

# Exhibit 1

Expert Response Report of Brad Lockerbie, Ph.D.

2025-04-30

**I. Purpose of Engagement**

1. I have been asked to review and comment on Dr. Matt A. Barreto’s Expert Report Addendum concerning the Town of Newburgh.

**II. Comments**

1. Dr. Barreto does not describe the process by which he created his districting plans. By definition, it is possible to create a districting scheme. It is another question as to whether the plan created is in accord with the law, including those required by NY Municipal Home Rule Law § 10, as well as by the Equal Protection Clauses of both the United States and New York Constitutions, U.S. Const. amend. XIV; N.Y. Const. art. 1, § 11, and Section 2 of the Voting Rights Act, 52 U.S.C. § 10301.
2. Specifically, NY Municipal Home Rule Law § 10 provides that any “plan of districting or redistricting” adopted by a “county, city, town or village” in New York must “comply with the following standards.” NY Muni. Home Rule L. § 10(1)(ii)(a)(13)(a)(i).
3. First, districts “shall be as nearly equal in population as is practicable.” *Id.* § 10(1)(ii)(a)(13)(a)(i).
4. Second, districts “shall not be drawn with the intent or result of denying or abridging the equal opportunity of racial or language minority groups to participate in the political process or to diminish their ability to elect representatives of their choice.” *Id.* § 10(1)(ii)(a)(13)(a)(ii).
5. Third, districts “shall consist of contiguous territory.” *Id.* § 10(1)(ii)(a)(13)(a)(iii).
6. Fourth, districts “shall be as compact in form as practicable.” *Id.* § 10(1)(ii)(a)(13)(a)(iv).
7. Fifth, districts “shall not be drawn to discourage competition or for the purpose of favoring or disfavoring incumbents or other particular candidates or political parties.” *Id.* § 10(1)(ii)(a)(13)(a)(v). Further, “[t]he maintenance of cores of existing districts, of

pre-existing political subdivisions . . . [and] communities of interest shall also be considered.” *Id.*

8. It appears from his addendum that Dr. Barreto did not consider the import of certain of these legal requirements when drawing his proposed districts.
9. As for Section 10’s first requirement, Dr. Barreto’s proposed districts reflect some variability in population. Using the information provided by Dr. Barreto, Plan B1 has a variability of 4.6%. Plan B2 has a variability of 1.09%. Plan C1 has a variability of 6.2%. Last, Plan C2 has a variability of 5.26%.
10. As for Section 10’s second requirement, Dr. Barreto nowhere discusses whether his proposed districts are “drawn with the intent or result of denying or abridging the equal opportunity of racial or language minority groups” to elect their preferred candidates. NY Municipal Home Rule L. § 10(1)(ii)(a)(13)(a)(ii).
11. As for Section 10’s third requirement, the districts Dr. Barreto proposes appear to be contiguous.
12. As for Section 10’s fourth requirement, Dr. Barreto’s report provides no analysis of compactness, but I was able to analyze this element by referencing the shapefiles he provided.
13. I determined the compactness of Dr. Barreto’s proposed districts by calculating the Reock score for each proposed district. To calculate this score, one first measures the total geographic area of the district. Second, one finds the smallest circle that encloses the district - the minimum bounding circle. Third, measure the area of the minimum bounding circle. Fourth, to compute the Reock score, divide the geographic area of the actual district by the minimum bounding circle. The higher the score, the more compact the district. The range of this measure is 0.00 – 1.00.<sup>1</sup>

---

<sup>1</sup> Ernest Reock, *A Note: Measuring Compactness as a Requirement of Legislative Apportionment*, 5 *Midwest J. of Pol. Sci.* 70, 70-74 (1961).

