

RESEARCH BRIEF #1

NORTH CAROLINA 2020 MIECHV STATEWIDE NEEDS ASSESSMENT COUNTY RISK ASSESSMENT

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Background

Protecting the health of pregnant women, children, and families is a cornerstone of public health and the driving goal of the federal Maternal, Infant, and Early Childhood Home Visiting (MIECHV) program. The MIECHV program provides funding to states to implement a range of evidence-based home-visiting programs for vulnerable families.¹ The North Carolina (NC) Division of Public Health uses this federal funding to support specific NC MIECHV programs targeting high risk communities in the state.²

Home visiting programs enhance protective factors that support families as parents navigate care for themselves and their children. All families have strengths, and many exhibit great resilience in the face of significant challenges. Likewise, all families stand to benefit from more health education, more information about child development and parenting, and more social support. To build a program that can deliver the right program to North Carolina's highest-need families, NC MIECHV must understand the distribution of families' different needs across the state.



Methodology

The MIECHV needs assessment is designed to identify communities with concentrations of risk. We recognize that all communities also have many strengths, and that only looking for problems in a community will not fully describe the experiences of the people who live there. Although our assessment follows federal protocols and guidelines, we understand the importance of listening to different communities' different understandings of risk and protective factors – both for our work and the field of public health generally.

¹ Health Resources & Service Administration. (2019). *Home visiting*. <https://mchb.hrsa.gov/maternal-child-health-initiatives/home-visiting-overview>

² NC Division of Public Health MIECHV Program. <https://publichealth.nc.gov/wch/aboutus/ebhv.htm>



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Following federal guidelines, we defined each of North Carolina's 100 counties as a "community" and identified five domains of risk to measure: socioeconomic status, adverse perinatal outcomes, substance use disorder, crime, and child maltreatment. These domains of risk encompass 13 risk indicators that significantly impact the primary health outcomes targeted by most home-visiting programs. By understanding the distributions of these different risk indicators, MIECHV could determine where additional home-visiting programs would most benefit North Carolinians.

Federal guidelines define an "at-risk" county as a county that has a level of risk at least one standard deviation higher than the mean county. In numeric terms, this means that among North Carolina's 100 counties, the 16 counties with the highest levels of each risk indicator are classified as at-risk counties. So, for each of the 13 risk indicators, we identified the 16 counties with the highest risk. To increase confidence in our conclusions about which counties were most at-risk, we took note of counties that fell into multiple highest risk groups across indicators, domains, and analysis methods.

