STATE OF NEW HAMPSHIRE

STRAFFORD COUNTY SUPERIOR COURT

City of Dover et. al.

v.

David Scanlan, Secretary of State for New Hampshire et. al.

Docket No. 219-2022-CV-00224

MEMORANDUM OF LAW IN SUPPORT OF PLAINTIFFS' MOTION FOR SUMMARY JUDGMENT

The plaintiffs, City of Dover, New Hampshire ("Dover"), City of Rochester, New Hampshire ("Rochester"), Debra Hackett, Rod Watkins, Kermit Williams, Eileen Ehlers, Janice Kelble, Erik Johnson, Deborah Sugerman, Susan Rice, Douglas Bogen, and John Wallace, by and through their undersigned counsel, respectfully submit the following Memorandum of Law in support of their Motion for Summary Judgment.

I. INTRODUCTION

In 2021 and 2022, with the new 2020 census data finally in hand (delayed due to COVID-19), the State undertook decennial redistricting of the House of Representatives ("House"), culminating in Laws 2022, ch. 9. This case challenges the constitutionality of that legislation—a pure question of law—and presents the Court with the following issue:

> Part II, Article 11 of the State Constitution, as amended in 2006 with voter approval, requires that each town or ward with sufficient population receive a dedicated House seat. During the redistricting process that followed the 2020 census, the New Hampshire legislature was shown that it is possible to create a House districting plan in which only 41 qualifying towns or wards do not receive a dedicated House seat, and which otherwise complies with state and federal law. The legislature ultimately enacted a plan in which 55 qualifying towns or wards were denied a dedicated House seat. Does the legislature's decision to deny a dedicated House seat to at least 14 qualifying towns and wards violate Part II, Article 11?

The question virtually answers itself and the answer is "yes". The mandatory, rights-creating language in Part II, Article 11 of the State Constitution and undisputed facts warrant summary judgment for the plaintiffs.

II. STATEMENT OF UNDISPUTED FACTS

a. Overview of Relevant House Redistricting Law/Litigation In Past 20 Years

Before turning to the undisputed facts of this case, below is a brief discussion of House redistricting litigation and certain propositions of law, for context.

Every ten years, Part II, Article 9 of the New Hampshire Constitution requires the legislature to redistrict the House in accordance with the federal census results (or state census, should one be taken). *See* N.H. CONST. pt. II, art. 9.

In 2002, the New Hampshire Supreme Court undertook judicially ordered House redistricting in *Burling v. Speaker of the House*, 148 N.H. 143, 150 (2002).

In 2006, voters approved an amendment to Part II, Article 11 of the State Constitution, which now provides in relevant part:

> When the population of any town or ward, according to the last federal census, is within a reasonable deviation from the ideal population for one or more representative seats, the town or ward shall have its own district of one or more representative seats.

See N.H. CONST. pt. II, art. 11.

In 2012, following House redistricting based on the 2010 census, the New Hampshire Supreme Court adjudicated the first dispute over the import of Part II, Article 11, resulting in a decision setting forth the operative standard of review in this case. *See City of Manchester v. Secretary of State*, 163 N.H. 689 (2012) (allowing enacted violations of Part II, Article 11 because they were justified by the need to comply with federal population deviation standards).

Therefore, Part II, Article 11 may be forced to yield in pursuit of complying with constitutional population deviation standards, which hold that a House districting plan with a maximum statewide population deviation under 10% is presumptively constitutional (and any deviation over 10% is presumptively unconstitutional). *See City of Manchester*, 163 N.H. at 700–01.[1] Deviation is explained more below.

b. The 2022 House Redistricting

In 2021, the decennial House redistricting process began with the introduction of House Bill 50. *See* docket for House Bill 50. The legislative process continued into and concluded in March 2022, when the Governor signed House Bill 50, thereafter chaptered as Laws 2022, ch. 9 and codified as RSA 662:5. *See* docket for House Bill 50.

Various legal requirements apply to House redistricting, including (1) federal and state constitutional deviation requirements, with 10% statewide deviation presumptively constitutional, *see City of Manchester*; and (2) the State Constitution's requirement (Part II, Article 11) concerning dedicated House seats (the "dedication" requirement).

The deviation and dedication requirements both depend on the "ideal population" for a House seat. The first step in calculating the ideal population is to identify the total population of New Hampshire according to the census, which for 2020 is 1,377,529.[2] *See* Ex. 2, State's Response to Requests for Admission ("RFAs"), Request 1. The second step is to divide that number by 400 House seats to yield the ideal population of 3,444 (rounded) for a House seat. *See id*. at Request 2 & Request 11 (tacitly admitting this by

[1] *See also Brown v. Thompson*, 462 U.S. 835, 842-43 (1983). The burden is on the State to justify the exceedance based on "historically significant state policy or unique features." *Burling*, 148 N.H. at 478 (quoting *Chapman v. Meier*, 420 U.S. 1 (1975)); *see also Brown*, 462 U.S. at 842-43.

[2] *Available at:* https://www.census.gov/quickfacts/fact/table/NH/PST045222. The census is susceptible to judicial notice, *see N.H. R. Ev.* 201; *see generally Burling v. Chandler*, 148 N.H. 143 (2002) (citing to census data and providing link to federal government website).

admitting that statewide population deviation was calculated using this figure); *City of Manchester*, 163 N.H. at 699 ("To calculate the ideal population of a single-member district, the state population is divided by the total number of state representatives.").

Using that ideal population figure (3,444), one can measure the degree of constitutional compliance for both deviation and dedication, discussed below in turn, though the claims in this matter focus primarily on the issue of dedication.

Deviation: The defendants admit that the statewide population deviation of the enacted House plan is 10.13%. *See* Andrews Affidavit attached as Ex. to Complaint (reattached hereto as Ex. 1), Affidavit of David Andrews (hereinafter "Andrews Aff.") and Exhibit G; *see also* Ex. 2, State RFAs, Request #11. By way of explanation, that 10.13% figure is derived as follows, based on controlling case law.[3] First, one ascertains the degree to which each House district deviates from the ideal figure (3,444). *See* Andrews Aff. at Ex. G. Next, statewide population deviation is calculated as the numerical difference between the House district with the lowest deviation district in the State (Nashua Ward 7 in Hillsborough County, -4.95%) and the highest deviation across the State (Keene Ward 5 in Cheshire County, 5.18%). *See id.*

Dedication: Measuring compliance with the dedication requirement is more straightforward: the following 55 towns/wards met or exceeded the ideal House seat population (3,444), but were not provided a dedicated House seat by Laws 2022, ch. 9:

County	Town or Ward	2020 Census Population
Belknap	Tilton	3962
Belknap	Gilford	7699

[3] *See Burling v. Chandler*, 148 N.H. 143 (2002) (Appx. C contains Component Method calculation methodology for House redistricting by New Hampshire Supreme Court in 2002); *City of Manchester*, 163 N.H. at 700 ("Using the relative deviation, one can calculate the overall range of deviation for a state-wide plan by adding the largest positive deviation in the state and the largest negative deviation in the state without regard to algebraic sign.").

Belknap	Gilmanton	3945
Belknap	Alton	5894
Belknap	Barnstead	4915
Carroll	Moultonborough	4918
Carroll	Wakefield	5201
Carroll	Wolfeboro	6416
Cheshire	Walpole	3633
Cheshire	Chesterfield	3552
Cheshire	Hinsdale	3948
Cheshire	Swanzey	7270
Cheshire	Jaffrey	5320
Grafton	Littleton	6005
Grafton	Haverhill	4585
Grafton	Plymouth	6682
Grafton	Canaan	3794
Grafton	Hanover	11870
Hillsborough	Hillsborough	5939
Hillsborough	New Ipswich	5204
Hillsborough	Wilton	3896
Hillsborough	Peterborough	6418
Hillsborough	Brookline	5639
Hillsborough	New Boston	6108
Merrimack	Loudon	5576
Merrimack	New London	4400
Merrimack	Henniker	6185
Merrimack	Bow	8229
Merrimack	Hopkinton	5914
Merrimack	Hooksett	14871
Merrimack	Pittsfield	4075
Rockingham	Northwood	4641
Rockingham	Nottingham	5229
Rockingham	Auburn	5946
Rockingham	Candia	4013
Rockingham	Deerfield	4855
Rockingham	Newmarket	9430
Rockingham	Kingston	6202
Rockingham	Newton	4820
Rockingham	Plaistow	7830
Rockingham	Portsmouth Ward 1	4276
Rockingham	Portsmouth Ward 5	4087
Rockingham	Greenland	4067

Rockingham	Rye	5543
Strafford	Milton	4482
Strafford	Rochester Ward 5	5419
Strafford	Barrington	9326
Strafford	Strafford	4230
Strafford	Dover Ward 4	5439
Strafford	Lee	4520
Sullivan	Charlestown	4806
Sullivan	Newport	6299
Sullivan	Claremont Ward 1	4461
Sullivan	Claremont Ward 2	4491
Sullivan	Claremont Ward 3	3997

Compare U.S. Census Data[4], *with* RSA 662:5 (codification of Laws 2022, ch. 9); *see also* Andrews Aff. at Exhibits F & G; *see also* Ex. 2, State RFAs, Request #3.

However, the foregoing 55 deprivations of a dedicated House seat must be viewed in context of what else could have been done. During the legislative process that preceded the enactment of Laws 2022, ch. 9, a non-partisan coalition called "Map-a-Thon" submitted proposed House redistricting maps to the legislature. *See* Andrews Aff. at ¶¶ 5-7. Map-a-Thon's maps used the same legal and other redistricting criteria as used by the legislature and in Laws 2022, ch. 9,[5] but illustrated exactly how to reduce the deprivations of a dedicated House seat by net of 14 (or 41 in total; a 25% reduction), *see* Andrews Aff. at ¶ 4 and Exhibits F & G. More specifically, Map-a-Thon's final proposal illustrated how to accord the following fifteen towns and wards (net gain of 14 total[6]) with a dedicated House seat:

[4] *Available at:* https://www.census.gov/quickfacts/fact/table/NH/PST045222. The census is susceptible to judicial notice, *see N.H. R. Ev.* 201; *see generally Burling v. Chandler*, 148 N.H. 143 (2002) (citing to census data and providing link to federal government website).

[5] Map-a-Thon's House redistricting criteria is summarized in Exhibit B to the Andrews Affidavit; *see also City of Manchester v. Secretary of State*, 163 N.H. 689, 699 (2012) (discussing method of apportioning House districts).

[6] For clarification, these fifteen towns/ward gain a dedicated House seat in the Map-a-Thon House plan, but there is a **net** gain of fourteen because one town (the Town of Durham) would have a dedicated House seat in the enacted

Town/Ward	Population
Barrington	9326
Bow	8229
Canaan	3794
Chesterfield	3552
Dover Ward 4	5439
Hanover	11870
Hinsdale	3948
Hooksett	14871
Milton	4482
New Ipswich	5204
Newton	4820
Lee	4520
Plaistow	7830
Rochester Ward 5	5419
Wilton	3896

See Andrews Aff. at Exhibits F & G. These fifteen towns and wards are referred to hereinafter as the "Affected Towns/Wards." Map-a-Thon highlighted these improvements in a summary comparison between maps:

2. Map Comparison Summary

Enacted Maps vs. Map-a-Thon Proposed Maps Summary					
County	# Reps	Enacted Map Deviation	Proposed Map Deviation	Enacted Map Violations	Proposed Map Violations
Belknap	18	8.27%	8.27%	5	5
Carroll	15	6.48%	6.48%	3	3
Cheshire	22	9.81%	7.62%	5	3
Coos	9	8.74%	8.68%	0	0
Grafton	26	8.44%	9.86%	5	3
Hillsborough	123	9.75%	9.49%	6	4
Merrimack	45	9.22%	8.57%	7	5
Rockingham	91	9.80%	9.80%	13	11
Strafford	38	9.13%	9.48%	6	2
Sullivan	13	3.73%	3.73%	5	5
Total	400	10.13%	9.94%	55	41

See Andrews Aff. at Exhibits F & G.

plan but not in the Map-a-Thon plan. Durham's district in the Map-a-Thon plan, however, still complies with Part II, Article 11 because Durham still receives "one non-floterial representative district" in the Map-a-Thon plan.

The Map-a-Thon House plan's statewide population deviation is only 9.94% (*i.e.*, under the 10% deviation tolerance). *See* Andrews Aff. at Exhibit G (lowest deviation: Nashua Ward 7 in Hillsborough County, -4.95%; highest deviation: GR-10 in Grafton County and BE-4 in Belknap County; each 4.99%).

To summarize, Map-a-Thon's proposed maps showed that a net of 14 additional qualified towns/wards could have received a dedicated House seat while still complying with the 10% deviation rule and all other redistricting criteria. *See* Andrews Aff. at Exhibits F & G. A narrative list of Map-a-Thon's districts, formatted the same as Laws 2022, ch. 9, accompanies this filing. *See* Ex. 3, Supplemental Affidavit of David Andrews at ¶ 3 & Ex. to same.

The legislature did not adopt Map-a-Thon's proposed House maps. *See* Legislative History of House Bill 50. Map-a-Thon's House maps would have not only fixed the deviation problem and resulted in a net gain of 14 dedicated House seats, but would have also increased the total population in single-seat House districts by over 60,000:

	Enacted Maps	Map-a-thon Proposed Maps
Number of single member districts	97	110
Population (of all single-member districts)	843,536	917,053

See Ex. 3 attached hereto, Supplemental Affidavit of David Andrews.

In discovery, the State's discovery responses did not answer the specific basis for Laws 2022, ch. 9's 55 instances of denying a town/ward with sufficient population, pursuant to the 2020 census, a dedicated House seat. *See* Ex. 4, State's Responses to Interrogatories (without attachments), Interrogatories #2 and #3. Also in discovery, the State had the opportunity to disclose its own expert(s), but has chosen not to do so, with discovery closing at the end of 2023.

III. SUMMARY JUDGMENT STANDARD

Summary judgment should issue whenever "the pleadings, depositions, answers to interrogatories, and admissions on file, together with the affidavits filed, show that there is no genuine issue as to any material fact and that the moving party is entitled to judgment as a matter of law." RSA 491:8–a, III. "In acting upon a motion for summary judgment, the trial court is required to construe the pleadings, discovery and affidavits in the light most favorable to the non-moving party." *Panciocco v. Lawyers Title Ins. Corp.*, 147 N.H. 610, 613 (2002). "An issue of fact is material if it affects the outcome of the litigation." *Id*. In responding to a properly supported summary judgment motion, "the adverse party may not rest upon mere allegations or denials of his pleadings, but his response, by affidavits or by reference to depositions, answers to interrogatories, or admissions, must set forth specific facts showing that there is a genuine issue for trial." RSA 491:8–a, IV.

IV. ARGUMENT

a. Laws 2022, ch. 9 violated Part II, Article 11 by failing to minimize the enacted violations of Part II, Article 11 of the State Constitution.

The plaintiffs' claims in this case turn on the application of Part II, Article 11 of the State Constitution, and in particular the clause added in 2006 that states as follows:

> When the population of any town or ward, according to the last federal census, is within a reasonable deviation from the ideal population for one or more representative seats, the town or ward shall have its own district of one or more representative seats.

N.H. CONST. pt. II, art. 11 (emphasis added). The purpose of the constitutional amendment was long-standing recognition of the importance of "insuring some voice to political subdivisions, as

subdivisions." *Reynolds v. Sims*, 377 U.S. 533, 580 (1964).[7] The new text was "likely a response to the redistricting plan [the Court] created in *Burling*." *City of Manchester*, 163 N.H. at 695.

Here, there can be no dispute the State had a mandatory obligation to comply with Part II, Article 11 when enacting the 2022 House maps, as this Court recognized in its June 30, 2023 Order denying the defendants' motion to dismiss, *see* Order at 5 (observing "mandatory, express requirement of Part II, Article 11"), and as the New Hampshire Supreme Court itself has agreed.[8]

Turning to whether the State has sufficient—or any—justification for choosing to deprive the Affected Towns/Wards of their dedicated House district, the State has identified no other state or federal requirement forcing this result. Instead, the State has relied, and is expected to in its objection to this motion to also rely, on generalized or prudential policy preferences to explain why the Affected Towns/Wards were deprived of their constitutionally guaranteed districts.[9]

The legal problem for the State is the well-established, obvious "hierarchy of applicable law" controlling House redistricting, *City of Manchester*, 163 N.H. at 703; *see also Johnson v. Curry (In re Title, Ballot Title)*, 374 P.3d 460 (Colo. 2016) (discussing constitutional "hierarchy

---

[7] *See also In re Reapportionment of Towns of Hartland, Windsor & W. Windsor*, 624 A.2d 323, 330 (Vt. 1993) ("Local governmental units have various responsibilities incident to the operation of state government in a wide range of areas, including the court system, law enforcement, education, mental health, taxation, and transportation. Consequently, unnecessary fragmentation of these units limits the ability of local constituencies to organize effectively and increases voter confusion and isolation."). The local government's interests and rights are further confirmed by Part II, Article 11-a of the State Constitution, which permit division of a town or ward if such town or ward "by referendum requests such division."