Table 1. Reock Compactness Scores for Demonstrative Maps Created by Barreto

	District 1	District 2	District 3	District 4	District 5
B1	.34	.29	.38	.35	
B2	.38	.39	.29	.20	
C1	.35	.35	.40	.28	.35
C2	.36	.37	.25	.24	.33

14. Overall, Dr. Barreto’s proposed districts do not score high on the criterion of compactness, in my opinion.
15. As for Section 10’s fifth requirement, Dr. Barreto’s addendum is silent as to whether the districts he proposes would “discourage competition” or “favor . . . particular candidates or political parties.” *Id.* § 10(1)(ii)(a)(13)(a)(v). And although we cannot be sure as to Dr. Barreto’s intent in this endeavor, my analysis suggests that the districts he proposes would, in fact, “discourage competition” and make elections in the Town of Newburgh far less competitive than under the current at-large system.
16. Relatedly, Dr. Barreto’s addendum does not discuss whether he complied with Section 10’s mandate not to split “communities of interest.” NY Municipal Home Rule L. § 10(1)(ii)(a)(13)(a)(v).
17. Nor does Dr. Barreto’s addendum make any attempt to explain whether these proposed districts comply with the requirements of other state and federal redistricting requirements, such as those mandated by the New York and United States’ Constitutions’ Equal Protection Clauses and Section 2 of the VRA.
18. Rather than address any of the legal requirements for a lawful district-based scheme, Dr. Barreto’s report at most shows that it is *possible* to create a district-based system.
19. Setting aside Dr. Barreto’s failure to consider Section 10’s specific district-drawing mandates or the other legal requirements applicable to redistricting, Dr. Barreto’s analysis suffers from other methodological flaws.

20. For instance, with respect to his analysis of endogenous races (Town Council 2021, 2020, and 2019), Dr. Barreto does not explain how he considers multi-candidate races with potentially multiple winners.
21. As for his analysis of exogeneous races, Barreto lists three specific electoral contests, such as Governor, U.S. Senate, and President. Given the phrasing “other statewide races in even years,” I imagine there are other electoral contests. He does not identify these other races. Further, I do not understand the logic for including some races but not others. He excludes the state comptroller elections in both 2018 and 2022 – won by a Democrat in 2018 and by a Republican in 2022.
22. More troubling is his exclusion of the Attorney General race in 2018 and his inclusion of the Attorney General race in 2022. The race he excluded was won by the minority favored candidate. The election he included was not won by the minority favored candidate.
23. Moreover, with his exogenous races, he does not explain why he made his selection contingent on statewide races. There are many other races that he could have included that encompass the Town of Newburgh. Specifically, he could have included the US House races, as well as countywide elections.
24. As I explained in my initial report, election data from 2008 to 2022 reveals that minority-preferred candidates win 33% of town-wide elections (76 elections). The same data shows that minority-preferred candidates win 48% of town-wide elections in even-numbered years (55 electoral contests).
25. The election data analyzed by Dr. Barreto in his Addendum Report support this conclusion. For example, looking at just the elections analyzed by Dr. Barreto, we can see the minority favored candidate won one-third of the time at the town level. But if we include data from the Attorney General race in 2018 and the two State Comptroller elections—which Dr. Barreto mysteriously ignores—we see that the minority favored candidate won 44% of the time.
26. Given that minority-favored candidates already win between 33% and 48% of town-wide elections under the current election system, Dr. Barreto’s proposed districts only improve minority preferred candidate performance if those candidates are more likely to be competitive for, and ultimately win, more Town Board seats than under the current system.

27. The data underlying Dr. Barreto analysis reveals that is not the case.

28. According to the data Dr. Barreto provides, every single one of the exogenous elections that he examines was competitive at the town level. Below in Table 3, I present the winning share of the vote for each race at the town level.

Table 3. Winners' share of the vote in each of the elections examined by Dr. Barreto

• Attorney General 2022	53.05
• Governor 2022	54.54
• Senate 2022	51.97
• Senate 2018	54.83
• President 2016	49.45
• President 2020	53.07

29. By standard definitions of competitiveness, all of these races are competitive. In the two-party split of the vote, the winning candidate got less than 55% of the vote in every single election.<sup>2</sup>

30. Looking at the competitiveness in the hypothetical districts drawn by Dr. Barreto, we can see that these districts are much less competitive than the overall Town of Newburgh, as would occur under the current, at-large system. See Table 4 below.