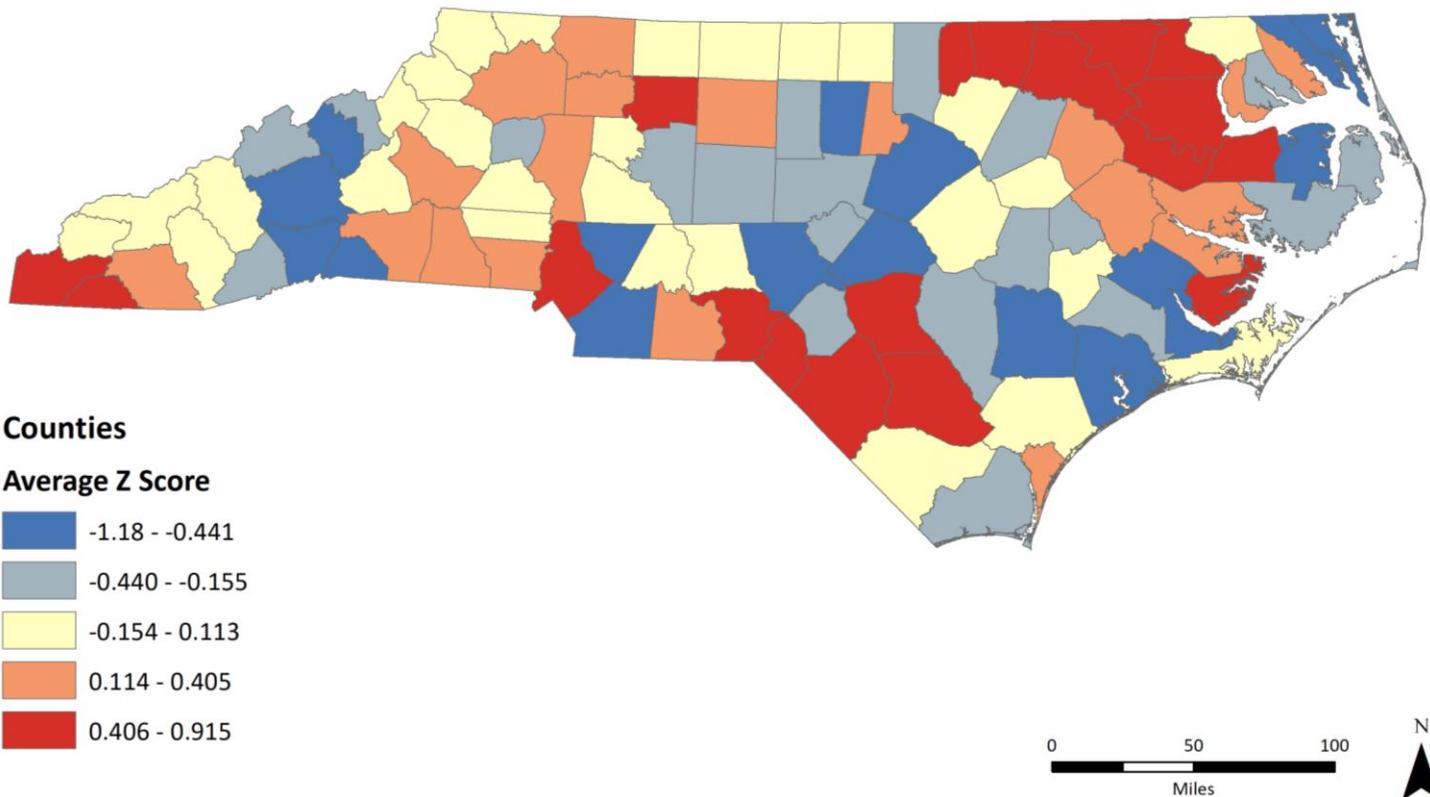
Results

You can review the results of our risk assessment in the tables and maps below. We provide the Z-scores for each indicator by county in the table below. A Z-score expresses how far a score is from the mean, such that a Z-score of 0 is equal to the mean, a z-score of +1 is one standard deviation above the mean, and -1 is one standard deviation below the mean. For our use, counties that are closer to +1 across the risk factors have the highest risk, and are marked in red on the map.

We identified 10 counties as "highest priority" because these counties were consistently in the highest risk group. Encouragingly, 4 of the 10 counties currently house MIECHV-funded sites (Edgecombe, Halifax, Northampton, and Robeson). The remaining 6 counties (Anson, Bertie, Richmond, Scotland, Vance, Washington) are therefore the state's and MIECHV's highest priority in terms of the risk factors identified in this analysis. We also identified 8 "high priority" counties which showed high risk levels in most, but not all, of our analyses. Two of these counties are current MIECHV sites (Columbus and Bladen); 6 other counties (Greene, Martin, Mecklenburg, Stokes, Warren, Wilson) remain in the high priority tier.

To learn more about the current landscape of all home visiting programs in the state, please refer to our MIECHV Research Brief #2.