[8] *See also Norelli v. Sec'y of State*, 175 N.H. 186, 203 (2022) (observing that "New Hampshire has historically avoided dividing towns, city wards, or unincorporated places unless they have previously requested to be divided by referendum"; citing Part II, Article 11 as part of a group of constitutional provisions "mandating the application of these policies in the state legislative redistricting context"); *City of Manchester v. Secretary of State*, 163 N.H. 689 (2012) (observing that "Part II, Article sets forth . . . some of several constitutional criteria that a redistricting plan **must satisfy**" (emphasis added)). It also bears noting that Part II, Article 26 requires that Senate districts avoid "dividing any town, city ward or unincorporated place," which the Court has likewise described as a mandate, *see Below v. Gardner*, 148 N.H. 1 (2002).

[9] There is no explanation in the legislative history or otherwise for why, in the face of a submitted redistricting plan that could significantly increase compliance with Part II, Article 11 and significantly reduce the number of Part II, Article 11 violations, the decision was made to forgo such a map or any alternative map.

of criteria", including restriction on "unnecessary division of counties"). That hierarchy mandates that, first, federal requirements be met, followed next by the State Constitution's requirements, and "nonconstitutional considerations . . . may be considered **only after all constitutional criteria** have been met." *In re Reapportionment of the Colo. Gen. Assembly*, 332 P.3d 108, 111 (Colo. 2011) (emphasis added); *Durst v. Idaho Comm'n for Reapportionment*, 505 P.3d 324, 330 (Idaho), *cert. denied sub nom*, 143 S. Ct. 208 (2022) ("First, the hierarchy of applicable law governing redistricting provides that the Equal Protection Clause of the Federal Constitution is the paramount authority. Second, Idaho's Constitution prohibits the division of counties, except to meet the constitutional standards of equal protection."); *Arizonans for Fair Representation v. Symington*, 828 F. Supp. 684, 687 (D. Ariz. 1992), *aff'd sub nom.*, 507 U.S. 981 (1993) ("There are three criteria used to evaluate redistricting plans: the Constitution, the Voting Rights Act, and the neutral principles of redistricting. There is a strict hierarchy among these criteria. The Constitution and the Voting Rights Act must be satisfied before a court considers the neutral criteria.").

Accordingly, as a matter of law, non-constitutional policy concerns fall well short of the "rational or legitimate basis" justifying unnecessary violations of Part II, Article 11, as exemplified in *City of Manchester v. Secretary of State*, 163 N.H. 689 (2012). In *City of Manchester*, the Court allowed violations of Part II, Article 11 during the 2010 House redistricting process, but only because of the State's "paramount" requirement to comply with the Federal and State Constitutions' 10% population deviation standard. Here, conversely, the State lacks any constitutional justification (State or Federal) for depriving the 14 towns/wards of their dedicated House seat (and violated the 10% deviation standard in the enacted plan).[10]

[10] The enacted House maps also violate the 10% population deviation standard, whereas the Map-a-Thon maps do not. This memorandum, however, focuses on the violations of Part II, Article 11 as the basis for summary

In sum, the legislature's generalized policy preferences cannot override or be given priority over the express requirements of Part II, Article 11. *See City of Manchester*, 163 N.H. at 699 and case cited above; *cf*. *Farnum v. Burns*, 561 F. Supp. 83, 91 (D.R.I. 1983) (holding political reasons did not supply a legitimate and rational basis required to support violation of state constitutional compactness requirement).

A correlative legal proposition is that, as this Court agreed in its Order dated July 21, 2023, the State must minimize constitutional violations, even where perfect compliance is impossible. Common sense and applicable legal authority fully support this proposition of law:

- The inability to avoid some constitutional violations is not a license to violate the State Constitution unnecessarily. As New Hampshire statesman Daniel Webster observed:

  > The constitution, therefore, must be understood, not as enjoining an absolute relative equality, because that would be demanding an impossibility, but as requiring congress to make an apportionment of representatives among the several states according to their respective numbers, as near as may be. If exactness cannot, from the nature of things, be attained, then the nearest practicable approach to exactness ought to be made. **Congress is not absolved from all rule merely because the rule of perfect justice cannot be applied.** In such a case, approximation becomes a rule. It takes the place of the other rule, which would be preferable, but is found inapplicable, and becomes itself an obligation of binding force.

Denney v. State ex rel. Basler, 42 N.E. 929, 938 (Ind. 1896) (emphasis added) (quoting Senator Webster); *see also Brown v. Saunders*, 159 Va. 28 (1932).

- In a 2012 appeal brief filed in the 2012 *City of Manchester* case, the Attorney General acknowledged Part II, Article 11's intent to "provide as many single town districts **as possible**." *See* Ex. 5 attached hereto at page 4 (emphasis added).
  - *In re Reapportionment of Towns of Hartland*, 624 A.2d 323 (Vt. 1993), which the New Hampshire Supreme Court cited favorably in *City of Manchester*, further confirms the

judgment, with the 10% population deviation violation in the enacted plan as another unlawful circumstance that would be cured by way of the injunction requested herein mandating use of the Map-a-Thon House districts.

absence of any rational or legitimate basis for violating the Constitution unnecessarily. In *In re Reapportionment of Towns of Hartland*, 624 A.2d 323 (Vt. 1993), the State of Vermont failed to justify bisecting a geographical area. The Court observed that nothing in the record indicated any consideration of the district under review "or that the Board or Committee could not produce a plan that adhered to all criteria with regard to that district." *Reapportionment of Towns of Hartland*, 624 A.2d 332. Here, as in *Reapportionment of Towns of Hartland*, nothing in the legislative history shows any consideration of the constitutional concerns raised by plaintiffs in this case, or that an alternative plan could not be created (one in fact had been submitted by Map-a-Thon). By definition, then, the State of New Hampshire's treatment of the 14 towns/wards lacked <u>any</u> articulated basis, much less any "rational or legitimate" basis.[11]

- Numerous out-of-state cases directly establish a redistricting plan cannot divide a political zone more "than necessary" to comply with other legal requirements, *see Twin Falls Cnty. v. Idaho Comm'n on Redistricting*, 271 P.3d 1202, 1203 (Idaho 2012) ("We hold that the plan is invalid because it violates Article III, section 5, of the Idaho Constitution by dividing more counties than necessary to comply with the Constitution of the United States."); *Holt v. 2011 Legislative Reapportionment Comm'n*, 38 A.3d 711, 754-57 (Pa. 2012) (invalidating redistricting plan where alternative plan "avoided a highly significant percentage of political subdivision splits and fractures while maintaining a lower average population deviation"); *In re Reapportionment of the Colo. Gen. Assembly*, 332 P.3d 108, 109 (Colo. 2011) ("We hold that the Adopted Plan is not sufficiently attentive to county boundaries to meet the requirements of article V, section

[11] New Hampshire's constitutional requirement is even more express, precise, and exacting than the Vermont one violated in *Reapportionment of Towns of Hartland.*

47(2) and the Commission has not made an adequate showing that a less drastic alternative could not have satisfied the hierarchy of constitutional criteria set forth in our most recent reapportionment opinion."); *Legislative Research Comm'n v. Fischer*, 366 S.W.3d 905, 911-12 (Ky. 2012) (holding reapportionment scheme unconstitutional and reaffirming prior decisional law, which "requires division of the fewest number of counties mathematically possible in reapportionment plans"); *In re Colorado General Assembly*, 828 P.2d 185, 195-96 (Colo. 1992) ("We conclude that the Commission's explanation for dividing Pitkin County and the City of Aspen, and for the further division of Snowmass Village from Aspen, does not rise to the level of an adequate factual showing that less drastic alternatives could not have satisfied the equal population requirement of the Colorado Constitution."); *cf. In re 2011 Redistricting Cases*, 294 P.3d 1032, 1034 (Alaska 2013) ("A reapportionment plan may minimize article VI, section 6 requirements when minimization is the only means available to satisfy Voting Rights Act requirements."); *In re Legislative Districting of General Assembly*, 193 N.W.2d 784, 792-92 (Iowa 1972) (invalidating redistricting plan for failure to comply with compactness requirements in State Constitution).

The defendants have not identified any authority excusing a voluntary violation of an express constitutional requirement. Part II, Article 11 must have a meaning. To allow general policymaking preferences to be prioritized over (and thereby override) Part II, Article 11 would render that constitutional provision mere a precatory suggestion, which plainly was not intended.

In short, there is simply no basis—and certainly no "rational or legitimate" basis—for rejecting the House districts created by Map-a-Thon in the counties of the Affected Towns/Wards. In light of the foregoing and the undisputed factual record, plaintiffs are entitled

to summary judgment on their alleged violations of Part II, Article 11. Specifically, plaintiffs request summary judgment (and declaratory judgment) with respect to the following:

- The need to commit some necessary violations of Part II, Article 11 of the State Constitution is not a license to commit unnecessary violations.
- In redistricting or reapportioning the House, the State must follow the hierarchy of authority, prioritizing constitutional compliance over any non-constitutional considerations and minimizing violations of Part II, Article 11 of the State Constitution, even where perfect compliance is impossible.
- Here, during the legislative process resulting in current RSA 662:5 (Laws 2022, ch. 9), the legislature was provided with a Map-a-Thon map exemplifying how to reduce the total number of Part II, Article 11 violations by at least a net of 14 (from 55 to 41) while complying with all other federal and state constitutional mandates, but chose to enact Laws 2022, ch. 9 and in doing so failed to minimize Part II, Article 11 violations.
- RSA 662:5 (and Laws 2022, ch. 9) unconstitutionally deprived (and continues to deprive) the Affected Towns/Wards, each of which otherwise qualified for a dedicated House seat per Part II, Article 11, of dedicated House seats.
- In enacting RSA 662:5 (Laws 2022, ch. 9), the State unlawfully prioritized non-constitutional policymaking considerations over the requirements of Part II, Article 11.
- Plaintiffs have demonstrated, as a matter of law, that RSA 662:5 (Laws 2022, ch. 9) lacks a "rational or legitimate basis" for the net of fourteen unnecessary, avoidable violations of Part II, Article 11 of the State Constitution.
- Defendants have provided no or insufficient justification for Laws 2022, ch. 9's fourteen unnecessary, avoidable violations of Part II, Article 11.

- RSA 662:5 (Laws 2022, ch. 9) is declared unlawful and void to the extent that statute purports to deny dedicated House districts to the Affected Towns/Wards of Barrington, Bow, Canaan, Chesterfield, Dover Ward 4, Hanover, Hinsdale, Hooksett, Milton, New Ipswich, Newton, Lee, Plaistow, Rochester Ward 5, and Wilton.

b. Injunctive relief is necessary to remedy the constitutional violations.

Not only have plaintiffs established liability (*i.e.*, unjustified violations of Part II, Article 11) as a matter of law and correlative declaratory remedies, but the Court should also issue immediate injunctive relief that will ensure a remedy in advance of the 2024 state election cycle. Given the nature of the constitutional rights at issue and an approaching election, the plaintiffs in this case face imminent, irreparable injury unless this Court orders permanent injunctive relief. *See N.H. Dep't of Envtl. Servs. v. Mottolo*, 155 N.H. 57, 63 (2007) (injunction should only issue where "there is an immediate danger of irreparable harm to the party seeking injunctive relief, and there is no adequate remedy at law"). Voters have "fundamental rights" at stake, *see Norelli*, 175 N.H. at 200, and no remedy at law.

For backdrop, "a constitutional redistricting plan, including one drawn by a state supreme court, must be adopted within ample time to permit such plan to be utilized in the [upcoming] election, in accordance with the provisions of the state's election laws." *Norelli v. Sec'y of State*, 175 N.H. 186, 199 (2022) (quotation omitted). Typically, a state legislature is given the first opportunity to remedy constitutional violations in an enacted districting plan. "Judicial relief in the form of newly drawn districts becomes appropriate only when a legislature fails to reapportion according to constitutional requisites in a timely fashion after having had an adequate opportunity to do so." *Petition of Below*, 151 N.H. 135, 151 (2004) (cleaned up).

Here, the House candidate filing period prescribed by statute will open and close in early June 2024 (*see* RSA 655:14), and soon thereafter ballots must be printed to meet the federal 45-day requirement for distributing UOCAVA ballots to overseas voters, *see* 52 U.S.C. § 20302(a)(8). Unless the candidate filing deadline or primary election date are changed, that leaves about four months between the hearing on this motion for summary judgment and the date by which districts must be finally determined. If this Court holds the current House districting plan unconstitutional, the Court should hold a status conference at the first available date to determine, with the parties' consultation, a deadline for the legislature to act. Such a deadline must give the Court and the parties sufficient time to determine whether a new plan, if enacted, remedies the constitutional violation. If the legislature chooses not to act, or does not act by the deadline, the Court would then impose a remedial plan.

Plaintiffs acknowledge that a judicially ordered remedy must be tailored in way that causes the "least change" to the enacted House districts. *See*, *e.g.*, *Norelli*, 175 N.H. at 203. That is, the Court endeavors to adopt a redistricting plan reflecting "the least change necessary to remedy the constitutional deficiencies in the existing . . . districts." *Id*. As part of implementing a "least change" remedy, the Attorney General's Office observed in a 2012 brief, attached as Exhibit 5, that "if any provisions of RSA 662:5 . . . are determined to be unconstitutional, those provisions are severable by county." *See* Ex. 5 at 9. Plaintiffs agree; the Court should invalidate/remedy only the House districts within counties of the Affected Towns/Wards.

Therefore, plaintiffs therefore request a permanent injunction requiring at least the following (and any other relief this Court deems just, equitable, and warranted):

- The Secretary of State is enjoined from conducting House elections under the districts currently enacted in RSA 662:5 (Laws 2022, ch 9) for the counties of the

Affected Towns/Wards, meaning the counties of Cheshire, Grafton, Hillsborough, Merrimack, Rockingham, and Strafford.

- That for use in the 2024 state election and thereafter until such time as the legislature may enact a constitutionally permissible House redistricting, the House seats for these aforesaid counties be re-apportioned to address the unconstitutional aspects of RSA 662:5. The Map-a-Thon House districts illustrate one way of doing so, but whatever remedy is awarded the House apportionment within the counties of the Affected Towns/Wards must ensure: (i) there are no more than 41 total statewide violations of Part II, Article 11, and (ii) that each county for the Affected Towns/Wards contains no more than the number of Part II, Article 11 violations set forth in Map-a-Thon's House maps for each county. This remedy satisfies the normal "least change" approach used in judicially ordered redistricting. *See*, *e.g.*, *Norelli*, 175 N.H. at 203.
- That any June 2024 House candidate filing period be extended, as may be necessary in light of the final disposition of this summary judgment motion.
- After consulting with the parties, the Court should set a deadline after which the Court will issue a judicial remedy should the legislature take no or insufficient action, all such that the unconstitutional aspects of the current House maps are not used in the 2024 election. For reference, in *Burling* the Court took up the issue of remedying defective House maps after "the senate and house recessed on May 22, 2002, without enacting a house reapportionment plan." *Burling*, 148 N.H. at 145. Similarly, in *Norelli* the New Hampshire Secretary of State stated

"that any new congressional district plan needs to be in place by June 1, 2022 for the filing period that commences on that date." *Norelli*, 175 N.H. at 200.

V. CONCLUSION

There are no disputes of material fact. RSA 662:5 (Laws 2022, ch. 9) has unconstitutionally drawn House districts by failing to minimize violations of Part II, Article 11 and committing 14 unnecessary violations of Part II, Article 11, unsupported by any basis, much less a "rational or legitimate" basis. As such, declaratory and injunctive relief should issue.

Respectfully submitted,

THE CITY OF DOVER, NEW HAMPSHIRE

Dated: January 9, 2024 By: /s/ Joshua M. Wyatt

Joshua M. Wyatt, Esquire
N.H. Bar No. 18603
City Attorney
Jennifer R. Perez, Esq.
N.H. Bar No. 272947
Deputy City Attorney
Office of the City Attorney
288 Central Avenue
Dover, NH 03820
603-516-6520
j.wyatt@dover.nh.gov
j.perez@dover.nh.gov

THE CITY OF ROCHESTER, NEW HAMPSHIRE

Dated: January 9, 2024 By: /s/ Terence M. O'Rourke

Terence M. O'Rourke
N.H. Bar No. 18648
City Attorney
31 Wakefield Street
Rochester, NH 03867
603-335-1564

Terence.orourke@rochester.nh.net

DEBRA HACKETT
ROD WATKINS
KERMIT WILLIAMS
EILEEN EHLERS
JANICE KELBLE
ERIK JOHNSON
DEBORAH SUGERMAN
SUSAN RICE
DOUGLAS BOGEN
JOHN WALLACE

By their attorney,

Dated: January 9, 2024 By: /s/ Henry Quillen

Henry Quillen
NH Bar No. 265420
Whatley Kallas LLP
159 Middle St., Suite 2C
Portsmouth, NH 03801
603-294-1591
hquillen@whatleykallas.com

CERTIFICATE OF SERVICE

I hereby certify that a copy of the foregoing was served on all counsel of record through the Court's electronic filing system. A Word version copy of the plaintiffs' statement of material facts is also being emailed this day directly to counsel of record for the defendants.

