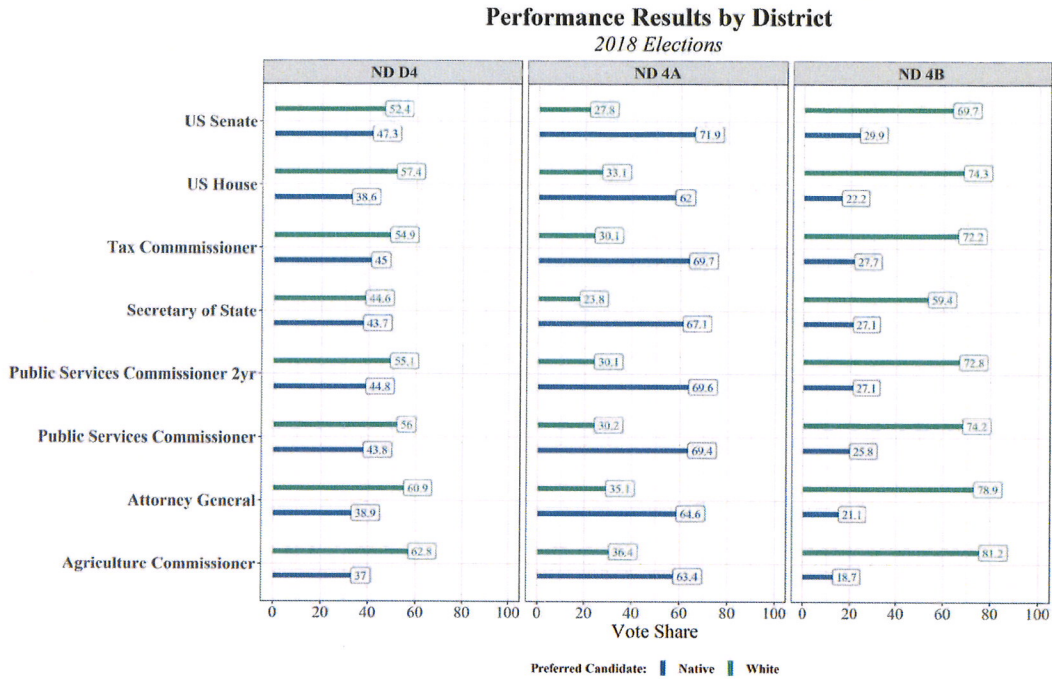


Figure 13 presents the 2016 election performance analysis results of the full District 4, then Sub-Districts 4A and 4B. Beginning with the leftmost panel – the full District 4 – the Native-preferred candidates loses 7 of 7 contests for a block rate of 100%. The middle panel tells a different story though. The Native-preferred candidates wins 6 of 7 contests for a block rate of 14%.

Finally, the rightmost panel (Sub-District 4B) tells the opposite story – the Native-preferred candidates loses 7 of 7 contests for a block rate of 100%.

Figure 13. Performance analysis assessment in statewide contests subset to the new District 4 boundaries, 2016 elections.