Highest Priority	High Priority
Anson	Greene
Bertie	Martin
Richmond	Mecklenburg
Scotland	Stokes
Vance	Warren
Washington	Wilson
<i>Current MIECHV Sites</i>	
Edgecombe	Columbus
Halifax	Bladen
Northampton	
Robeson	



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Risk Indicators, Domains, and Definitions

Domain	Indicator	Indicator Definition
Socioeconomic Status (SES)	1. Poverty	% population living below 100% FPL
	2. Unemployment	Unemployed percent of the civilian labor force
	3. HS Dropout	% of 16-19 year olds not enrolled in school with no high school diploma
	4. Income Inequality	Gini Coefficient - 1 Yr Estimate
Adverse Perinatal Outcomes	5. Preterm Birth	% live births <37 weeks
	6. Low Birth Weight	% live births <2500 g
Substance Use Disorder	7. Alcohol	Prevalence rate: Binge alcohol use in past month
	8. Marijuana	Prevalence rate: Marijuana use in past month
	9. Illicit Drugs	Prevalence rate: Use of illicit drugs, excluding Marijuana, in past month
	10. Pain Relievers	Prevalence rate: Nonmedical use of pain medication in past year
Crime	11. Crime Reports	# reported crimes/1,000 residents
	12. Juvenile Arrests	# crime arrests ages 0-17/100,000 juveniles aged 0-17
Child Maltreatment	13. Child Maltreatment	Rate of maltreatment victims aged <1-17 per 1,000 child (aged <1-17) residents



County	Poverty	Unempl.	HS dropout	Income Inequality	Preterm Birth	Low Birth Rate	Alcohol	Marijuana	Illicit Drugs	Pain Relievers	Crime Reports	Juvenile Arrests	Child Malt.	Average Z-Score
Alamance	-0.57	-0.70	-0.22	0.32	0.28	0.16	-0.14	-0.47	-0.37	-0.16	0.04	-0.11	-0.68	-0.20
Alexander	-1.14	-1.28	-0.42	-0.56	-1.05	-0.79	0.56	0.60	0.69	-0.68	-0.45	-0.06	0.81	-0.29
Alleghany	0.80	0.18	0.31	-1.25	0.70	0.10	0.56	0.60	0.69	-0.68	-1.15	-1.38	-0.60	-0.09
Anson	1.08	0.27	0.27	-0.52	1.41	1.78	-0.10	-0.63	-0.95	-1.17	0.47	2.16	-0.99	0.24
Ashe	-0.25	-0.79	0.91	-0.20	-0.14	-0.55	0.56	0.60	0.69	-0.68	-1.08	-1.18	0.47	-0.13
Avery	0.32	-0.60	-1.26	1.26	1.21	0.50	0.56	0.60	0.69	-0.68	-0.97	-0.28	-0.43	0.07
Beaufort	1.04	0.08	-1.13	0.50	0.47	0.55	0.26	0.66	0.25	0.30	-0.11	2.00	-0.29	0.35
Bertie	2.14	1.05	-0.09	0.59	1.85	2.13	0.26	0.66	0.25	0.30	-0.55	-0.71	-0.71	0.55
Bladen	0.76	0.95	1.94	1.05	0.71	0.98	-1.92	-1.71	-1.24	-0.76	6.50	-1.55	-0.73	0.39
Brunswick	-1.10	0.66	-0.03	-0.77	-0.64	-0.12	2.23	1.96	1.50	1.74	-0.72	-1.00	-0.38	0.25
Buncombe	-1.18	-1.47	-0.63	0.27	-0.51	-0.65	-1.03	-0.97	-1.13	1.18	0.11	-0.92	0.58	-0.49
Burke	-0.11	-0.70	1.58	0.73	-0.83	-0.50	0.33	-0.20	1.21	2.05	-0.18	0.78	0.17	0.33
Cabarrus	-1.27	-0.79	-0.34	-0.21	-0.90	-0.40	0.18	-0.48	-1.16	-1.06	-0.53	0.53	-0.27	-0.51
Caldwell	-0.17	-0.50	0.68	-0.70	-0.36	0.61	0.56	0.60	0.69	-0.68	0.46	-0.24	-0.64	0.02
Camden	-1.92	-0.50	-0.42	-2.68	-1.14	-2.02	0.26	0.66	0.25	0.30	-1.43	-1.48	-0.84	-0.84
Carteret	-0.80	-0.50	0.95	0.61	0.12	-1.20	2.23	1.96	1.50	1.74	-0.86	0.29	-0.76	0.41
Caswell	0.46	-0.11	-1.24	-0.08	0.70	0.33	-0.14	-0.47	-0.37	-0.16	-0.51	-0.68	1.34	-0.07
Catawba	-0.97	-0.79	-0.56	0.80	-0.81	-0.27	0.33	-0.20	1.21	2.05	0.28	-0.20	-0.70	0.01
Chatham	-1.44	-1.09	-0.44	0.68	-0.25	-0.06	-0.14	-0.47	-0.37	-0.16	-0.74	0.35	-0.57	-0.36
Cherokee	0.02	0.08	-0.11	-1.17	1.96	0.29	0.56	0.60	0.69	-0.68	0.38	-0.85	4.11	0.45