Dated: January 9, 2024 By: /s/ Joshua M. Wyatt

Joshua M. Wyatt, Esquire

STATE OF NEW HAMPSHIRE

STRAFFORD COUNTY SUPERIOR COURT

City of Dover et. al.

v.

David Scanlan, Secretary of State. al.

Docket No. 219-2022-CV-00224

Exhibit 1 (Plfs.' Mot. for Summ. Judgment)
Affidavit of David Andrews
(originally filed as Ex. 2 to Complaint)

THE STATE OF NEW HAMPSHIRE
SUPREME COURT

No. 2022-_____

The City of Dover,
Debra Hackett

v.

David Scanlan,
In His Capacity as Secretary of State for New Hampshire

AFFIDAVIT OF DAVID ANDREWS

I, David Andrews, hereby testify and declare under penalty of perjury as follows:

1. I make this affidavit based on my personal knowledge in support of the Petition for Original Jurisdiction being filed by the City of Dover and Debra Hackett in the above-captioned matter, as well as any subsequent briefing or proceedings that may occur in the above-captioned matter.
2. I am a volunteer and a representative of Map-a-Thon, which is a group of individuals who have come together and volunteered their time and expertise to create proposed non-partisan redistricting maps in New Hampshire.
3. While many individuals with individual areas of expertise volunteered with Map-a-Thon, I am the lead mapper for the Map-a-Thon project. A true and accurate copy of my curriculum vitae is attached hereto as Exhibit A. As set forth in Exhibit A, I hold a B.S. in electrical engineering and a business administration minor. My coursework in college including successfully completing courses in statistics and numerous other mathematics classes. I have significant experience with Mapping Software and currently perform data analysis and legislative mapping services for Map-a-Thon. I am also a Data Analyst with the Redistricting Data Hub, a national nonprofit non-partisan

organization working to coordinate and accelerate redistricting data collection efforts as well as ensure the necessary data is widely available.

4. A true and accurate summary of the Map-a-Thon methodology for creating proposed maps for the New Hampshire House of Representatives ("New Hampshire House"), based on 2020 federal census data, is attached hereto as Exhibit B. In terms of substantive criteria, Map-a-Thon used the same substantive methodology as the New Hampshire House and Senate in relation to House Bill 50, though Map-a-Thon used different mapping software. Map-a-Thon used certain software detailed in Exhibit B. A Map-a-Thon technical member named Phil Hatcher, a retired computer science professor whose curriculum vitae is attached hereto as Exhibit C, developed an additional software program Map-a-Thon used to generate New Hampshire House districts by county, taking account of the substantive criteria. Map-a-Thon's software and supporting data was open for public inspection and review, unlike the software used by the New Hampshire legislature, which was not made publicly accessible in the same manner.
5. On November 2, 2021, Map-a-Thon submitted proposed New Hampshire House redistricting maps to the New Hampshire House based on the methodology in Exhibit B. A true and accurate copy of that submission (including explanatory analyses) is attached as Exhibit D.
6. On November 9, 2021, Map-a-Thon submitted revised, proposed New Hampshire House redistricting maps to the New Hampshire House based on the methodology in Exhibit B. A true and accurate copy of that submission (including explanatory analyses) is attached as Exhibit E.
7. On February 1, 2022, Map-a-Thon submitted proposed New Hampshire House redistricting maps to the New Hampshire Senate based on the methodology in Exhibit B. A true and accurate copy of that submission (including explanatory analyses) is attached as Exhibit F.

8. Recently, Map-a-Thon used the same methodology in Exhibit B and updated Map-a-Thon's proposed maps to take account of late local redistricting that occurred later than normal in certain municipalities. I understand certain municipalities needed additional time to review and, to the extent necessary, update their internal wards to ensure proportionality of populations in light of the 2020 census data. A true and accurate copy of Map-a-Thon's updated proposed New Hampshire House maps and accompanying analyses is attached as Exhibit G.
9. As part of updating the Map-a-Thon maps, and as shown in Exhibit G, I also reviewed the population deviation and other data from the map enacted by the State of New Hampshire, originally House Bill 50 but which is now Laws 2022, 9:1. I had to review and determine population deviation myself, because House Bill 50 evolved during the legislative process but neither the House Special Committee on Redistricting (who makes its materials available at this website[1]) nor the Senate Special Committee on Redistricting (who makes its materials available at this website[2]) published final population deviation statistics for Laws 2022, 9:1. My review and analysis of the data as well as the enacted map, taking account of final redistricting in municipalities like Dover who redistricted late, shows the population deviation of Laws 2022, 9:1 is 10.13%, as set forth in Exhibit G along with further county-by-county explanation. A true and accurate summary of the enacted maps (Laws 2022, 9:1) and related data is also attached as Exhibit H.

---

[1] http://gencourt.state.nh.us/house/committees/committee_websites/Redistricting_2021/default.aspx

[2] http://gencourt.state.nh.us/Senate/committees/Redistricting/

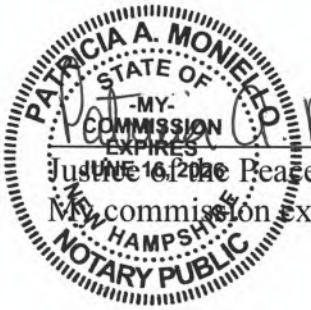
I swear and declare under penalty of perjury that the foregoing is true and correct.

David Andrews

STATE OF NEW HAMPSHIRE

COUNTY OF Strafford

On May 3, 2022, the above named David Andrews personally appeared before me and declared, and made oath, that the foregoing statements are true and accurate.



Patricia A. Moniello

Justice of the Peace/Notary Public

My commission expires: 6/16/2026

EXHIBIT A

DAVID ANDREWS

104 Burnt Hill Rd Chichester, NH 03258 · (603)724-4048
DavidAndrewsNH@gmail.com · https://www.linkedin.com/in/david-andrews-925a1528/

EDUCATION

JUNE 2011
B.S. ELECTRICAL ENGINEERING, UNIVERSITY OF NEW HAMPSHIRE
UNH Dean's scholarship and Pembroke Academy Trustees Scholarship recipient, 2006-2009

JUNE 2011
BUSINESS ADMINISTRATION MINOR, UNIVERSITY OF NEW HAMPSHIRE

SKILLS

- Microsoft Office(Excel, Word, PowerPoint)
- Python
- Mapping Software(DRA, QGIS, District Builder)
- Python Libraries(PyQt5, Pandas, Matplotlib, Numpy, Geopandas)
- Labview

EXPERIENCE

05/2021 – CURRENT
DATA ANALYST, REDISTRICTING DATA HUB
- Conducted data validation of election results and shapefiles.
- Conducted data analysis of various data sets related to redistricting.

06/2021 – CURRENT
MAP-A-THON, TECHNICAL TEAM LEAD
- Lead team of technical experts in drawing and analyzing maps for NH
- Lead community educational sessions
- Testified and submitted testimony on NH maps

08/2011 – 09/2019
TEST ENGINEER TEAM LEAD, AIRMAR TECHNOLOGY
- Lead a test engineering team of 4 engineers and 5 technicians.
- Lead team meetings and assigned and assisted with tasks and projects.
- Wrote and developed new testing programs in LabVIEW.
- Developed and performed data analysis for product testing.
- Provided testing support to a manufacturing floor.

EXHIBIT B

Map-a-Thon NH House Redistricting Methodology

The Map-a-Thon project was put together to create and submit fair maps to the NH Legislature as part of the 2020 census redistricting cycle. The Map-a-Thon is supported by a coalition of NH groups who work for fair voting maps, including Granite State Progress, the League of Women Voters of NH, Open Democracy, Open Democracy Teams, and the Kent Street Coalition.

Map-a-Thon's process of creating NH House maps started with collecting and determining criteria that should be used in creating these maps. First, we ensured that our criteria would lead to maps that complied with state and national constitutional law, current statutes, as well as prevailing court precedents. These legal criteria are listed in the following table:

NH House Criteria			
1	Population(<10%)		N.H. Constitution Rule
2	Preservation of towns/wards		By State Statute
3	Contiguity		
4	Preservation of Counties		
5	Each town in one non-floterial district		
6	Dedicated districts for eligible towns		
7	Preservation of COI's		

Due to the use of floterial and multi-member districts in the NH House, population deviation for the NH House cannot be calculated in the same way as it is for single-seat representative districts such as the United States Congress. We explored multiple methodologies for calculating population deviation in our proposed districts but eventually settled on using the relative deviation for single-member districts, the relative deviation using the "aggregate method" for multimember districts, and the "component method" for floterial districts. These methods were outlined in the NH Supreme Court case "Burling v. Chandler, 148 N.H. 143 (2002)" as acceptable ways to calculate deviations including those for floterial districts. These are the same methods used by the NH legislature in the currently enacted maps. Further explanation of the component method can be found in Appendix A.

The 6th criteria was a major focus of our mapping of the NH House. The other criteria are very straightforward once you have a way to calculate deviations of floterial districts. Once you establish that, the first five criteria are either met or they are not. The 6th criteria is where the maps proposed by Map-a-Thon and the enacted maps diverge. In accordance with NH Constitution part 2 article 11 "When the population of any town or ward, according to the last federal census, is within a reasonable deviation from the ideal population for one or more representative seats, the town or ward shall have its own district of one or more representative seats", we also worked to produce maps that yielded dedicated districts where population allowed. When a town/ward qualified for, but did not receive, its own district, we categorized it as a 'violation' in our analysis, and we worked to produce NH House district maps that reduced the number of these violations.

Our NH House maps were originally created manually in the free online mapping tool Dave' s Redistricting App (DRA) using a 'homemade' tool to perform the component method calculations needed to determine the deviations of towns/wards in floterial districts. We created maps for all 10 counties, but we were unhappy with the number of violations of our 6th criterion and set out to optimize the maps accordingly.

One of our Map-a-Thon technical team members developed a program to automatically generate NH House district maps by county. This program took inputs of: number of representatives assigned to the county, town/ward populations, and towns/wards with adjacent towns/wards, along with two parameters used to limit the size of districts, to generate a list of possible maps. These maps considered all 6 of the divided criteria. We then filtered the list of possible maps to find those that had the fewest violations for each county. Further explanation of the program can be found in Appendix B.

Once lists of possible maps for each county with the lowest violations were established, we then took another pass through the maps to find those which preserved the largest number of "Communities of Interest" (COIs) and yielded the largest number of small districts (theoretically better representation) to ultimately choose the best possible map for each county. We then submitted our set of optimal county maps to the NH House Special Committee on Redistricting on 2 November 2021.

We analyzed maps proposed by the minority and majority parties in the NH House Special Committee on Redistricting as they became available to determine if any better satisfied the defined criteria. We found that several of the maps had fewer violations than our own maps, as well as contained some unique district combinations that would contribute to fewer violations if used in our maps. Through this collective, holistic analysis we identified our preferred map for each county. Also, after seeing the majority propose a map for Sullivan County that had deviations outside of the +/-5% allowable range we were using we also submitted maps for Carroll, Strafford, and Sullivan county that all used deviations going from 5% to -10%. After the majority chose to not go forward with their map, we followed suit sticking to maps that stayed within the +/- 5% range. This analysis was submitted to the NH House Special Committee on Redistricting on 9 November 2021.

After maps passed the NH House Special Committee on Redistricting and the full NH House, they went to the NH Senate Election Law Committee. We submitted our preferred maps to that committee on 1 February 2022. Our currently proposed maps differ slightly from this submission as they account for ward changes from cities across NH that were not finalized at the time of our February submission.

Populations used in our calculations are based exclusively on the 2020 decennial census data and updated ward populations were gathered from the necessary cities in NH. In our deviation calculations we used the ideal district size of (Total NH Population/# of Reps) or (1,377,529/400). Sources for populations can be found in Appendix C.

In our final analysis we determined that the enacted maps had 55 violations vs. 41 violations in our proposed maps. The total map deviation for the enacted maps is 10.13% vs 9.94% in our proposed maps. In our proposed maps the towns/wards of Barrington, Bow, Canaan, Chesterfield, Dover Ward 4, Hanover, Hinsdale, Hooksett, Milton, New Ipswich, Newton, Lee, Plaistow, Rochester Ward 5, and Wilton would gain their own districts. The town of Durham would lose its own district in our proposed maps.

APPENDIX

Appendix A.

Component Method

The Component Method calculates a deviation value for each town under consideration separately, and then the aggregate deviation is found by taking the difference of the max and min among the towns. This is the method that was used in the 2010 and 2020 NH House redistricting process. This was also the method that was used in the Map-a-Thon's proposed maps.

Variables

P_A = Population of district A

P_T = Population total $(P_A + P_B + P_C \ldots)$

S_A = Seats assigned to district A

S_F = Seats assigned to float district

IP_S = Ideal population per seat

AS_A = Adjusted seats of district A area

D_A = Deviation of district A area

Equations

$$AS_A = S_A + \left(\frac{P_A}{P_T} \times S_F\right)$$

$$D_A = \frac{\frac{P_A}{IP_S} - AS_A}{AS_A} \times 100$$

Appendix B.

Automatically Generating NH House Maps

Phil Hatcher

October 2021

Lightly edited in April 2022 for release outside of the Map-A-Thon tech team

Background

Drawing electoral maps for the NH House is challenging due to the large number of representatives and the need to construct districts with roughly the same population per representative. To find a district map with acceptable population deviations requires sifting through the very large number of possible ways to combine towns and city wards into districts. This document describes the algorithm I developed and implemented to automatically perform the mapping process.

Input

NH House district maps are developed on a per-county basis, since NH House districts cannot cross county lines. One run of the program implementing the algorithm will construct a map for one particular county. The only input to the program is a tab-separated-value file. The first line in this file contains the number of representatives that are allocated to the county. The rest of the file contains a line for each town and city ward in the county, giving its name, its population and a list of the towns and wards that it is adjacent to. In this document I will refer to towns and city wards as *precincts,* with districts being built from adjacent precincts.

The program also has a few parameters that are embedded in the text of the program:

- Two parameters are used to limit the size of the districts. They are called *N* and *M* and are described in detail below.
- A parameter specifies the ideal population for one representative. This is calculated by dividing the total population of the state by 400, the total number of representatives.
- A parameter specifies the maximum allowable population deviation.

Overview

As well as ensuring that districts are built from adjacent precincts and have acceptable population deviations, the algorithm minimizes the number of precincts that are eligible for dedicated representatives but do not get them. In addition, all precincts are placed into a non-floterial district, which may or may not be incorporated into an encompassing floterial district. And, of course, the algorithm does not subdivide precincts in the mapping process. Districts are always built from precincts, and never from pieces of precincts.

Those requirements (population deviation, dedicated representation, non-floterial district membership) are explicitly dictated by the NH constitution. The algorithm also attempts to build small districts. The size of districts is not discussed in the constitution, but small districts are widely seen as providing better representation to the residents of the districts. Also, focusing

only on small districts makes the exploration of the large space of possible districts more computationally feasible.

The algorithm performs two phases. First, a set of possible districts are constructed. Second, subsets of the possible districts are identified such that the districts of a subset do not have any common precincts (i.e. each district is distinct), the districts in a subset together include all the precincts in the county, and the number of violations, where eligible towns do not receive dedicated representatives, is minimized.

Phase 1: Identifying Possible Districts

Possible districts are constructed by first building sets of precincts. Each set is initialized to contain a *root* precinct. Then precincts are added to the set if they are adjacent to the root or to another precinct already in the set. However, a precinct can only be added if it can be reached from the root precinct by crossing no more than *N* precinct boundaries, where *N* is a parameter to the algorithm.

Once the set of precincts for a given root is complete, then all subsets of that set of size *M* or less and that contain the root precinct are evaluated to see if they might be a potential district. *M* is another parameter to the algorithm. A subset is accepted as a potential district if, first, the precincts in the subset are all connected (meaning any precinct can reach any other precinct by only traversing other precincts in the subset), and if, second, the sum of the populations of the precincts in the subset is within a small deviation of an even multiple of the ideal population for one representative. (The ideal population for one representative is computed by taking the total population of the state and dividing by the total number of representatives.) The first test ensures that the precincts in the subset are contiguous. The second test ensures that the subset could become a multi-precinct district (or a single-precinct district if the subset contains only one precinct), even if it will not work as a floterial district encompassing a set of “inner” districts. If both tests pass then the subset is added to a set of potential districts to be considered in the second phase of the algorithm.