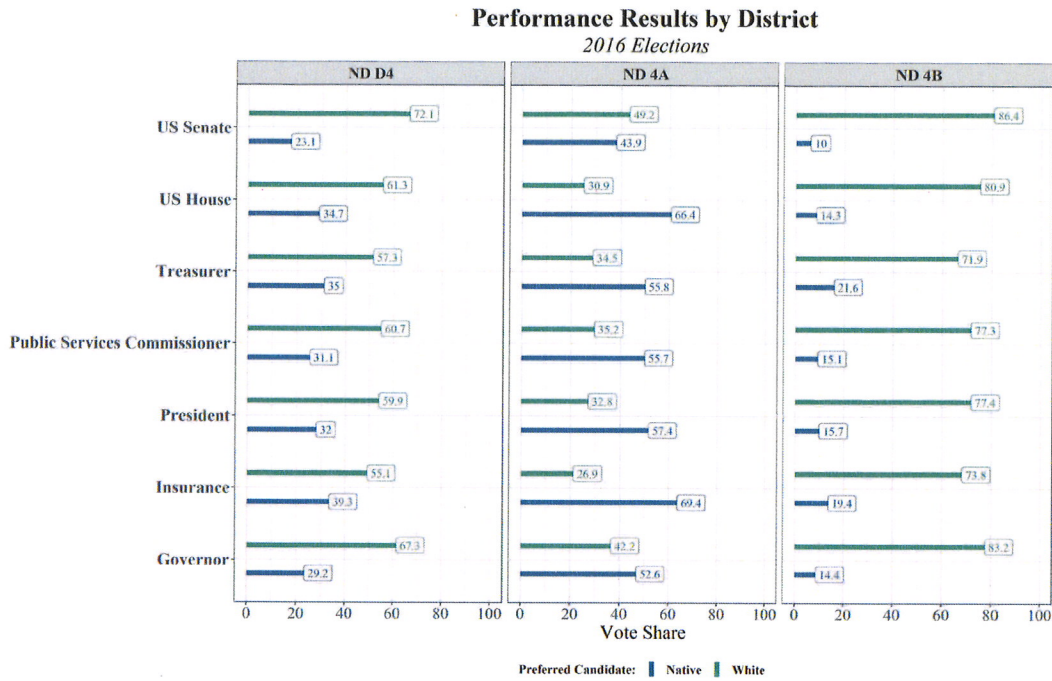


Figure 14 presents the 2014 election performance analysis results of the full District 4, then Sub-Districts 4A and 4B. Beginning with the leftmost panel – the full District 4 – the Native-preferred candidates loses 7 of 7 contests for a block rate of 100%. The middle panel tells a different story though. The Native-preferred candidates wins 7 of 7 contests for a block rate of 0%.

Finally, the rightmost panel (Sub-District 4B) tells the opposite story – the Native-preferred candidates loses 7 of 7 contests for a block rate of 100%.

Figure 14. Performance analysis assessment in statewide contests subset to the new District 4 boundaries, 2014 elections.



Conclusion

In conclusion, without any doubt, racially polarized voting between Native American voters and non-Hispanic whites is present in North Dakota's recently enacted District 4. RPV is especially clear in elections featuring Native American candidates – but is present across every single election I analyzed across five election years (2014, 2016, 2018, 2020, and 2022). RPV is also present in the 2016 LD-4 election featuring a Native American candidate who ran and lost. Thus, the Gingles II threshold is clearly met. A Gingles III analysis reveals that whites vote as a bloc to block Native Americans from electing candidates of choice at the full District 4 level in 34 of 34 contests. Narrowing in on the new Sub-Districts 4A and 4B, Native-preferred candidates win 97% of the time in 4A. However, in Sub-District 4B, Native-preferred candidates win 0% of the time meaning that they are very likely to lose contests in that subdistrict. Therefore, Gingles III is present in Sub-District 4B, in District 4 overall, but not in Sub-District 4A (which was drawn to allow Native American voters to overcome white bloc voting). Sub-District 4A thus affords Native American voters the opportunity to elect their candidates of choice that they otherwise lack in the absence of the sub-district.

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King, Gary, and Molly Roberts. 2016. *Ei: Ecological Inference*. <https://CRAN.R-project.org/package=ei>.

Lau, Olivia, Ryan T. Moore, and Michael Kellermann. 2020. *eiPack: Ecological Inference and Higher-Dimension Data Management*. <https://CRAN.R-project.org/package=eiPack>.