31. In Plan B1, less than half the races are competitive.

32. In Plan B2, 14 of 24 of the races are competitive.

33. In Plan C1, less than half the races are competitive.

34. In Plan C2, 16 of 30 of the races are competitive.

35. In the hypothetical district plan presented by Dr. Barreto, elections are much less competitive than are the at-large elections in the Town of Newburgh.

---

<sup>2</sup> Jamie L. Carson and Jason Matthew Roberts, *Ambition, Competition, and Electoral Reform: The Politics of Congressional Elections Across Time*, University of Michigan Press (2013); Jamie L. Carson, Joel Sievert, & Ryan D. Williamson, *Nationalization and the Incumbency Advantage*, 73(1) Political Research Quarterly 156-168 (2020).

36. In Plan B1, one of the four districts is competitive for the 2022 Attorney General election.
37. In Plan B1, two of the four districts are competitive for the 2022 Gubernatorial election.
38. In Plan B1, one of the four districts is competitive for the 2022 Senatorial election.
39. In Plan B1, two of the four districts are competitive for the 2018 Senatorial election.
40. In Plan B1, one of the four districts is competitive for the 2016 presidential election.
41. In Plan B1, two of the four districts are competitive for the 2020 presidential election.
42. In Plan B2, two of the four districts are competitive for the 2022 Attorney General election.
43. In Plan B2, two of the four districts are competitive for the 2022 Gubernatorial election.
44. In Plan B2, three of the four districts are competitive for the 2022 Senatorial election.
45. In Plan B2, two of the four districts are competitive for the 2018 Senatorial election.
46. In Plan B2, three of the four districts are competitive for the 2016 presidential election.
47. In Plan B2, two of the four districts are competitive for the 2020 presidential election.
48. In Plan C1, two of the five districts are competitive for the 2022 Attorney General election.
49. In Plan C1, three of the five districts are competitive for the 2022 Gubernatorial election.

50. In Plan C1, two of the five districts are competitive for the 2022 Senatorial election.
51. In Plan C1, two of the five districts are competitive for the 2018 Senatorial election.
52. In Plan C1, two of the five districts are competitive for the 2016 presidential election.
53. In Plan C1, two of the five districts are competitive for the 2020 presidential election.
54. In Plan C2, three of the five districts are competitive for the 2022 Attorney General election.
55. In Plan C2, three of the five districts are competitive for the 2022 Gubernatorial election.
56. In Plan C2, two of the five districts are competitive for the 2022 Senatorial election.
57. In Plan C2, three of the five districts are competitive for the 2018 Senatorial election.
58. In Plan C2, two of the five districts are competitive for the 2016 presidential election.
59. In Plan C2, three of the five districts are competitive for the 2020 presidential election.
60. Using a t-test to assess statistical significance, the difference in competitiveness between Plan B1 and the at-large system is statistically significant at the .01 level.
61. Using a t-test to assess statistical significance, the difference in competitiveness between Plan B2 and the at-large system is statistically significant at the .01 level.
62. Using a t-test to assess statistical significance, the difference in competitiveness between Plan C1 and the at-large system is statistically significant at the .01 level.
63. Using a t-test to assess statistical significance, the difference in competitiveness between Plan C2 and the at-large system is statistically significant at the .01 level.