Note that the two parameters *N* and *M* are used to limit the size of the potential districts and to try to make them geographically compact.

The ideal population for one representative is also a parameter to the program.

All precincts in the county are considered in turn as the root of a subset of precincts that is used to generate potential districts. Often a potential district can be generated from more than one root precinct, but these duplicates are weeded out as potential districts are gathered together into one set.

As a potential district is added to the set of potential districts, it is evaluated to see if it could be a floterial district. This requires that all possible groupings of the precincts be considered as inner districts. The component method is used to evaluate the population deviations for a particular grouping of the precincts into inner districts. If no grouping can be found that satisfies the component method, the potential district will simply be a multi-precinct district, as mentioned above.

In addition, when the potential district is added to the set of potential districts, its cost is computed. The cost is the total number of eligible precincts in the district that did not receive dedicated representatives. Remember that the goal of the algorithm is to minimize this cost.

Phase 2: Generating Minimum Cost DIstrict Maps

The set of potential districts is searched to find valid maps, which contain districts that will include all the precincts of the county exactly once. Maps are constructed one district at a time and the algorithm can have a large set of maps under construction at once. Each map under construction has a cost, which is the sum of the costs for the districts in the map.

The algorithm starts with an arbitrary precinct, and initiates a map for each district in the set of potential districts that includes the precinct. These partial maps are processed in turn by arbitrarily choosing a precinct not already in a district in the map and considering all the potential districts that include the chosen precinct and do not conflict with districts already in the map. (Two districts conflict if a precinct is included in both districts.) For each such district, a new map is created by adding the district to the map being worked on. When all such new maps have been constructed, they are added to the queue of partial maps to be processed, and the old map just processed is discarded.

If a complete map is found, one that includes all the precincts in the county, then it is not put into the queue for further processing, but is instead compared to any other complete maps that have been found. If it has a higher cost than the maps found earlier, it is simply discarded. If it has the same cost as the maps found earlier, then it is added to the list of the minimum cost complete maps. If it has a lower cost than the maps found earlier, then the old list of complete maps is discarded, and the new complete map becomes a list of length one of minimum cost complete maps. Of course, to be accepted, a completed map must assign the exact number of representatives allocated to the county.

Once a complete map is found, its cost can be used to bound the search. Any partial map that has a cost greater than the cost of a completed map can be discarded. This is because the cost of a map under construction only stays the same or grows larger as we add a district to a partial map.

Eventually the queue of partial maps to be processed will become empty. At that point the list of minimum cost complete maps is output.

Outputs

The program outputs the minimum cost complete maps in a text file, using a compact format to represent each map. Here is an example of the output of a map:

```
Map 3 (cost 2)

  [1 viol, 13228 pop, F]((Middleton,NewDurham,Strafford*):2,Milton:1):4

  [0 viol, 6722 pop, SP](Farmington):2

  [0 viol, 10830 pop, F](Rochester1:1,Rochester2:1):3

  [0 viol, 10830 pop, F](Rochester3:1,Rochester4:1):3

  [0 viol, 10832 pop, F](Rochester5:1,Rochester6:1):3

  [0 viol, 13846 pop, F](Barrington:2,Lee:1):4

  [0 viol, 14452 pop, MP](Somersworth1,Somersworth2,Somersworth3,Somersworth4,Somersworth5,Rollinsford):4

  [0 viol, 16370 pop, F](Dover1:1,Dover5:1,Dover6:1):5
```

```
  [0 viol, 16371 pop, F](Dover2:1,Dover3:1,Dover4:1):5

  [1 viol, 17408 pop, MP](Madbury,Durham*):5

[overall deviation is 9.9% (-4.9%,4.9%)
```

The first line gives the map a number in the list of maps generated by this run of the program, which was for Strafford County. There were actually 266 maps generated by this run, all with only 2 violations of the requirement for dedicated representatives, and appearing one after the other in the text file. The cost figure given on this line is the total number of violations in the map.

The following lines describe districts:

- Each line begins with the violation count for this district, as well as its total population and a code for the type of the district (F for floterial, SP for single precinct, MP for multi-precinct, but not floterial).
- Then the towns in the district are provided. For a floterial they may be grouped within parentheses, indicating "inner" districts from which the floterial is built. Also towns in a floterial may be followed by a colon and a number indicating the number of dedicated representatives assigned to the town. If the inner district is a multi-precinct district, then its towns will not be assigned representatives, but the whole inner district will be assigned representatives.
- Finally, each line ends with a colon followed by a number, which is the total number of representatives in the district.
- For example, the second line above describes a floterial district with:
    - an inner multi-precinct district with Middleton, New Durham and Strafford, with two at-large representatives for the three towns;
    - Milton receives a dedicated representative;
    - and the whole district is assigned four representatives, meaning there is one rep assigned to all four towns (since two representatives were assigned to the three towns in the inner district and one was assigned to Milton, leaving one to serve all the towns).
    - By the way, the asterisk after Strafford indicates a violation. Strafford is eligible for a dedicated representative but did not receive one in this map. (Durham is the other violation, which you can see on the second to last line. It is joined with Madbury as a multi-precinct district.)

The last line gives the spread of the population deviations for the districts. In this case, the spread is from -4.9% to +4.9%, meaning the total deviation is less than 10%.

The program has two other output files. They are both comma-separated-value files. The first is a list of all the potential districts identified in Phase 1. The second is a list of the minimum cost complete maps found in Phase 2. Each map is described using internal district numbers, as shown in the other CSV file. These two files are primarily used by me for debugging purposes.

Notes

The population deviation for a district must be within ±*D*%, where D is a parameter to the algorithm. My runs have been done with *D = 5*. Would this preclude an acceptable deviation range of (-2%, +8%)?

The maximum number of precincts I support in a district (i.e. *M*) is only 7. The problem is that I do not have a good algorithm for generating all possible groupings of precincts for larger districts. Right now I explicitly delineate in the code the possible groups for each size district, rather than having a general algorithm that would more easily support bigger districts.

I ran all counties but one, Rockingham, using *N = 3* and *M = 7*. For Rockingham I used *N = 2* and *M = 5*, because otherwise the running time became prohibitive. I also removed 5 towns from the Rockingham input, and incorporated David's hand solution for those towns. This again was to try to control the running time of the program.

My approach to limiting the size of districts does not prohibit strangely shaped districts. For instance, with *N = 3* and *M = 7*, a district can be constructed as a long narrow band of precincts, with a root precinct in the middle and three precincts on either side. Also I have seen a district consisting of a loop of precincts that surround and isolate a precinct that is not in the district. More work would be required to force districts to have a reasonable shape.

I do not have a clear understanding of why Rockingham County took so much more computation than the others. It appears to be more than just the number of precincts in the county. This needs further study.

I have not explored, in general, varying *N* and *M*, and am not sure what effect they have, in general, on finding solutions or running time.

I was not sure how best to represent the many towns in Coos county with a population of zero. I ended up just combining them with neighboring towns, but this might have limited my results by distorting adjacency relationships. In fact, David Andrews found maps for Coos county with zero violations so I did not worry too much about Coos.

Appendix C.

New Hampshire Population – 1,377,529

https://www.nh.gov/osi/data-center/2020-census/index.htm#:~:text=The%20U.S.%20Census%20Bureau%20announced,4.6%25%20since%20the%202010%20census

Concord Ward Populations*

https://www.concordnh.gov/ArchiveCenter/ViewFile/Item/5720

*Ward 5 population listed is incorrect. It should be 4,338

Dover Ward Populations

Via email from Chris Parker, Dover deputy city manager 12/16/21

Keene Ward Populations

http://www.gencourt.state.nh.us/senate/committees/Redistricting/billsandsubmissions/keene%20wards.pdf

Laconia Ward Populations

https://www.laconianh.gov/DocumentCenter/View/7627/2021-Redistricting-Map-PDF?bidId=

Lebanon Ward Populations

https://civicclerk.blob.core.windows.net/stream/LEBANONNH/ff53ae56-2f84-4098-9301-c58efd682822.pdf?sv=2015-12-11&sr=b&sig=gF4tP0hYSvJ59yVbTbaNZUxpJIz3HdutePk%2F9Nvrfzo%3D&st=2022-04-29T14%3A15%3A42Z&se=2023-04-29T14%3A20%3A42Z&sp=r&rscc=no-cache&rsct=application%2Fpdf

Portsmouth Ward Populations

http://www.gencourt.state.nh.us/senate/committees/Redistricting/billsandsubmissions/Portsmouth%20Cover%20Letter.pdf

Rochester Ward Populations

Via email from Kelly Walters, Rochester city clerk 12/17/21

EXHIBIT C

PHILIP J. HATCHER

Education

1985	Ph.D.	Computer Science	Illinois Institute of Technology
1979	M.S.	Computer Science	Purdue University
1978	B.S.	Mathematics	Purdue University

Experience

2019–	Professor Emeritus of Computer Science, University of New Hampshire
2018	Acting Chair of Computer Science, University of New Hampshire
2007–2011	Chair of Computer Science, University of New Hampshire
2003–2006	Chair of Computer Science, University of New Hampshire
1997–1999	Chair of Computer Science, University of New Hampshire
1997–2019	Professor of Computer Science, University of New Hampshire
1997	Professor Invité, École Normale Supérieure de Lyon
1992–1997	Associate Professor of Computer Science, University of New Hampshire
1993	Parallel Programming Tools Consultant, Kendall Square Research Corporation
1992–1993	Technical Languages Consultant, Digital Equipment Corporation
1986–1992	Assistant Professor of Computer Science, University of New Hampshire
1981–1986	Instructor and Laboratory Manager, Illinois Institute of Technology

Honors

2017–2020	Class of 1944 Professorship Award, University of New Hampshire
1996–1998	Waite Professorship, University of New Hampshire
1992	Outstanding Faculty Award, University of New Hampshire
1978	Phi Beta Kappa, Purdue University

Professional Service

2012	Program Committee, 27th IEEE International Parallel and Distributed Processing Symposium
2004	Program Committee, Systems Software, International Conf. on High Performance Computing
2001	Program Committee, workshop on Java in High Performance Computing, HPCN 2001
2000	Guest Editor, *Parallel Computing*, issue on Parallel Computing for Irregular Applications
1998	Vice Chair, Workshop on Parallel Languages, Euro-Par '98
1997	Program Committee, Fifth Annual Workshop on I/O in Parallel and Distributed Systems
1993	Program Committee, Second Annual Symposium on Issues and Obstacles in the Practical Implementation of Parallel Algorithms and the Use of Parallel Machines
1992–1996	Associate Editor, IEEE Parallel and Distributed Technology
1992	Program Committee, First Annual Symposium on Issues and Obstacles in the Practical Implementation of Parallel Algorithms and the Use of Parallel Machines

Grants and Contracts

"XANSation Evaluation," $14,000, Lamprey Networks, Inc., grant funded May 2006 (with S. Valcourt).

"U.S.A.–France Cooperative Research: Implementing a Cluster Version of Java with the PM2 Distributed and Multithreaded Run-Time System," $14,000, National Science Foundation and INRIA (France), grant funded May 2001 (with R. Russell, L. Bougé and R. Namyst).

"U.S.A.–France Cooperative Research: A Parallel Programming Environment for C*," $14,000, National Science Foundation and INRIA (France), grant funded January 1998 (with R. Russell, L. Bougé and R. Namyst).

"Laboratory for Advanced Communication Systems," $475,859, National Science Foundation, grant funded September 1996 (with R.D. Bergeron, J. Bernhard, M. Carter, E. Freuder, B. Reinhold and R. Russell).

"Evaluating the PSR DPCE Compiler," $11,000, Pacific-Sierra Research Corp., grant funded May 1996.

"A High-Bandwidth Network Testbed for Parallel Computation," $121,547, National Science Foundation, grant funded May 1995 (with R.D. Bergeron, E. Freuder, R. Russell and T. Sparr).

"Support for UNH C*," $123,600, MRJ Inc., grant funded June 1995.

"Data-Parallel Compiler Technologies for Future-Generation Multicomputers," $316,000, National Science Foundation, grant funded May 1993 (with M. Quinn).

"High-Performance C," $28,000, Digital Equipment Corporation, grant funded August 1992.

"A Network Version of Dataparallel C," $47,000, Oregon Advanced Computing Institute and IBM Corporation, grant funded May 1992 (with M. Quinn).

"An Extended Dataparallel C Programming Environment on the Intel iWARP," $40,000, Oregon Advanced Computing Institute and Intel Corporation, grant funded September 1991 (with M. Quinn).

"Porting the UNH/OSU C* Compiler to the Intel iPSC/2 and iPSC/860," $20,000, Oregon Advanced Computing Institute and Intel Corporation, grant funded January 1991 (with M. Quinn).

"Data Parallel Programming on Diverse Architectures: Tools and Algorithms," $327,000, National Science Foundation, grant funded August 1989 (with M. Quinn).

"A C* Compiler for Hypercube Multicomputers," $47,000, National Science Foundation, grant funded January 1989 (with M. Quinn).

"Research Experiences for Undergraduates," $40,000, National Science Foundation, grant funded May 1987.

Monograph

P. Hatcher and M. Quinn. *Data-Parallel Programming on MIMD Computers*, The MIT Press, 1991.

Book Chapters

S. Chappelow, P. Hatcher and J. Mason. "Optimizing Data-Parallel Stencil Computations in a Portable Framework," in Szymanski and Sinharoy, editors, *Languages, Compilers, and Run-Time Systems for Scalable Computers*, Kluwer Academic Publishers, 1995.

L. Hamel, P. Hatcher, M. Quinn. "An Optimizing C* Compiler for a Hypercube Multicomputer," in Saltz and Mehrotra, editors, *Languages, Compilers, and Run-Time Environments for Distributed Memory Machines*, Elsevier Science Publishers, 1992.

M. Quinn, P. Hatcher, and B. Seevers. "Implementing a Data Parallel Language on a Tightly Coupled Multiprocessor," in Nicolau, Gelernter, Gross and Padua, editors, *Advances in Languages and Compilers for Parallel Processing*, Pitman/MIT Press, 1991.

Refereed Journal Publications

R. Maddamsetti, P. Hatcher, A. Green, B. Williams, D. Marks, and R. Lenski. "Core Genes Evolve Rapidly in the Long-Term Evolution Experiment with *Escherichia coli*," *Genome Biology and Evolution*, 9(4), 2017.

C. Peeters, V. Cooper, P. Hatcher, B. Verheyde, A. Carlier, and P. Vandamme. "Comparative Genomics of *Burkholderia multivorans*, a Ubiquitous Pathogen with a Highly Conserved Genomic Structure," *PLOS ONE*, 12(4), 2017.

Y. Wang, C. Diaz-Arenas, D. Stoebel, K. Flynn, E. Knapp, M. Dillon, A. Wunsche, P. Hatcher, F. Moore, V. Cooper, and T. Cooper. "Benefit of Transferred Mutations is Better Predicted by the Fitness of Recipients than by their Ecological or Genetic Relatedness," *Proceedings of the National Academy of Sciences*, 113(18), 2016.

R. Maddamsetti, P. Hatcher, S. Cruveiller, C. Medigue, J. Barrick, and R. Lenski. "Synonymous Genetic Variation in Natural Isolates of *Escherichia coli* Does Not Predict Where Synonymous Substitutions Occur in a Long-Term Experiment," *Molecular Biology and Evolution*, 32(11), 2015.

F. Abebe-Akele, L. Tisa, V. Cooper, P. Hatcher, E. Abebe and W. Thomas. "Genome Sequence and Comparative Analysis of a Putative Entomopathogenic *Serratia* Isolated from *Caenorhabditis briggsae*," *BMC Genomics*, 16(531), 2015.

J. Colbourne, M. Pfrender, D. Gilbert, W. K. Thomas, A. Tucker, T. Oakley, S. Tokishita, A. Aerts, G. Arnold, M. Kumar Basu, D. Bauer, C. Cáceres, L. Carmel, C. Casola, J.-H. Choi, J. Detter, Q. Dong, S. Dusheyko, B. Eads, T. Fröhlich, K. Geiler-Samerotte, D. Gerlach, P. Hatcher, S. Jogdeo, J. Krijgsveld, E. Kriventseva, D. Kültz, C. Laforsch, E. Lindquist, J. Lopez, J. Manak, J. Muller, J. Pangilinan, R. Patwardhan, S. Pitluck, E. Pritham, A. Rechtsteiner, M. Rho, I. Rogozin, O. Sakarya, A. Salamov, S. Schaack, H. Shapiro, Y. Shiga, C. Skalitzky, Z. Smith, A. Souvorov, W. Sung, Z. Tang, D. Tsuchiya, H. Tu, H. Vos, M. Wang, Y. Wolf, H. Yamagata, T. Yamada, Y. Ye, J. Shaw, J. Andrews, T. Crease, H. Tang, S. Lucas, H. Robertson, P. Bork, E. Koonin, E. Zdobnov, I. Grigoriev, M. Lynch, and J. Boore. "The Ecoresponsive Genome of *Daphnia pulex*," *Science*, 331(6017):555–561, 2011.