09-29-21

Proposed Statewide Plan

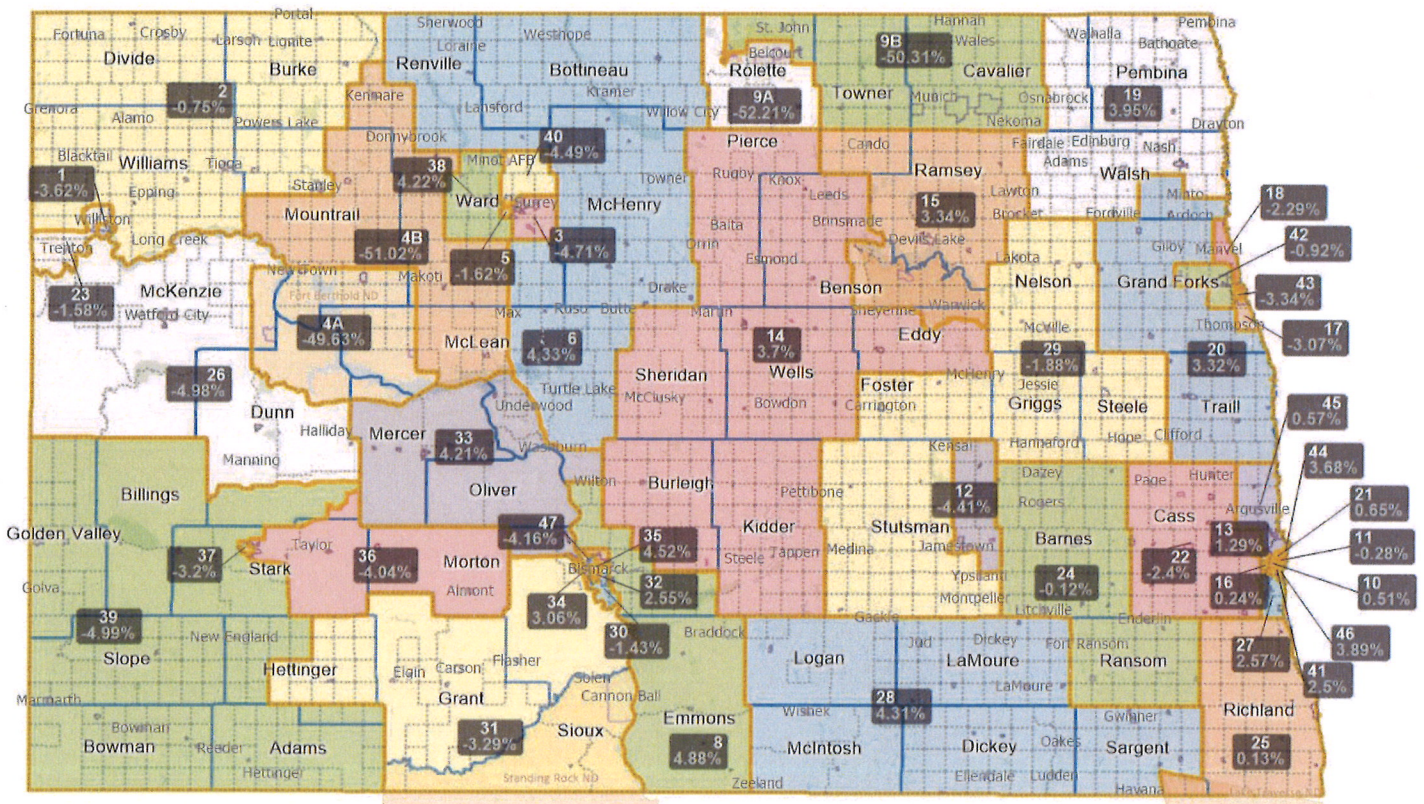
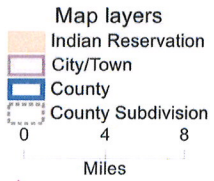
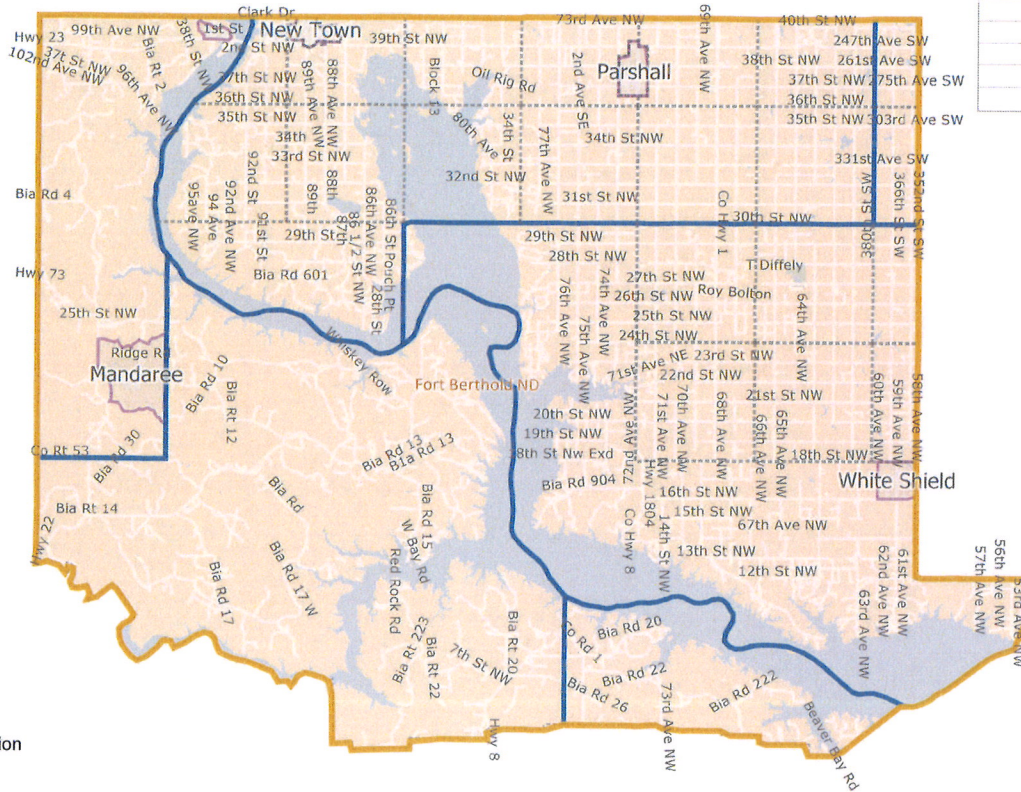