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County	Poverty	Unempl.	HS dropout	Income Inequality	Preterm Birth	Low Birth Rate	Alcohol	Marijuana	Illicit Drugs	Pain Relievers	Crime Reports	Juvenile Arrests	Child Malt.	Average Z-Score
Chowan	0.11	0.47	0.33	-0.36	-0.25	-0.26	0.26	0.66	0.25	0.30	-0.06	1.06	0.21	0.21
Clay	-0.36	-0.02	4.87	0.79	1.24	-0.03	0.56	0.60	0.69	-0.68	0.11	-1.21	-1.23	0.41
Cleveland	0.36	-0.31	-0.59	-0.05	0.37	0.72	0.33	-0.20	1.21	2.05	-1.04	-0.78	1.59	0.28
Columbus	1.27	0.57	1.39	1.67	0.52	1.23	-1.92	-1.71	-1.24	-0.76	0.45	-0.71	0.11	0.07
Craven	-0.17	-0.31	-0.86	-0.07	-1.36	-0.76	0.26	0.66	0.25	0.30	-0.02	-0.65	-0.87	-0.28
Cumberland	0.32	0.76	-0.05	-0.28	0.62	0.47	0.18	1.58	2.40	0.06	1.20	0.20	-0.44	0.54
Currituck	-1.35	-0.50	-0.67	-2.50	-1.28	-1.58	0.26	0.66	0.25	0.30	-0.84	-0.13	1.10	-0.48
Dare	-1.63	0.95	-0.89	-1.46	-0.78	-1.84	0.26	0.66	0.25	0.30	1.17	0.54	-0.68	-0.24
Davidson	-0.40	-0.70	0.06	-0.42	0.88	0.04	0.18	-0.48	-1.16	-1.06	-0.28	1.15	-0.50	-0.21
Davie	-1.04	-0.99	0.20	0.57	-0.40	-0.20	-0.08	0.39	-0.36	-0.82	-0.68	1.26	0.27	-0.14
Duplin	0.76	-0.11	1.01	-0.38	-1.04	-0.27	-1.92	-1.71	-1.24	-0.76	-0.44	-1.22	-0.01	-0.56
Durham	-0.30	-0.89	-0.55	0.67	-0.58	-0.39	0.18	1.58	2.40	0.06	0.90	-0.81	-0.81	0.11
Edgecombe	1.78	2.70	0.14	0.31	1.15	2.25	-1.92	-1.71	-1.24	-0.76	0.47	0.61	-1.08	0.21
Forsyth	-0.11	-0.60	-0.33	1.72	0.89	0.75	-0.08	0.39	-0.36	-0.82	1.48	3.21	-1.07	0.39
Franklin	-0.30	-0.31	-0.21	-0.43	-0.38	-0.33	-0.14	-0.47	-0.37	-0.16	-0.52	-0.40	2.42	-0.12
Gaston	-0.42	-0.41	-0.12	-0.25	-0.29	0.14	0.33	-0.20	1.21	2.05	0.25	0.17	-0.05	0.19
Gates	-0.30	-0.50	-0.66	-1.83	2.54	1.25	0.26	0.66	0.25	0.30		-1.55	-0.85	-0.04
Graham	0.21	1.73	-1.51	-0.91	-0.07	-0.81	0.56	0.60	0.69	-0.68	-0.29	-1.01	0.82	-0.05
Granville	-0.95	-1.09	1.35	-1.32	-0.27	0.05	-0.14	-0.47	-0.37	-0.16	0.02	0.62	-0.70	-0.26
Greene	2.22	-0.50	0.69	-0.23	1.18	1.15	-1.92	-1.71	-1.24	-0.76	0.64	-1.48	-0.68	-0.20