K. Flynn, S. Vohr, P. Hatcher and V. Cooper. "Evolutionary Rates and Gene Dispensability Associate with Replication Timing in the Archaeon *Sulfolobus islandicus*," *Genome Biology and Evolution*, 2:859–869, 2010.

V. Cooper, S. Vohr, S. Wrockledge, P. Hatcher. "Why Genes Evolve Faster on Secondary Chromosomes in Bacteria," *PLoS Computational Biology*, 6(4), 2010.

A. Lapadula, P. Hatcher, A. Hanneman, D. Ashline, H. Zhang and V. Reinhold. "OSCAR: An Algorithm for Assigning Oligosaccharide Topology from MS^n Data," *Analytical Chemistry*, 77(19):6271–6279, 2005.

M. Reno, P. Hatcher, L. Bougé and G. Antoniu. "Cluster Computing with Java," *IEEE Computing in Science and Engineering*, 7(2):34–39, 2005.

T. Kielmann, L. Bougé, P. Hatcher and H. Bal. "Enabling Java for High-Performance Computing: Exploiting Distributed Shared Memory and Remote Method Invocation," *Communications of the ACM*, 44(10):110–117, 2001.

G. Antoniu, L. Bougé, P. Hatcher, M. MacBeth, K. McGuigan, and R. Namyst. "The Hyperion System: Compiling Multithreaded Java Bytecode for Distributed Execution," *Parallel Computing*, 27(10):1279-1297, 2001.

M. Quinn and P. Hatcher. "On the Utility of Communication-Computation Overlap in Data-Parallel Programs," *Journal of Parallel and Distributed Computing* 33(2):197–204, 1996.

D. Lickly and P. Hatcher. "C++ and Massively Parallel Computers," *Scientific Programming* 2(4):193–202, 1993.

M. Quinn, B. Seevers, and P. Hatcher. "A Parallel Programming Environment Supporting Data-Parallel Modules," *International Journal of Parallel Programming* 12(5):363–386, 1992.

M. Quinn, B. Seevers, and P. Hatcher. "Implementing a Time-Driven Simulation on a MIMD Computer using a SIMD Language," *International Journal of Computer Simulation* 1(2):21–39, 1992.

P. Hatcher, M. Quinn, A. Lapadula, B. Seevers, R. Anderson, and R. Jones. "Data-Parallel Programming on MIMD Computers," *IEEE Transactions on Parallel and Distributed Computing* 2(3):377–383, July 1991.

P. Hatcher. "The Equational Specification of Efficient Compiler Code Generation," *Computer Languages* 16(1):81–95, January 1991.

M. Quinn and P. Hatcher. "Data Parallel Programming on Multicomputers," *IEEE Software* 7(5):69–76, September 1990.

Refereed Conference Publications

H. Hu, Y. Rzhanov, P. Hatcher and R.D. Bergeron. "Binary Adapted Semi-Global Matching Based on Image Edges," in *Proceedings of the Seventh International Conference on Digital Image Processing*, April 2015.

J. Jackson and P. Hatcher. "Efficient Parallel Execution of Sequence Similarity Analysis Via Dynamic Load Balancing," in *Proceedings of the ISCA 3rd International Conference on Bioinformatics and Computational Biology*, March 2011.

T. Fogal, H. Childs, S. Shankar, J. Kruger, R.D. Bergeron, P. Hatcher. "Large Data Visualization on Distributed Memory Multi-GPU Clusters," in *Proceedings of High Performance Graphics 2010*, June 2010.

G. Antoniu, P. Hatcher, M. Jan and D. Noblet. "Performance Evaluation of JXTA Communication Layers," in *Proceedings of the Fifth International Workshop on Global and Peer-to-Peer Computing*, May 2005.

G. Antoniu and P. Hatcher. "Remote Object Detection in Cluster-Based Java," in *Proceedings of the 3rd Workshop on Java for Parallel and Distributed Computing*, April 2001.

G. Antoniu, L. Bougé, P. Hatcher, M. MacBeth, K. McGuigan, and R. Namyst. "Compiling Multithreaded Java Bytecode for Distributed Execution," in *Proceedings of European Conference on Parallel Computing*, August 2000. (Distinguished paper: one of only five selected from 328 submissions.)

G. Antoniu, L. Bougé, P. Hatcher, M. MacBeth, K. McGuigan, and R. Namyst. "Implementing Java Consistency Using a Generic, Multithreaded DSM Runtime System," in *Proceedings of the International Workshop on Java for Parallel and Distributed Computing*, May 2000.

M. MacBeth, K. McGuigan and P. Hatcher. "Executing Java Threads in Parallel in a Distributed-Memory Environment," in *Proceedings of the IBM Centre for Advanced Studies Conference*, November 1998.

L. Bougé, P. Hatcher, R. Namyst and C. Perez. "A Multithreaded Runtime Environment with Thread Migration for a HPF Data-Parallel Compiler," in *Proceedings of the International Conference on Parallel Architectures and Compilation Techniques*, October 1998.

R. Russell and P. Hatcher. "Efficient Kernel Support for Reliable Communication," in *Proceedings of the ACM Symposium on Applied Computing*, February 1998.

J. Moore, P. Hatcher and M. Quinn. "Efficient Data-Parallel Files via Automatic Mode Detection," in *Fourth Annual Workshop on I/O in Parallel and Distributed Systems*, May 1996.

J. Moore, P. Hatcher and M. Quinn. "Stream*: Fast, Flexible Data-Parallel I/O," in *Proceedings of Parallel Computing '95*, September 1995.

P. Hatcher and M. Quinn. "Supporting Data-Level and Processor-Level Parallelism in Data-Parallel Programming Languages," in *Proceedings of the 26th Hawaii International Conference on Systems Sciences*, January 1993.

P. Hatcher, M. Quinn, A. Lapadula, and R. Anderson. "Compiling Data-Parallel Programs for MIMD Architectures," in *Proceedings of European Workshop on Parallel Computing*, pp. 28–39, March 1992.

P. Hatcher, M. Quinn, R. Anderson, A. Lapadula, B. Seevers, and A. Bennett. "Architecture-Independent Scientific Programming in Dataparallel C: Three Case Studies," in *Proceedings of Supercomputing '91*, pp. 208–217, November 1991.

P. Hatcher, A. Lapadula, R. Jones, M. Quinn, and R. Anderson. "A Production-Quality C* Compiler for a Hypercube Multicomputer," in *Proceedings of the Third SIGPLAN Symposium on Principles and Practice of Parallel Programming*, pp. 73–82, April 1991.

P. Hatcher, M. Quinn, A. Lapadula, R. Anderson, R. Jones. "Dataparallel C: A SIMD Language for Multicomputers," in *Proceedings of the Sixth Distributed Memory Computing Conference*, April 1991.

P. Hatcher and M. Quinn. "C*-Linda: A Programming Environment with Multiple Data Parallel Modules and Parallel I/O," in *Proceedings of the 24th Hawaii International Conference on Systems Sciences*, pp. 382–389, January 1991.

M. Quinn and P. Hatcher. "Compiling SIMD Programs for MIMD Architectures," in *Proceedings of the IEEE International Conference on Computer Languages*, pp. 291–296, March 1990.

P. Hatcher and J. Tuller. "Efficient Retargetable Compiler Code Generation," in *Proceedings of the IEEE International Conference on Computer Languages*, pp.25–30, October 1988.

M. Quinn, P. Hatcher, and K. Jourdenais. "Compiling C* Programs for a Hypercube Multicomputer," in *Proceedings of the ACM/SIGPLAN Parallel Programming: Experience with Applications, Languages, and Systems*, pp. 57–65, July 1988.

P. Hatcher and T. Christopher. "High-Quality Code Generation via Bottom-up Tree Pattern Matching," in *Conference Record of the Thirteenth Annual ACM Symposium on Principles of Programming Languages*, pp. 119–130, January 1986.

T. Christopher, P. Hatcher, and R. Kukuk. "Using Dynamic Programming in a Graham-Glanville Style Code Generator," in *Proceedings of the ACM SIGPLAN Symposium on Compiler Construction*, pp. 25–36, June 1984.

T. Christopher and P. Hatcher. "A Network Computer for Distributed Software Research," in *Proceedings of the 1983 ACM Conference on Personal and Small Computers*, pp. 9–13, December 1983.

Other Publications

P. Hatcher, R. Russell, M. Quinn and S. Kumaran. "Implementing Data-Parallel Programs on Commodity Clusters," in *Proceedings of the Spring School on Data Parallelism*, Les Ménuires (France), March 1996. Published in Perrin and Darte, editors, *The Data Parallel Programming Model: Foundations, HPF Realization, and Scientific Applications*, Springer-Verlag, Lecture Notes in Computer Science, Volume 1132, 1996.

S. Batra, P. Hatcher, and R. Russell. "The Design and Implementation of Data-Parallel Files," presented at the *Workshop on Modeling and Specification of I/O*, October 1995. Publication via the World Wide Web.

P. Hatcher. "The Joy of Data-Parallel Programming," in *Proceedings of the Dartmouth Institute for Advanced Graduate Studies in Parallel Computation Symposium*, pp. 19–30, June 1992.

W. Tichy, M. Philippsen, and P. Hatcher. "A Critique of the Programming Language C*," *Communications of the ACM*, 35(6):21–25, June 1992. Appeared as Technical Correspondence.

P. Hatcher. "NSF-REU Program Helps Computer Science Students and Teachers See Value in Education," *Journal of College Science Teaching* 18(3):168–169, January 1989.

Theses Supervised

Seth Hager, M.S., September 2016
"Migrating Thread-Based Intentional Concurrent Programming to a Task-Based Paradigm"

Nicholas Craycraft, B.S., May 2016
"A System for Intentional, Multithreaded Java"

Han Hu, M.S., June 2015
"Binary Adapted Semi-Global Matching Based on Image Edges"

Chris Hebert, M.S., May 2015
"Inferring Types to Eliminate Ownership Checks in an Intentional Javascript Compiler"

Michaela Tremblay, B.S., May 2015
"Throwing Exceptions for Concurrency Errors"

Niels Widger, M.S., May 2014
"Deterministic Execution in a Java-like Language"

James Jackson, M.S., September 2012
"The Accessibility and Scalability of Gene Family Analysis"

Ben Decato, B.S., May 2012
"Patterns of Evolution in Bacteria"

Brad Larsen, M.S., December 2010
"Compiling an Array Language to a Graphics Processor"

James Jackson, B.S., May 2010
"Load-Balancing Genome Similarity Analysis"

Brad Larsen, B.S., August 2008
"Object Replication in the Large Address Space Virtual Machine"

Lina Faller, B.S., May 2008
"An Investigation of Palindromic Sequences in the *Pseudomonas fluorescens* SBW25 Genome"

Anthony Lapadula, Ph.D., September 2007
"GlySpy: A Software Suite for Assigning Glycan Topologies from Sequential Mass Spectral Data"

Stephen Todd, M.S., December 2006
"Comparing the XAM API with File System Programming"

Kevin Clark, M.S., May 2005
"Evaluating the Performance of Hyperion, a Distributed Shared Memory Implementation of Java"

David Noblet, B.S., December 2004
"JXTA Communication Performance Evaluation"

Matt Reno, M.S., February 2003
"Comparing the Performance of Distributed Shared Memory and Message Passing Programs Using the Hyperion Java Virtual Machine on Clusters"

Joel Daniels, B.S., December 2002
"Improving Wide-Area Network Performance in Computational Grid Applications"

Mark MacBeth, M.S., July 1999
"Compiling Java Bytecode for a Distributed Environment"

Mehul Dholakia, M.S., December 1998
"A Simulator for the UNH DPCE Compiler"

Todd Medlock, M.S., August 1998
"Supporting Internode Communications on Clusters of Commodity SMP Machines"

Keith McGuigan, B.S., May 1998
"A Distributed Java Virtual Machine"

Daniel Luchaup, M.S., December 1997
"A Data-Parallel C Extensions Compiler Front End"

Craig Smith, M.S., August 1997
"CUB: A Debugger for C*"

Dana Cook, M.S., May 1997
"Implementing Data-Parallel Programs for Shared-Memory Multiprocessors"

Steve Chappelow, M.S., January 1996
"Improving Stencil Communications in C* Programs"

Sanjay Batra, M.S., August 1995
"Data-Parallel Files"

James R. Mason, M.S., May 1994
"Optimizing Irregular Communication in C*"

Kathleen P. Herold, M.S., August 1992
"A Retargetable C* Run-time Library for Mesh-Connected MIMD Multicomputers"

Anthony J. Lapadula, M.S., December 1991
"An Optimizing Dataparallel C Cross-Compiler for Hypercube Multicomputers"

Robert R. Jones, M.S., December 1991
"Compiling the New C*"

John L. Donovan, M.S., December 1990
"Compiler Components Generated from High-Level Specifications"

Margaret M. Cawley, M.S., December 1990
"Improvement of a Table-Driven Tree-Rewriting System"

Lutz H. Hamel, M.S., May 1990
"An Optimizing C* Compiler for the NCUBE Multicomputer"

Jose M. Garcia, M.S., May 1990
"An Object Transformation Language"

Gina L. Ross, M.S., December 1989
"An Attribute Grammar Evaluator Via Equational Logic"

Jeffrey W. Tuller, M.S., December 1989
"Designing a User Interface to UNH-CODEGEN"

Invited Talks

Institut de Recherche en Informatique et Systemes Aleatoir, France, June 2004

Vrije Universiteit, Netherlands, October 2003

Institut de Recherche en Informatique et Systemes Aleatoir, France, June 2002

Laboratoire Informatique et Distribution of the Institut d'Informatique et Mathematiques Appliquees de Grenoble, France, June 2001

Vrije Universiteit, Netherlands, June 2001

International Research Center for Computer Science, Germany, August 2000

University of Trier, Germany, August 2000

École Normale Supérieure de Lyon, France, March 2000

First Workshop on Parallel Computing for Irregular Applications, Orlando, Florida, January 1999

Laboratoire d'Informatique Fondamentale de Lille, France, June 1997

École Normale Supérieure de Lyon, France, January 1997

University of Southampton, United Kingdom, May 1996

École Normale Supérieure de Lyon, France, April 1996

Spring School on Data Parallelism, Les Ménuires, France, March 1996

Workshop on Object-Oriented Approaches to Parallel Programming, Southampton, United Kingdom, March 1996

University of Connecticut, March 1996

Supercomputing '95, Tutorial on Data-Parallel C Extensions, December 1995

Supercomputing '93, Panel Session on Parallel C Standardization, November 1993

Dartmouth College, School on Parallel Programming, June 1993

GMD-Berlin, Germany, April 1993

GMD-St. Augustin, Germany, April 1993

Supercomputing '92, Workshop on Data-Parallel Languages, November 1992

Dartmouth College, February 1992

Boston College, December 1991

Argonne National Laboratory, October 1991

International Research Center for Computer Science, Germany, May 1991

Williams College, May 1991

University of Southern Maine, March 1991

Michigan State University, May 1990

NASA Institute for Computer Applications in Science and Engineering, May 1990

Oregon State University, December 1989

Oregon Center for Advanced Technology Education, December 1989

Standards Work

Key contributor to the Data Parallel C Extensions (DPCE) technical report approved by the ANSI C committee in December 1994. Primary author of the specification of elemental and nodal functions.

Teaching Experience

Introduction to Scientific Programming

Data Processing and File Management

Systems Programming

Programming Languages

Assembly Language Programming and Machine Organization

Compiler Construction

Advanced Compiler Construction

Operating Systems

Formal Language Theory

Programming Languages for Parallel Computers

Introduction to Parallel Programming

Introduction to Distributed and Parallel Programming

EXHIBIT D

Map-a-Thon

Granite Staters Drawing Fair Voting Maps

Part II

NH House Maps

Released 10/29/2021

Proposed 2020 Voting District Maps for NH House

This NH House maps report is Part II of the Map-a-Thon Project's proposed 2020 voting district maps. This project is supported by Open Democracy Action, the Kent Street Coalition, Granite State Progress and the League of Women Voters New Hampshire. To date, over 250 people have participated in the process, ranging from research and data collection to mapping and analysis.