Exhibit 43

District: 4A

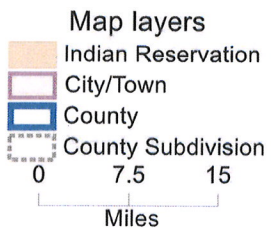
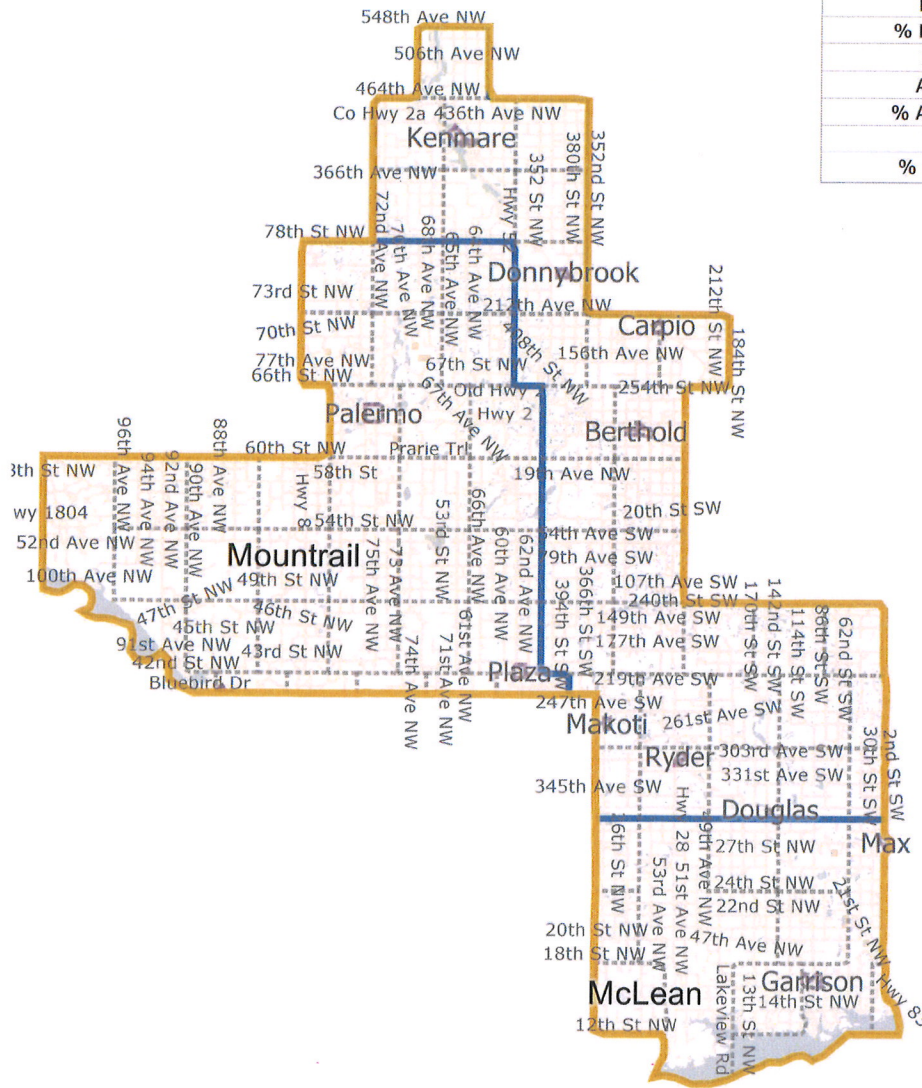
Field	Value
District	4A
Population	8350
Deviation	-8,226
% Deviation	-49.63%
18+_Pop	5709
AmIndian	5537
% AmIndian	66.31%
18+_Ind	3547
% 18+_Ind	62.13%