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County	Poverty	Unempl.	HS dropout	Income Inequality	Preterm Birth	Low Birth Rate	Alcohol	Marijuana	Illicit Drugs	Pain Relievers	Crime Reports	Juvenile Arrests	Child Malt.	Average Z-Score
Guilford	-0.55	-0.21	-0.81	0.35	0.08	0.23	0.11	1.99	1.64	0.48	0.47	1.40	-0.36	0.37
Halifax	2.33	2.31	-1.08	1.15	1.69	1.44	-0.14	-0.47	-0.37	-0.16	1.10	1.22	-0.38	0.66
Harnett	-0.15	0.08	-0.23	-1.08	-0.50	-0.59	-0.10	-0.63	-0.95	-1.17	-0.38	-0.61	-0.21	-0.50
Haywood	-0.55	-0.89	-0.12	-0.07	0.20	-0.09	0.56	0.60	0.69	-0.68	0.34	-0.06	0.60	0.04
Henderson	-1.35	-1.09	-0.37	-1.09	-0.85	-1.29	-1.03	-0.97	-1.13	1.18	-0.83	0.34	1.18	-0.56
Hertford	1.54	0.76	-0.48	0.08	1.68	1.42	0.26	0.66	0.25	0.30	0.01	0.70	-0.83	0.49
Hoke	-0.25	0.76	0.90	-1.24	0.04	0.18	-0.10	-0.63	-0.95	-1.17	-0.47	-1.22	-0.72	-0.37
Hyde	1.01	3.38	-1.51	-2.18	-1.34	-1.58	0.26	0.66	0.25	0.30		-1.55	0.00	-0.19
Iredell	-1.23	-0.70	0.11	0.96	-0.75	-0.65	0.33	-0.20	1.21	2.05	-0.04	2.02	0.20	0.26
Jackson	-0.02	-0.21	-0.96	-0.13	-0.21	-0.67	0.56	0.60	0.69	-0.68	0.09	-0.67	0.57	-0.08
Johnston	-0.42	-0.79	-0.32	-0.39	-0.96	-0.71	0.18	1.58	2.40	0.06	-0.38	-0.79	-0.80	-0.10
Jones	1.10	-0.50	0.06	0.05	-0.84	-1.04	0.26	0.66	0.25	0.30	-0.14	-1.55	-1.23	-0.20
Lee	-0.49	0.18	-0.97	-0.58	-0.12	0.14	-0.10	-0.63	-0.95	-1.17	-1.22	0.34	-0.41	-0.46
Lenoir	1.61	-0.41	-0.73	0.35	0.14	0.52	-1.92	-1.71	-1.24	-0.76	1.04	1.80	-0.47	-0.14
Lincoln	-0.97	-0.99	0.56	-0.07	-0.95	-0.78	0.33	-0.20	1.21	2.05	-0.58	0.44	-0.55	-0.04
Macon	-0.19	-0.31	1.74	1.04	0.89	-0.41	-1.03	0.60	-1.13	1.18	-0.07	-1.00	0.43	0.13
Madison	0.11	-0.70	-0.67	0.15	-0.42	-0.54	0.26	-0.97	0.25	0.30	-1.18	-1.02	-0.02	-0.34
Martin	0.72	0.76	-0.46	0.91	1.56	2.15	0.56	0.66	0.69	-0.68	-0.25	0.00	3.11	0.75
McDowell	-0.19	-0.79	0.53	-0.97	0.39	0.40	0.56	0.60	0.69	-0.68	0.38	-1.00	-0.70	-0.06
Mecklenburg	-1.21	-0.70	-0.26	1.13	-0.53	-0.05	3.32	2.19	1.74	-0.16	1.39	1.31	-0.50	0.59