Our Mapping Process is Fair & Transparent The Map-a-Thon's project is a transparent process, including the software, criteria, data sources, maps, and analysis tools. Interested citizens and legislators can replicate our maps to verify our conclusions. We welcome your efforts to try to make even better maps! Please follow the links in the report to see the maps in our software.

Map-a-Thon maps also use "communities of interest" data when possible to determine what towns should – and should not – be in a district together. These, and other techniques, should be a model for the tools a future independent redistricting commission would use to determine voting districts, replacing the current partisan model. It should be noted that use of communities of interest is limited for House maps because of the hierarchy of constitutional and court rules.

We are disappointed that these constraints make NH representation often less local, personal, and reflective of individual communities. Our 2020 maps do help more Granite Staters get the representation they deserve, but we have a long way to go before our voting districts are truly representational.

Send your comments & corrections to FairVoting@OpenDemocracyNH.org.

Due to many links, this document best viewed as a PDF: OpenDemocracyNH.com/redistricting/mapathonreport2a.pdf

Why NH House Redistricting is Difficult – and Disappointing

Mapping NH House of Representatives districts is constrained by these factors:

- The US and NH Constitutions
- US & NH Supreme Court decisions
- NH statutes
- The high number of state representatives- 400- one of the largest democratic bodies in the world.
- The size and location of our towns
- Traditions which influence deviation from the ideal population, and crossing county boundaries.

These factors often force us to put smaller towns with towns large enough to have their own dedicated voting districts, and sometimes results in larger, multi-town districts.

We hope to make policy recommendations for a better process in 2030.

NH House Map Criteria

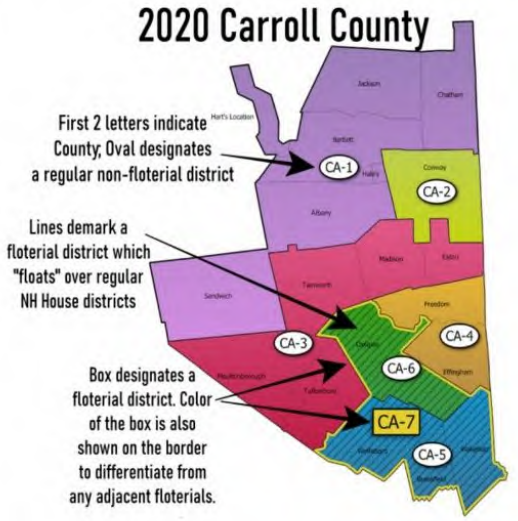
Constraints from the US Constitution, NH Constitution, NH statutes, and court decisions give map makers few options. While it's true that the math drives most of the decisions, we in the Map-a-Thon have worked to find more options within the criteria.

However, where we used Communities of Interest widely in our NH Senate, Executive Council and Congressional districts, we are unable to preserve communities of interest while achieving 1 – 6 on the list. The good news is that we dropped the number of 62 eligible towns which didn't get their own, dedicated NH House districts to 45. But the constraints, in particular the calculation of floterial districts and limits of the 5% deviation above or below the ideal population of 3,444, make dropping that number further much more difficult. The Map-a-Thon team will be studying ways to make improvements and making a recommendation to the legislature for coming redistricting cycles.

	NH House Criteria
1	Population(<9.7%)
2	Preservation of towns/wards
3	Contiguity
4	Preservation of Counties
5	Each town in one non-floterial district
6	Dedicated districts for eligible towns
7	Preservation of COI's
	Possible Criteria
	Preservation of COI's
	Compactness
	Preservation of cores of prior districts
	Avoiding pairing incumbents
	Competitiveness
Key	U.S. Constitution Rule
Key	N.H. Constitution Rule
Key	By State Statute

Important Guidance for Reading Our Maps

There are two types of NH House districts, regular non-floterial districts, and floterial districts which "float" above the regular districts. (Read more at "About NH's Floterial Districts.")



2020 Summary of State House Districts

Map-a-Thon

for Map-a-Thon Project Maps

This summary by county shows the number of state representatives allocated to each county. The "#Violations" refers to a town or city ward which has a population of greater than 3,444, and which is eligible for its own dedicated NH House district as noted in Part II Article 11 in of the NH Constitution, does not receive its exclusive district. In 2011, the number of towns and wards which did not receive a dedicated district was 62 out of 152 eligible. The Map-a-Thon Project has dropped that number from 62 to 45 in its 2020 NH House maps.

County	2020 Pop.	2020 Reps	# Violations
Belknap County	63,705	18	5
Carroll County	50,107	15	3
Cheshire County	76,458	22	4
Coos County	31,268	9	0
Grafton County	91,118	26	3
Hillsborough	422,937	123	6
Merrimack County	153,808	45	6
Rockingham	314,176	91	12
Strafford County	130,889	38	3
Sullivan County	43,063	13	3
Total	1,377,529	400	45

Analysis of Map-a-Thon's House District Competitiveness

The larger Map-a-Thon group decided in May & June of 2021, long before the maps were drawn, that it would not draw maps on the basis of partisan data. We have, however, included an analysis of the Map-a-Thon project's NH House Districts in the interest of transparency, completed after the mapping was complete. Now that it is built, the competitive district analysis can also quickly be applied to non Map-a-Thon maps, such as those being proposed by the NH House Special Committee on Redistricting. To measure competitiveness, we averaged the 2020 NH Executive Council and NH Senate election data to assess our NH House districts.

County NH House Map	Dem	Rep	Competitive	Total	Competitive	Dem	Rep
Belknap non-floterial	0	7	0	7	0.00%	39.60%	60.40%
Belknap floterial	0	1	0	1	0.00%	39.80%	60.20%
Carroll non-floterial	0	4	2	6	33.30%	41.10%	58.90%
Carroll floterial	0	1	0	1	0.00%	35.10%	64.90%
Cheshire non-floterial	7	1	4	12	33.30%	56.20%	43.80%
Cheshire floterial	2	1	2	5	40.00%	56.20%	43.80%
Coos non-floterial	0	4	2	6	33.30%	41.50%	58.50%
Coos floterial	0	0	1	1	100.00%	48.30%	51.70%
Grafton non-floterial	7	3	5	15	33.30%	57.70%	42.30%
Grafton floterial	2	0	2	4	50.00%	61.70%	38.30%
Hillsborough non-floterial	13	6	18	37	48.60%	49.70%	50.30%
Hillsborough floterial	0	3	5	8	62.50%	48.70%	51.30%
Merrimack non-floterial	12	7	3	22	13.60%	50.40%	49.60%
Merrimack floterial	2	2	2	6	33.30%	49.90%	50.10%
Rockingham non-floterial	9	17	4	30	13.30%	46.50%	53.50%
Rockingham floterial	4	7	2	13	15.40%	46.70%	53.30%
Strafford non-floterial	9	4	6	19	31.60%	54.60%	45.40%
Strafford floterial	1	1	4	6	66.70%	52.70%	47.30%
Sullivan non-floterial	1	1	1	3	33.30%	47.20%	52.80%
Total	**69**	**70**	**63**	**202**		**49.30%**	**50.70%**

About New Hampshire's Floterial Districts

New Hampshire's unusual floterial districts – districts which "float" above other districts, are used to apportion remaining population, after the population in multiples of the ideal population (3,444 in 2020 = 1 state rep seat) are assigned. Its use was intended to help for proper representation, but some legal observers suggest that a floterial may be federally unconstitutional. Some floterials may have tens of thousands represented by one or two reps, possibly violating the one person-one vote rule. Bad actors could also employ floterials for gerrymandering. Here's a definition from a 2019 Boston University Law Review article:

Although most district maps are drawn using single-member, multi-member, or at-large districts, a map may also include floterial districts, an infrequently used redistricting device. A floterial is a legislative district "which includes within its boundaries several separate districts or political subdivisions which independently would not be entitled to additional representation but whose conglomerate population entitles the entire area to another seat in the particular legislative body being apportioned. Unlike the more commonly used district types, the Supreme Court has yet to directly rule on the constitutionality of floterials. New Hampshire is the only state that currently uses floterial districts, although several other states have used this redistricting device in the past. "GOBBLEDYGOOK" OR UNCONSTITUTIONAL REDISTRICTING?: FLOTERIAL DISTRICTS AND PARTISAN GERRYMANDERING" by Mikayla Foster, 2019. https://www.bu.edu/bulawreview/files/2019/01/FOSTER-2.pdf

We are now aware that Wyoming, which has a similar rural, low density population, also uses floterials.

Floterials are in our Constitution In 2006, a NH Constitutional Amendment amendment, which NH voters adopted, amended Part 2, Article 11 to say:

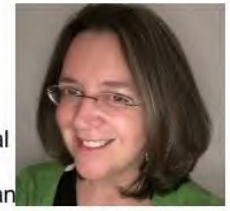
[Art.] 11. [Small Towns; Representation by Districts.] When the population of any town or ward, according to the last federal census, is within a reasonable deviation from the ideal population for one or more representative seats, the town or ward shall have its own district of one or more representative seats. The apportionment shall not deny any other town or ward membership in one non-floterial representative district. When any town, ward, or unincorporated place has fewer than the number of inhabitants necessary to entitle it to one representative, the legislature shall form those towns, wards, or unincorporated places into representative districts which contain a sufficient number of inhabitants to entitle each district so formed to one or more representatives for the entire district. In forming the districts, the boundaries of towns, wards, and unincorporated places shall be preserved and contiguous. **The excess number of inhabitants of district may be added to the excess number of inhabitants of other districts to form at-large or floterial districts conforming to acceptable deviations.** The legislature shall form the representative districts at the regular session following every decennial federal census. https://www.nh.gov/glance/house.htm

The Calculation of Floterials Makes Mapping Non-Floterials Districts Complicated A 2002 NH Supreme Court decision, citing the U.S, Constitution's "one person-one vote" provision and threw out the previous "aggregate" method of calculating how the floterial districts are calculated, and recommended a "component" method equation to properly apportion representation. The Map-a-Thon team developed an "Alternative Component Method," but flaws in the math prevented us from moving forward with this approach.

The Map-a-Thon Mapping & Technical Team

David Andrews is a UNH-trained electrical engineer living in Chichester with a passion for data analysis. He is currently a fellow with the Redistricting Data Hub, a national nonprofit assisting governments & organizations with redistricting data. He is lead mapper for the Map-a-Thon project and developed and proposed the Alternative Component Method for calculating floterial districts.

Phil Hatcher retired from UNH after 33 years as a computer science professor, including 10 years as department head. He is a 35-year resident of Dover. He wrote software to aid in the drawing of NH House districts.



Kim Frost is Managing Director of Makana Consulting, a firm that specializes in value-for-money analytics for global health and development organizations. She has an undergraduate degree in philosophy and government from Harvard University and a doctoral degree in epidemiology from University at Buffalo. Kim led the team that collected and analyzed data on communities of interest.

John Cross is an engineer with over 23 years of experience ranging from fundamental physics research to development of complex spacecraft and robot systems for national security missions. He has several advanced and undergraduate degrees in engineering and physics from Johns Hopkins University and Santa Clara University. John led development of the Map-a-Thon map analysis tool.

Bill Brown is a graduate of the US Naval Academy and has his MBA from the Tuck School of Business. Initially serving as a Navy nuclear engineer and nuclear submarine officer he has also worked for companies such as General Electric working performing statistical analysis of large data sets to optimize operations. He holds a Lean Six Sigma Black Belt for business process improvement.

Ian Burke is a research, evaluation, and survey design consultant living in Keene. He grew up in southwestern New Hampshire, and moved back to the region in 2019

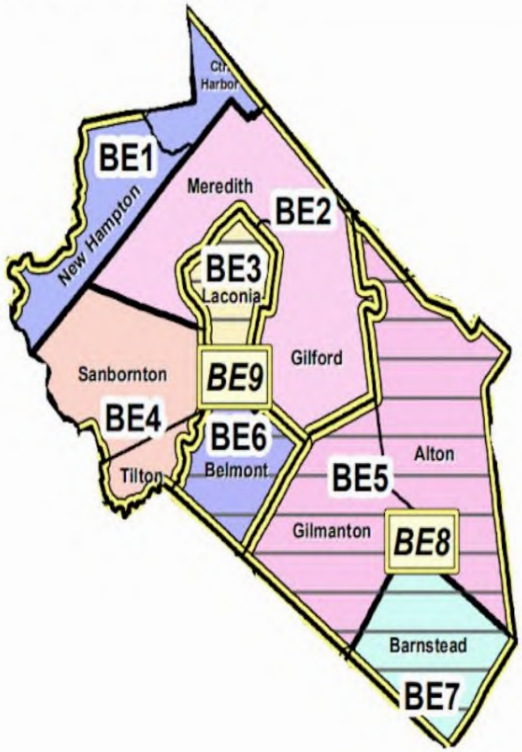
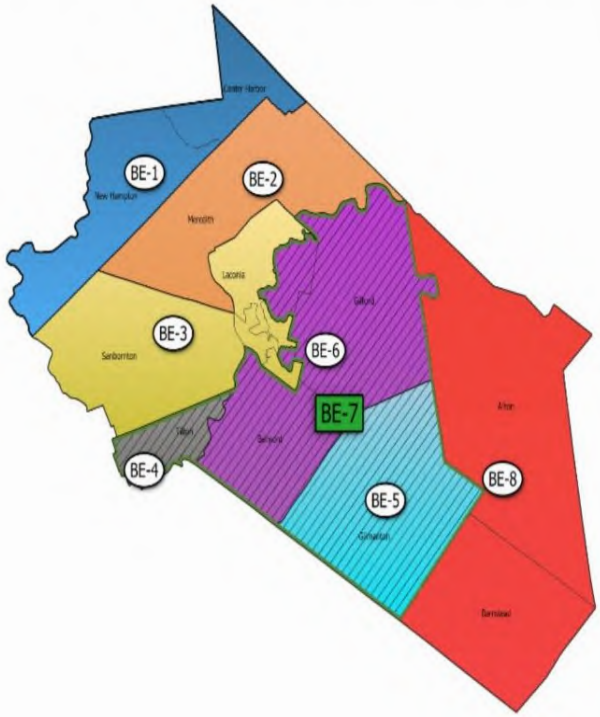
Jeffrey Smith spent 30 years as a financial executive with various global information services and software companies in the U.S. and U.K. A New Hampshire resident since 2009, he is a volunteer consultant for area nonprofit organizations, and an adjunct instructor and course designer for Southern New Hampshire University. Jeff has an A.B. in economics from Dartmouth College and a finance MBA from Cornell University. He provided assistance building the Map-a-Thon analysis tool.

Brian Beihl is deputy director of Open Democracy & Open Democracy Action. He is a 36-year resident of New Hampshire, and recently moved to Alton Bay after decades in the Monadnock Region. He has a degree in Journalism from Michigan State University, and has been responsible for organizing and communications for the Map-a-Thon coalition.

Over 200 Granite Staters participated in the full Map-a-Thon project, helping collect data, making phone calls and assisting in the preparation of surveys, ranking criteria and finally deciding which map options should go forward. We are grateful for everyone's contribution to a fair, nonpartisan and transparent project.

Belknap County

Map-a-Thon

2010 NH House (Current Map)	2020 Map-a-Thon Proposed
	
	Links to M-A-T 2020 maps in DRA 2020 software: Non-Foterial https://davesredistricting.org/join/4d360609-f12a-4a1f-b262-8881687cdc08 Floterial: https://davesredistricting.org/join/bda0702e-c13d-4b6e-b5a9-55886aea57f5

Belknap County Details & Analysis

Belknap County Proposal							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
BE-1	3,417	1			Center Harbor, New Hampton	-0.78%	
BE-2	6,662	2			Meredith	-3.28%	
BE-3	14,273	4			Sanbornton, Laconia Ward 1*, Laconia Ward 2*, Laconia Ward 3*, Laconia Ward 4*	3.61%	Laconia
BE-4	3,962	1	BE-7	1	Tilton	1.02%	
BE-5	3,945	1			Gilmanton	0.64%	
BE-6	20,637	5			Laconia Ward 5*, Laconia Ward 6*, Belmont, Gilford	4.71%	Belmont, Gilford
BE-8	10,809	3			Alton, Barnstead	4.62%	Alton, Barnstead
Total	63,705	18					5
*Populations used are assumed to be ideal populations for wards							

The small size of Belknap County, the dispersion of towns eligible for their own House districts, and the number of reps to be allocated make the county difficult to map and honor the NH Constitution. The ideal number of reps is 18.498, .002 from having to round to 19, the worst possible scenario. Belknap County also gained population, resulting in a smaller than average window of deviation. Because 8 of 11 towns have a population of greater than 3,444, smaller towns which need to be in districts with other towns often need to be attached to larger towns robbing them of their dedicated House district. Without Constitutional and policy changes, Belknap willl continue to be deprived of proper representation.