64. Looking at the elections in Table 4, one can see that the minority favored candidate wins exactly one-third of the time (2 of 6 elections).
65. Looking at Plan B1, the minority favored candidate wins just over one-half the elections (13 of 24 districts).
66. Looking at Plan B2, the minority favored candidate wins under one-half the districts (11 of 24 districts).
67. Looking at Plan C1, the minority favored candidate wins under one-half the districts (12 of 30 districts).
68. Looking at Plan C2, the minority favored candidate wins under one-half the districts (14 of 30 districts).
69. Using a t-test to assess statistical significance, Plan B1 is not statistically significant as compared to the status quo in terms of minority candidates being electorally victorious (significance level of .37). Given that the convention of the academic world is .05 or lower, this is not close to statistical significance.
70. Using a t-test to assess statistical significance, Plan B2 is not statistically significant as compared to the status quo in terms of minority candidates being electorally victorious (significance level of .71). Given that the convention of the academic world is .05 or lower, this is not close to statistical significance.
71. Using a t-test to assess statistical significance, Plan C1 is not statistically significant as compared to the status quo in terms of minority candidates being electorally victorious (significance level of .76). Given that the convention of the academic world is .05 or lower, this is not close to statistical significance.
72. Using a t-test to assess statistical significance, Plan C2 is not statistically significant as compared to the status quo in terms of minority candidates being electorally victorious (significance level of .65). Given that the convention of the academic world is .05 or lower, this is not close to statistical significance.
73. None of the hypothetical districts created by Dr. Barreto improve the likelihood of minority favored candidates being electorally successful. In no case are minority

avored candidates statistically more likely to win in the districts than they are to win in the at-large system.

74. With no statistically significant increase in the likelihood of minority candidates being electorally successful, the districting plan does make the elections *less* competitive statistically. In short, the elections become less competitive with no increase in the likelihood of minority candidates being successful.

Table 4. District Vote by Plan for Each Race Presented by Barreto

Plan	District	AG22		GOV22		SENATE 22		SENATE. 18		PRES 16		PRES 20		REP VOTE
		DEM VOTE	REP VOTE	DEM VOTE	REP VOTE	DEM VOTE	REP VOTE	DEM VOTE	REP VOTE	DEM VOTE	REP VOTE	DEM VOTE	REP VOTE	
B1	1	50.48	49.48	48.71	51.22	51.28	48.34	57.6	42.4	49.1	46.52	55.83	42.72	
B1	2	43.53	56.47	42.24	57.69	44.3	55.28	51.37	48.56	42.28	52.51	50.04	48.42	
B1	3	37.74	62.26	36.65	63.24	38.42	61.18	46.22	53.78	38.06	57.56	44.71	53.68	
B1	4	56.49	43.51	54.41	45.59	56.89	42.65	63.68	36.29	54.77	41.21	61.43	37.1	
	TOWN	46.94	53.05	45.4	54.54	47.62	51.97	54.83	45.14	46.05	49.45	53.07	45.41	
B2	1	53.91	46.09	52.07	47.9	54.27	45.36	61.49	38.48	52.51	43.69	59.29	39.42	
B2	2	44.56	55.44	42.63	57.3	45	54.56	53.03	46.97	43.7	51.28	50.57	47.78	
B2	3	40.68	59.32	39.49	60.44	41.44	58.14	48.65	51.32	40.56	54.56	47.85	50.6	
B2	4	49.04	50.93	47.78	52.15	50.16	49.42	55.91	44.06	47.38	48.3	54.31	44.1	
	TOWN	46.94	53.05	45.4	54.54	47.62	51.97	54.83	45.14	46.05	49.45	53.07	45.41	
C1	1	50	50	48.46	51.5	51.09	48.54	57.97	42.03	49.34	45.98	56.17	42.37	
C1	2	55.62	44.33	53.63	46.28	56.04	43.35	63.48	36.43	53.63	42.02	60.81	37.72	
C1	3	42.26	57.74	40.48	59.48	42.73	56.93	48.64	51.36	41.09	54.34	47.08	51.19	
C1	4	38.84	61.16	37.92	61.99	39.73	59.83	46.76	53.19	38.35	56.57	45.94	52.43	
sC1	5	48.53	51.47	47.04	52.91	49.02	50.7	57.01	42.99	47.81	48.33	55.16	43.53	
	TOWN	46.94	53.05	45.4	54.54	47.62	51.97	54.83	45.14	46.05	49.45	53.07	45.41	
C2	1	54.92	45.03	52.73	47.22	55.29	44.16	63.08	36.83	52.79	42.82	60.05	38.57	
C2	2	49.27	50.73	47.97	51.99	50.48	49.23	54.37	45.63	47.1	48.86	53.03	45.51	
C2	3	49.59	50.41	48.15	51.8	49.86	49.86	58.11	41.89	49.52	46.77	56.55	42.06	
C2	4	38.49	61.51	37.66	62.25	39.55	59.95	46.88	53.08	38.08	56.55	45.72	52.67	
C2	5	42.43	57.57	40.38	59.53	42.8	56.75	51.13	48.87	42.45	52.45	49.5	48.73	
	TOWN	46.94	53.05	45.4	54.54	47.62	51.97	54.83	45.14	46.05	49.45	53.07	45.41	