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County	Poverty	Unempl.	HS dropout	Income Inequality	Preterm Birth	Low Birth Rate	Alcohol	Marijuana	Illicit Drugs	Pain Relievers	Crime Reports	Juvenile Arrests	Child Malt.	Average Z-Score
Mitchell	-0.09	0.27	-0.49	-1.41	1.23	-0.59	-1.03	-0.97	-1.13	1.18	-0.29	-1.49	0.11	-0.36
Montgomery	0.15	-0.41	0.17	0.38	-0.07	0.91	-0.10	-0.63	-0.95	-1.17	-0.19	0.12	-0.49	-0.17
Moore	-1.35	-0.50	-1.06	1.34	-0.63	-0.38	-0.10	-0.63	-0.95	-1.17	-0.92	-0.57	-0.17	-0.55
Nash	-0.28	1.05	-0.41	0.12	-0.33	-0.12	-1.92	-1.71	-1.24	-0.76	0.04	1.26	0.09	-0.32
New Hanover	-0.34	-0.79	-0.13	1.54	-0.71	-0.86	2.23	1.96	1.50	1.74	0.70	0.33	-0.09	0.54
Northhampton	1.52	1.25	0.00	-0.32	1.20	2.07	0.26	0.66	0.25	0.30	-0.47	-0.22	-1.15	0.41
Onslow	-0.76	0.08	-0.59	-2.35	-1.62	-1.60	2.23	1.96	1.50	1.74	0.01	-0.58	0.10	0.01
Orange	-0.78	-1.18	-1.05	1.59	-1.72	-1.49	-0.14	-0.47	-0.37	-0.16	-0.35	-0.65	-0.65	-0.57
Pamlico	0.06	-0.21	1.67	-0.79	0.75	0.53	0.26	0.66	0.25	0.30	-0.65	0.95	1.59	0.41
Pasquotank	0.66	0.57	-0.43	-0.09	-0.47	-0.13	0.26	0.66	0.25	0.30	0.44	0.96	0.27	0.25
Pender	-0.95	-0.31	0.46	0.65	1.06	-0.18	2.23	1.96	1.50	1.74	-0.43	-0.99	-0.78	0.46
Perquimans	0.19	0.76	-0.83	0.03	-1.77	-1.28	0.26	0.66	0.25	0.30	-1.08	0.81	-1.00	-0.21
Person	-0.42	-0.31	-0.50	-0.24	-1.12	-0.28	-0.14	-0.47	-0.37	-0.16	-0.57	2.09	3.08	0.04
Pitt	0.97	-0.11	-1.03	1.51	0.85	0.34	0.26	0.66	0.25	0.30	0.48	0.44	-0.15	0.37
Polk	-0.97	-0.79	-1.51	-0.21	0.59	-1.29	-1.03	-0.97	-1.13	1.18	-0.80	-0.69	0.19	-0.57
Randolph	-0.28	-0.60	0.19	-0.75	-0.48	-0.59	-0.10	-0.63	-0.95	-1.17	1.84	-0.58	-0.75	-0.37
Richmond	1.63	1.05	0.15	0.69	1.41	1.83	-0.10	-0.63	-0.95	-1.17	1.54	0.48	-0.35	0.43
Robeson	2.52	1.54	0.27	1.37	0.41	1.76	-1.92	-1.71	-1.24	-0.76	0.91	0.69	1.28	0.39
Rockingham	-0.17	0.18	0.55	-0.27	-0.09	0.00	-0.08	0.39	-0.36	-0.82	0.25	0.39	-0.14	-0.01
Rowan	-0.38	-0.31	0.77	0.07	-0.69	0.02	0.18	-0.48	-1.16	-1.06	0.05	1.12	-0.02	-0.14