- 3 towns received their own districts - same as in 2010
- Smaller, compact non-floterial districts - not more than 2.5 towns (one ward in Laconia)
- Only one floterial for the county
- Meredith, Gilmanton, Tilton would have their own House districts, but disappointingly, five others would not
- Laconia was not kept intact
- The county's deviations were within +/- 5%, from -3.28 to 4.71%. Total 7.99%

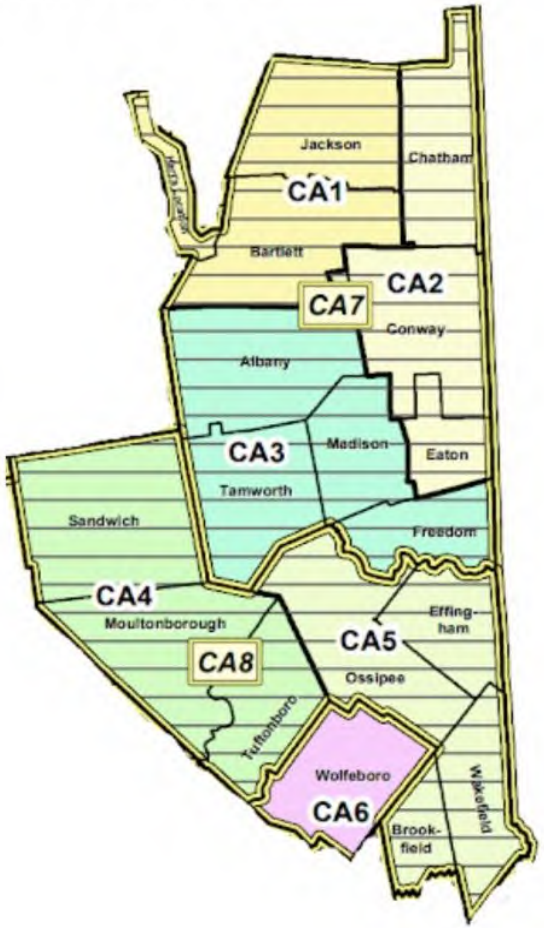
NH House Non-Floterial Map Metrics	# True	# False	Total	% True
Towns/wards preserved	16	0	16	100.0%
Towns/wards in non-floterial district	16	0	16	100.0%
Eligible towns/wards in dedicated district	3	4	7	42.9%
HS SAUs preserved	3	4	7	42.9%
Eligible towns/wards w/ SVI>=5 in dedicated district	0	0	0	#N/A
Competitive districts (averaged 2020 elections)	0	7	7	0.0%
Map Analysis v24 - Belknap Opt1B NF.xlsm				

NH House Floterial Map Metrics	# True	# False	Total	% True
Towns/wards preserved	6	0	6	100.0%
HS SAUs preserved	4	0	4	100.0%
Cities/towns w/ SVI>=5 preserved	0	0	0	#N/A
Competitive districts (averaged 2020 elections)	0	1	1	0.0%
Map Analysis v24 - Belknap Opt1B F.xlsm				

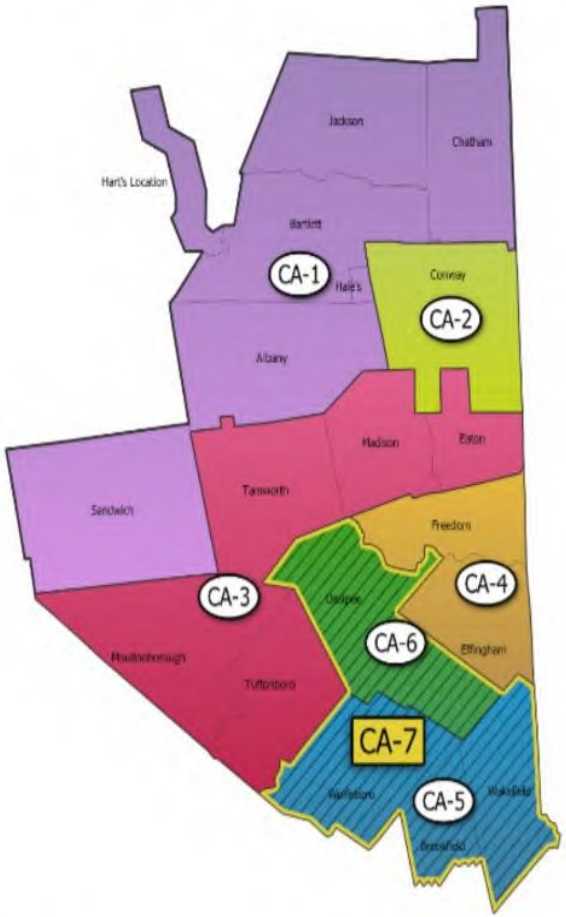
Carroll County

Map-a-Thon

2010 NH House (Current Map)



2020 Map-a-Thon Proposed



Links to M-A-T 2020 maps in DRA 2020 software:
Non-Foterial: https://davesredistricting.org/join/15f6618d-f8c7-41d9-85a6-56cf08d482d2

Floterial: https://davesredistricting.org/join/d1dc49d7-7f4e-4be5-adfa-d765c730ee64

Carroll County Details & Analysis

Carroll County Proposal							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
CA-1	6,994	2			Chatham, Jackson, Bartlett, Hart's Location, Hales Location, Albany, Sandwich	1.54%	
CA-2	9,822	3			Conway	-4.93%	
CA-3	13,167	4			Tuftonboro, Moultonborough, Tamworth, Madison, Eaton	-4.42%	Moultonborough
CA-4	3,380	1			Freedom, Effingham	-1.85%	
CA-5	4,372	1	CA-7	1	Ossipee	0.67%	
CA-6	12,372	3			Wolfeboro, Brookfield, Wakefield	-3.91%	Wolfeboro, Wakefield
Total	50,107	15					3

Some improvements were made in Carroll County vs. 2010, but it is, and will be in the future, challenging. Carroll qualifies for 15 reps (county population divided by 3,444 = 14.55, rounded up to 15). However, the 14.55 adds complexity to the mapping. The southern part of Carroll County has more towns which qualify for their own House districts. The 2010 map districts both Conway and Ossipee in with smaller towns. The 2020 Map-a-Thon gives those towns their own, thus reduces violations of the NH Constitution vs. the 2010 the map, but Wolfeboro loses its own district.

The geography of two towns "force" errors on the map. Brookfield and Tuftonborough are smaller towns surrounded by larger ones. These communities need to be in a district, thus had to be paired with a larger town which should have had its own House district. Freedom and Effingham are now is a smaller district, but Sandwich and Tamworth couldn't be done in our maps, something for which residents have asked.

Two unfortunate results: Sandwich and Albany are technically contiguous, but does not meet our standards for compactness. We also created two large districts out of necessity, but advocate for smaller districts whenever possible.

NH House Non-Floterial Map Metrics	# True	# False	Total	% True
Towns/wards preserved	19	0	19	100.0%
Towns/wards in non-floterial district	19	0	19	100.0%
Eligible towns/wards in dedicated district	2	3	5	40.0%
HS SAUs preserved	4	2	6	66.7%
Eligible towns/wards w/ SVI>=5 in dedicated district	0	0	0	#N/A
Competitive districts (averaged 2020 elections)	2	4	6	33.3%
NHHouse-Carroll-2020Opt4NonF-V24-20211026.xlsm				

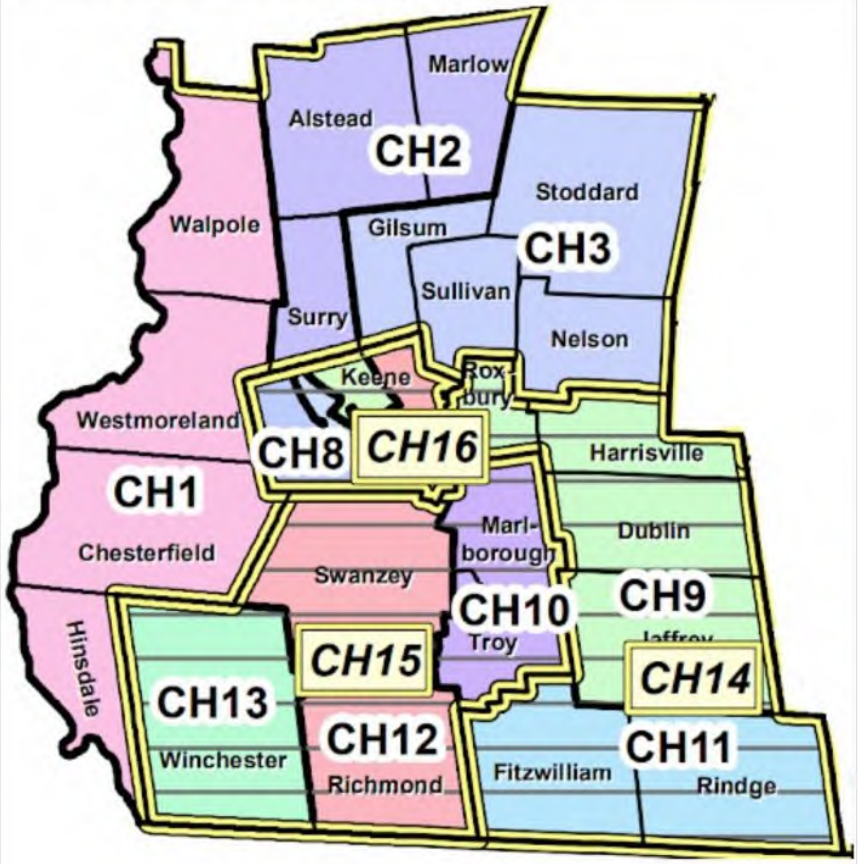
NH House Floterial Map Metrics	# True	# False	Total	% True
Towns/wards preserved	4	0	4	100.0%
HS SAUs preserved	2	0	2	100.0%
Cities/towns w/ SVI>=5 preserved	0	0	0	#N/A
Competitive districts (averaged 2020 elections)	0	1	1	0.0%
NHHouse-Carroll-2020Opt4Flot-V24-20211026.xlsm				

Deviations for Carroll County ranges from -4.93 to 1.54 % for an overall deviation of +/- 6.47%

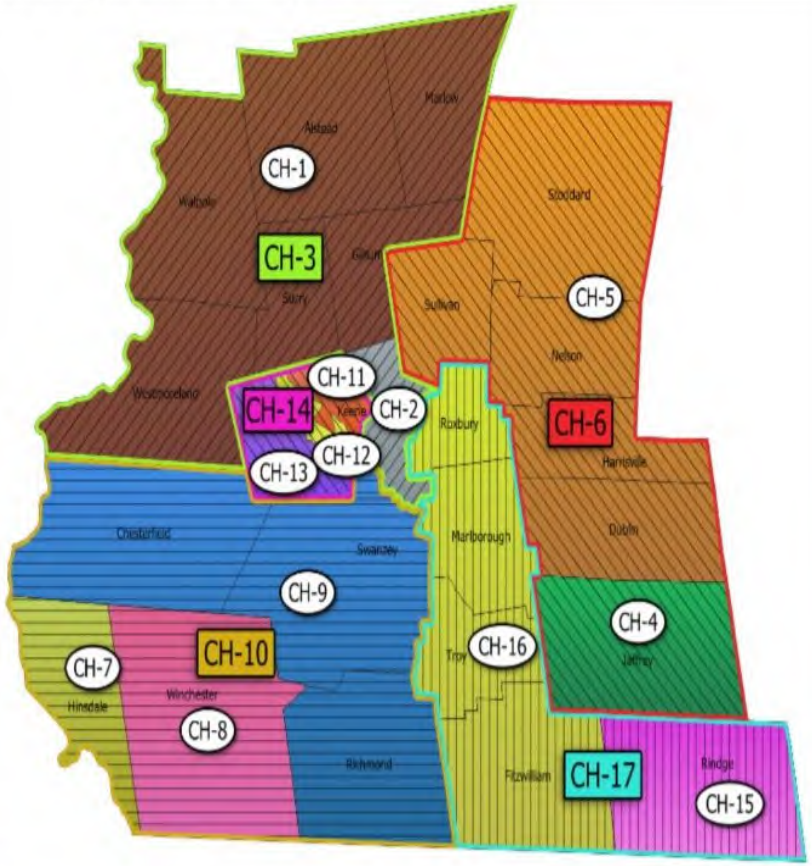
Cheshire County

Map-a-Thon

2010 NH House (Current Map)



2020 Map-a-Thon Proposed



Links to M-A-T 2020 maps in DRA 2020 software:
Non-Foterial: https://davesredistricting.org/join/e533280a-0033-443a-af7c-1baa97df1691

Floterial: https://davesredistricting.org/join/695414e9-bdec-4382-b4a5-06097c114678

Cheshire County Details & Analysis

Cheshire County Proposal							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
CH-1	9,524	2	CH-3	1	Walpole, Alstead, Marlow, Westmoreland, Surry, Gilsum	3.43%	Walpole
CH-2	4,609	1			Keene Ward 2*	0.92%	
CH-4	5,320	1	CH-6	1	Jaffrey	2.52%	
CH-5	5,177	1			Sullivan, Stoddard, Nelson, Harrisville, Dublin	0.68%	
CH-7	3,948	1	CH-10	1	Hinsdale	-1.14%	
CH-8	4,150	1			Winchester	3.19%	
CH-9	16,629	4			Chesterfield, Swanzey, Richmond, Keene Ward 1*	3.34%	Chesterfield, Swanzey, Keene
CH-11	4,610	1	CH-14	1	Keene Ward 3*	0.40%	
CH-12	4,610	1			Keene Ward 4*	0.40%	
CH-13	4,609	1			Keene Ward 5*	0.38%	
CH-15	6,476	1	CH-17	2	Rindge	-4.83%	
CH-16	6,797	1			Roxbury,Marlborough,Troy,Fitzwilliam	-2.50%	
Total	32,728	22					4
*Populations used are assumed to be ideal populations for wards							

Cheshire County lost a state representative seat due to a loss of population in the last 10 years, one of the reasons the map needs to be adjusted.

One of the advantages of the Map-a-Thon map includes facilitating four eligible towns to receive their own House districts, vs. two in 2010. This includes Hinsdale, Jaffrey, Ridge & Winchester. But these improvements come with baggage. Some districts are larger than 2010, and all towns are in a floterial. Reducing floterials would have resulted in even larger districts.

Three of Keene's wards were added to a floterial (3,4,5), and Ward 1 connected to other towns. Ward 2 is in a floterial with other towns.

NH House Non-Floterial Map Metrics	# True	# False	Total	% True
Towns/wards preserved	27	0	27	100.0%
Towns/wards in non-floterial district	27	0	27	100.0%
Eligible towns/wards in dedicated district	8	4	12	66.7%
HS SAUs preserved	6	3	9	66.7%
Eligible towns/wards w/ SVI>=5 in dedicated district	1	0	1	100.0%
Competitive districts (averaged 2020 elections)	4	8	12	33.3%

NHHouse-Cheshire-2020Opt1BNonF-V24-20211026.xlsm

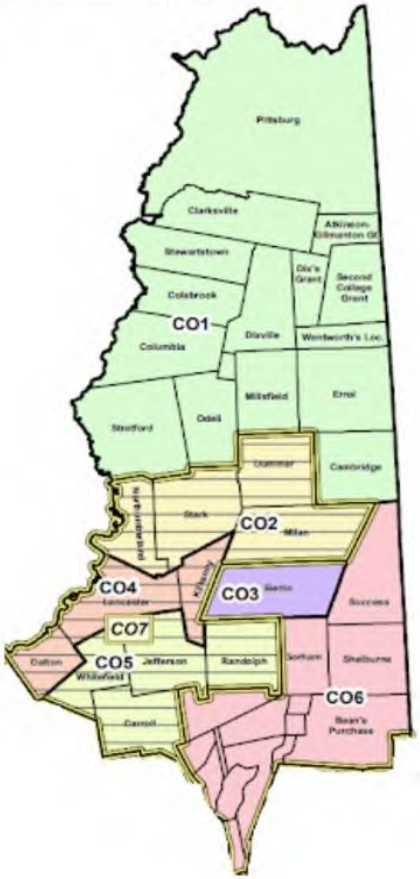
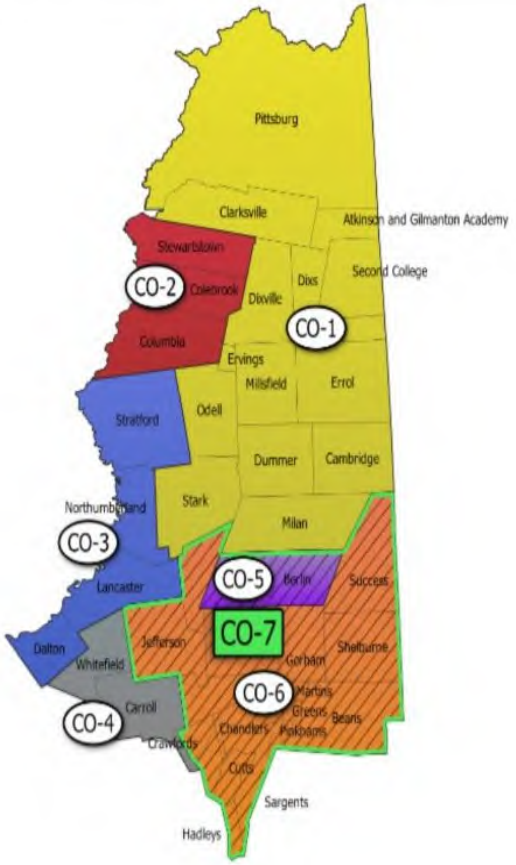
NH House Floterial Map Metrics	# True	# False	Total	% True
Towns/wards preserved	27	0	27	100.0%
HS SAUs preserved	6	3	9	66.7%
Cities/towns w/ SVI>=5 preserved	1	0	1	100.0%
Competitive districts (averaged 2020 elections)	2	3	5	40.0%

NHHouse-Cheshire-2020Opt1BFlot-V24-20211026.xlsm

2010's Cheshire District 1 is broken up into now in smaller districts, with a smaller in population per district, with eligible Hinsdale receiving its own dedicated House district.