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District: 4B

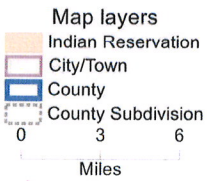
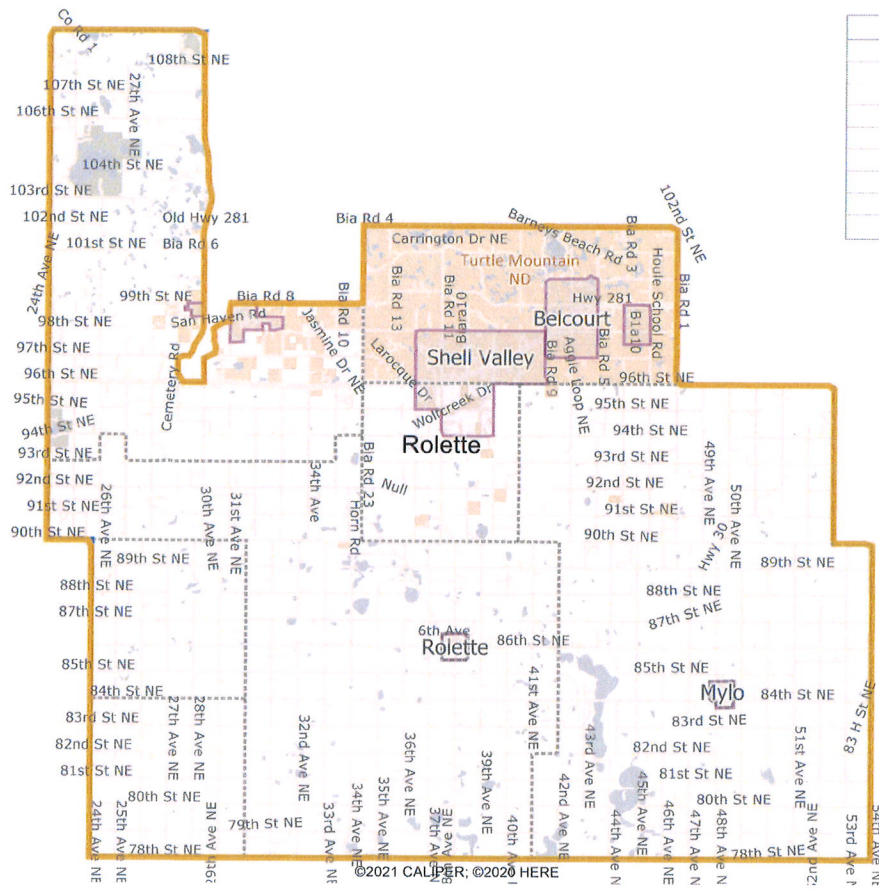
Field	Value
District	4B
Population	8119
Deviation	-8,457
% Deviation	-51.02%
18+_Pop	6207
AmIndian	204
% AmIndian	2.51%
18+_Ind	145
% 18+_Ind	2.34%



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District: 9A

Field	Value
District	9A
Population	7922
Deviation	-8,654
% Deviation	-52.21%
18+_Pop	5269
AmIndian	6460
% AmIndian	81.55%
18+_Ind	4055
% 18+_Ind	76.96%



District: 9B

Field	Value
District	9B
Population	8236
Deviation	-8,340
% Deviation	-50.31%
18+_Pop	5986
AmIndian	2856
% AmIndian	34.68%
18+_Ind	1760
% 18+_Ind	29.4%