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Rutherford	-0.21	1.15	0.96	0.61	-0.78	-0.47	-1.03	-0.97	-1.13	1.18	0.24	0.19	2.30	0.16
Sampson	0.76	-0.21	0.88	0.86	-0.12	-0.35	-1.92	-1.71	-1.24	-0.76	-0.16	-0.41	0.56	-0.29
Scotland	1.97	2.70	-0.19	0.28	0.01	2.39	-1.92	-1.71	-1.24	-0.76	1.49	1.66	0.68	0.41
Stanly	-0.99	-0.79	1.22	-1.04	0.47	0.31	0.18	-0.48	-1.16	-1.06	0.04	-0.64	1.42	-0.19
Stokes	-0.63	-0.70	0.70	-1.24	1.07	-0.63	-0.08	0.39	-0.36	-0.82	-0.29	1.57	1.69	0.05
Surry	-0.21	-0.70	0.53	1.48	-0.86	-0.47	0.33	-0.20	1.21	2.05	0.26	-0.01	0.62	0.31
Swain	-0.28	0.08	0.17	0.82	0.01	-0.98	0.56	0.60	0.69	-0.68	-0.71	-0.18	0.77	0.07
Transylvania	-0.40	-0.60	1.15	-0.47	-0.53	-0.64	-1.03	-0.97	-1.13	1.18	-0.74	0.42	0.03	-0.29
Tyrrell	1.54	2.51	-1.51	-0.23	-4.01	-1.21	0.26	0.66	0.25	0.30	-1.09	-0.07	-1.23	-0.29
Union	-1.69	-0.99	-0.79	-0.24	-1.14	-1.14	0.18	-0.48	-1.16	-1.06	-0.34	0.33	-0.93	-0.73
Vance	1.33	1.25	-0.38	1.45	1.17	2.08	-0.14	-0.47	-0.37	-0.16	1.04	0.50	0.47	0.60
Wake	-1.73	-1.09	-0.53	-1.08	-1.09	-0.95	1.73	0.15	-0.47	-1.96	-0.86	-0.79	-0.68	-0.72
Warren	0.80	1.83	3.30	0.88	0.92	1.39	-0.14	-0.47	-0.37	-0.16	-0.47	-1.29	-0.82	0.42
Washington	1.63	1.73	0.80	1.10	1.12	1.78	0.26	0.66	0.25	0.30	2.10	-0.90	-1.23	0.74
Watauga	0.72	-0.89	-1.36	2.11	-0.04	-1.17	0.56	0.60	0.69	-0.68	-0.77	-0.92	-0.37	-0.12
Wayne	0.68	0.08	0.39	1.16	-0.30	-0.34	-1.92	-1.71	-1.24	-0.76	0.65	0.44	-0.88	-0.29
Wilkes	0.30	-0.70	-0.47	0.95	0.98	0.58	0.56	0.60	0.69	-0.68	-0.56	0.14	1.16	0.27
Wilson	0.21	2.22	1.29	-1.82	0.63	1.04	-1.92	-1.71	-1.24	-0.76	0.69	0.32	-0.07	-0.09
Yadkin	-0.78	-0.99	0.63	-0.33	-0.34	0.05	0.33	-0.20	1.21	2.05	-0.38	-0.27	0.59	0.12
Yancey	-0.13	-0.41	-1.31	-0.42	0.33	-0.47	-1.03	-0.97	-1.13	1.18	-1.43	-0.42	-0.39	-0.51



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