75. As discussed in my initial report, in at-large elections minority-preferred candidates win 33% of Town-wide elections, using data from exogenous races. Minority-preferred candidates win 48% of Town-wide elections, using data from exogenous races held in even-numbered years. Minority-preferred candidates have a strong chance of winning every single seat on the Town Board in even-numbered years—as will be the case if the Even Year Election Law is in effect for future elections, unless that law is struck down by the Court or repealed.
76. In comparison, using just the six exogenous elections provided by Dr. Barreto, the results of a difference of proportions test shows there is not a statistically significant difference between the results of the actual town level elections and the hypothetical districts presented.
77. If one adds in the statewide races not considered by Dr. Barreto, minority favored candidates do even better.
78. If one adds in the other national office elections (US House elections), minority favored candidates do even better than with just the statewide races.

### **III. Conclusion**

1. Dr. Barreto's report does not discuss or even reference the criteria that must govern any lawful redistricting process under New York law. See NY Muni. Home Rule L. § 10. Thus, Dr. Barreto's report does not shed any light on how minority-preferred candidates would perform in a district system drawn consistently with these legal requirements.
2. But even if one assumes that the districts identified in Dr. Barreto's report were otherwise lawful under Municipal Home Rule Law § 10, his report does not demonstrate that minority-preferred candidates would do better under the proposed wards than under the existing at-large system.
3. In conclusion, using the accepted method of analyzing exogeneous races, minority favored candidates do well and are competitive in the at-large elections in the Town of Newburgh—winning 33% of the vote overall and 48% of the vote in even-numbered years (as will be the case if the Even Year Election Law is in effect for future elections, unless that law is struck down by the Court or repealed).

4. In other words, the current at-large system offers minority-preferred candidates a strong shot at winning every board seat in even-numbered years. But Dr. Barreto's district system eliminates that possibility by entrenching support for minority-preferred candidates in certain districts while strongly favoring victory for non-minority preferred candidates in others. In other words, a district system, at least the one presented by Dr. Barreto, means *less* competitive elections.

SUPREME COURT OF THE STATE OF NEW YORK  
COUNTY OF ORANGE

---

ORAL CLARKE, ROMANCE REED, GRACE  
PEREZ, PETER RAMON, ERNEST TIRADO,  
and DOROTHY FLOURNOY,

Index No.: EF002460-2024

Plaintiffs,

v.

TOWN OF NEWBURGH and TOWN BOARD  
OF THE TOWN OF NEWBURGH,

Defendants.

---

**VERIFICATION**

Brad Lockerbie, being duly sworn, deposes and says:

1. I over 18 years of age and am not a party to this case.
2. I swear under penalty of perjury to the faithfulness of the opinions expressed in the foregoing Expert Response Report of Brad Lockerbie, Ph.D., and, to the best of my knowledge, to the truth and accuracy of the factual statements made therein.
3. If asked to testify on these matters, I could and would testify under oath to their contents, under penalty of perjury.
4. I affirm this 30th day of April, 2025, under the penalties of perjury under the laws of New York, which may include a fine or imprisonment, that the foregoing is true, and I understand that this document may be filed in an action or proceeding in a court of law.



---

Name: Dr. Brad Lockerbie