Coos County

Map-a-Thon

2010 NH House (Current Map)	2020 Map-a-Thon Proposed
	
	Links to M-A-T 2020 maps in DRA 2020 software: Non-Foterial: https://davesredistricting.org/join/609e2209-13c6-446e-8fff-09f773bc047c Floterial: https://davesredistricting.org/join/64b2fd8b-a3c6-47fd-aa3b-b4c5a01136d0

Coos County Details & Analysis

Coos County Proposal							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
CO-1	3,609	1			Pittsburg, Clarksville, Dixville, Odell, Stark, Milan, Dummer, Cambridge, Millsfield, Errol, Wentworth Location, College Grant, Dixs Grant, Atkinson and Gilmanton Grant, Ervings Location,	4.80%	
CO-2	3,556	1			Stewartstown, Colebrook, Columbia	3.26%	
CO-3	6,939	2			Stratford, Northumberland, Lancaster, Dalton	0.75%	
CO-4	3,310	1			Whitefield, Carroll	-3.89%	
CO-5	9,425	2	CO-7	1	Berlin	2.11%	
CO-6	4,429	1			Jefferson, Randolph, Gorham, Shelburne, Success, Kilkenny, Burbanks Grant, Crawfords Purchase, Beans Grant, Cutts Grant, Hadleys Purchase, Sargents Purchase, Thompson and Merserves Purchase, Martins Location, Greens Grant, Pinkhams Grant, Beans Purchase	-2.55%	
Total	31,268	8					0

Map-a-Thon's 2020 proposal for Coos has zero violations of the NH Constitution for towns eligible for their own House district. There had been two towns eligible, but Lancaster lost population since 2010, and no longer qualifies.

Most of the districts now follow the roads, making it easier for legislators to travel their districts, and we have the same number of districts, but Coos did lose a seat because of population loss.

The sparsely-populated North Country unfortunately means large, sprawling districts, no matter who is doing the mapping.

The deviation ranges from -3.89 to 4.80, a total of 8.69%

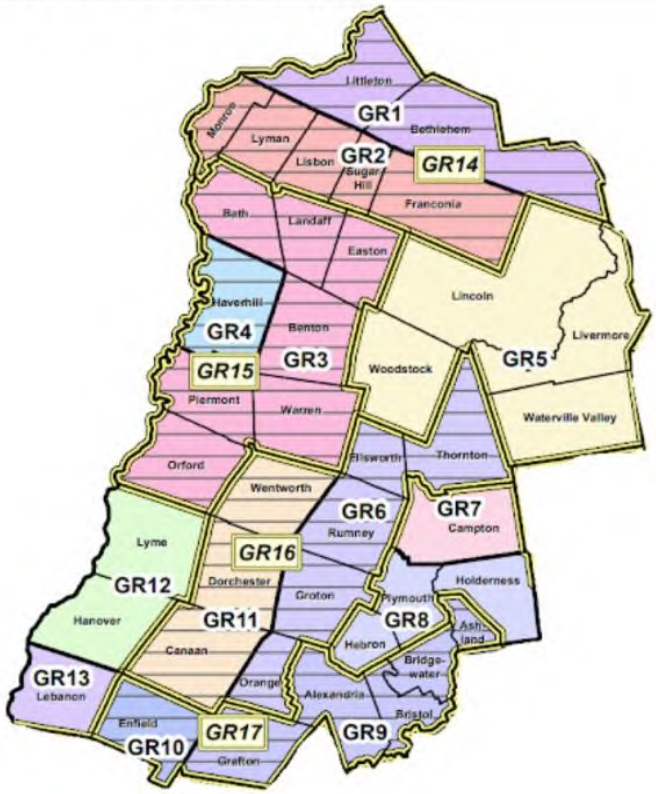
NH House Non-Floterial Map Metrics	# True	# False	Total	% True
Towns/wards preserved	43	0	43	100.0%
Towns/wards in non-floterial district	43	0	43	100.0%
Eligible towns/wards in dedicated district	1	0	1	100.0%
HS SAUs preserved	0	5	5	0.0%
Eligible towns/wards w/ SVI>=5 in dedicated district	1	0	1	100.0%
Competitive districts (averaged 2020 elections)	2	4	6	33.3%
Map Analysis v24 - Coos Opt1 NF.xlsm				

NH House Floterial Map Metrics	# True	# False	Total	% True
Towns/wards preserved	19	0	19	100.0%
HS SAUs preserved	3	0	3	100.0%
Cities/towns w/ SVI>=5 preserved	1	0	1	100.0%
Competitive districts (averaged 2020 elections)	1	0	1	100.0%
Map Analysis v24 - Coos Opt1 F.xlsm				

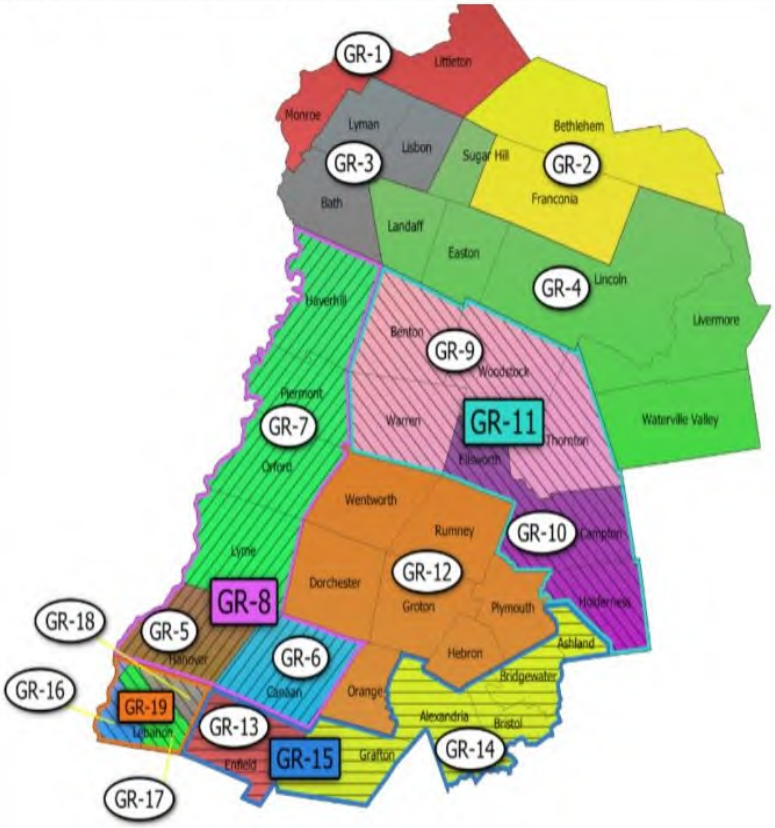
Grafton County

Map-a-Thon

2010 NH House (Current Map)



2020 Map-a-Thon Proposed



Links to M-A-T 2020 maps in DRA 2020 software:
Non-Foterial: https://davesredistricting.org/join/fc01e1ed-4bcd-4664-8eff-02c39045a57c
Floterial: https://davesredistricting.org/join/cb2db4a0-5dd1-45c5-93c5-25849acbdc4b

Grafton County Details & Analysis

Grafton County Proposal							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
GR-1	6,869	2			Littleton, Monroe	-0.27%	Littleton
GR-2	3,567	1			Bethlehem, Franconia	3.58%	
GR-3	3,283	1			Lyman, Lisbon, Bath	-4.67%	
GR-4	3,526	1			Sugar Hill, Landaff, Easton, Lincoln, Livermore, Waterville Valley	2.39%	
GR-5	11,870	3	GR-8	1	Hanover	-1.37%	
GR-6	3,794	1			Canaan	-4.87%	
GR-7	8,336	2			Haverhill, Piermont, Orford, Lyme	3.12%	Haverhill
GR-9	5,341	1	GR-11	1	Benton, Warren, Woodstock, Thornton	3.71%	
GR-10	5,440	1			Ellsworth, Campton, Holderness	4.99%	
GR-12	10,842	3			Wentworth, Rumney, Dorchester, Groton, Plymouth,Hebron, Orange	4.94%	Plymouth
GR-13	4,465	1	GR-15	1	Enfield	-1.75%	
GR-14	9,503	2			Grafton, Alexandria, Bristol, Bridgewater, Ashland	2.95%	
GR-16	4,761	1	GR-19	1	Lebanon Ward 1*	3.68%	
GR-17	4,761	1			Lebanon Ward 2*	3.68%	
GR-18	4,760	1			Lebanon Ward 3*	3.67%	
Total	91,118	26					3
*Populations used are assumed to be ideal populations for wards							

Our maps do not make significant headway on getting towns their own House districts, with the same number in both the 2010 as with our 2020 maps. Our maps have three violations, with the eligible towns of Littleton, Haverhill and Plymouth included in multi-town districts.

The Map-a-Thon maps have dedicated House districts for Canaan, Enfield .Lebanon & Hanover, and for a total of six out of nine eligible towns.

As with some of the other counties, the ideal number of reps was calculated at 26.458, making for somewhat high deviations, from – 4.67% to 4.99%, a total of 9.66% out of a possible range of 10%.

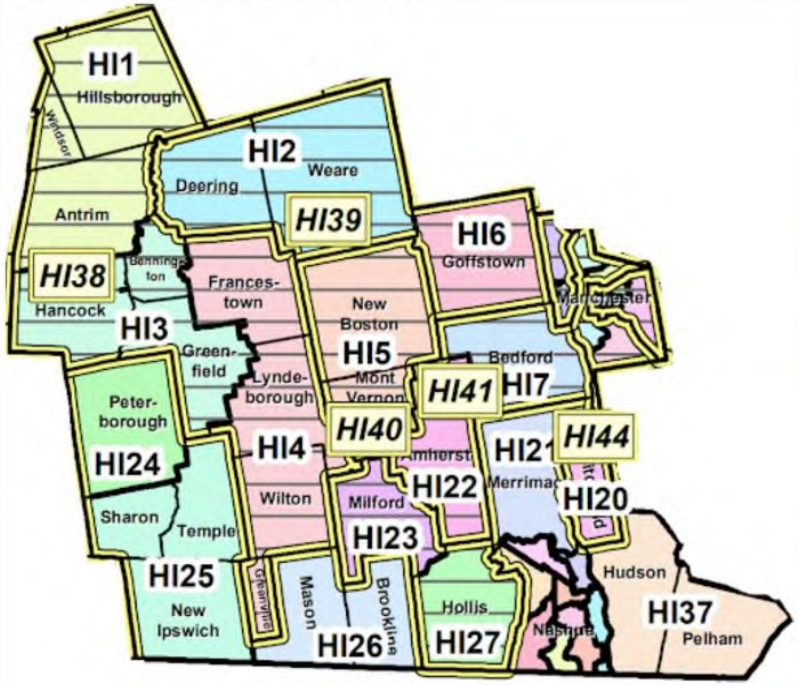
NH House Non-Floterial Map Metrics	# True	# False	Total	% True
Towns/wards preserved	42	0	42	100.0%
Towns/wards in non-floterial district	42	0	42	100.0%
Eligible towns/wards in dedicated district	6	3	9	66.7%
HS SAUs preserved	3	8	11	27.3%
Eligible towns/wards w/ SVI>=5 in dedicated district	0	0	0	#N/A
Competitive districts (averaged 2020 elections)	5	10	15	33.3%
NHHouse-Grafton-2020Opt1NonF-V24-20211026.xlsm				

NH House Floterial Map Metrics	# True	# False	Total	% True
Towns/wards preserved	22	0	22	100.0%
HS SAUs preserved	5	3	8	62.5%
Cities/towns w/ SVI>=5 preserved	0	0	0	#N/A
Competitive districts (averaged 2020 elections)	2	2	4	50.0%
NHHouse-Grafton-2020Opt1Flot-V24-20211026.xlsm				

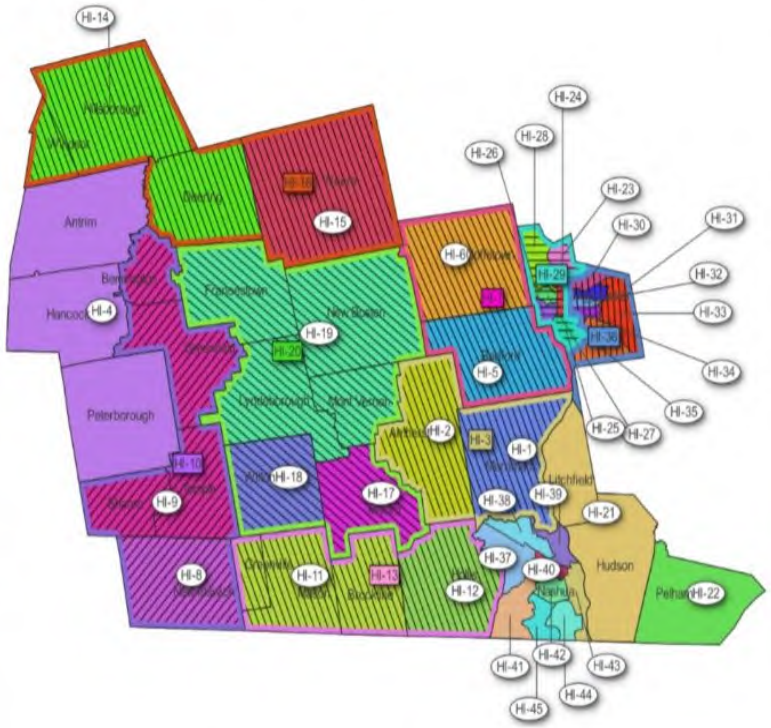
Hillsborough County

Map-a-Thon

2010 NH House (Current Map)



2020 Map-a-Thon Proposed



Links to M-A-T 2020 maps in DRA 2020 software:
Non-Foterial: https://davesredistricting.org/join/31c5ddc0-3a72-4ac1-bac2-57c8a5dc5f0d
Floterial: https://davesredistricting.org/join/63bbb716-7f3d-4a6e-9bf6-b4b5832cc4ff

Hillsborough County Details & Analysis

Hillsborough County Proposal							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
1	26,632	7	HI-3	1	Merrimack	0.51%	
2	11,753	3			Amherst	3.22%	
4	10,800	3			Antrim, Hancock, Peterborough	4.54%	Peterborough
5	23,322	6	HI-6	1	Bedford	3.29%	
6	18,577	5			Goffstown	-0.90%	
8	5,204	1	HI-10	1	New Ipswich	-0.10%	
9	4,949	1			Bennington, Greenfield, Sharon, Temple	-3.39%	
11	9,061	2	HI-13	1	Brookline, Greenville, Mason	4.38%	Brookline
12	8,342	2			Hollis	-2.30%	
14	8,105	2	HI-16	1	Deering, Hillsborough, Windsor	-4.77%	Hillsborough
15	9,092	2			Weare	4.41%	
17	16,131	4	HI-20	1	Milford	4.01%	
18	3,896	1			Wilton	0.87%	
19	12,013	3			Francestown, Lyndeborough, Mont Vernon, New Boston	3.36%	New Boston
21	33,872	10			Hudson, Litchfield	-1.64%	Hudson, Litchfield
22	14,222	4			Pelham	3.24%	
23	9,637	2	HI-29	5	Manchester Ward 1*	-1.23%	
24	9,637	2			Manchester Ward 3*	-1.23%	
25	9,637	2			Manchester Ward 9*	-1.23%	
26	9,637	2			Manchester Ward 10*	-1.23%	
27	9,637	2			Manchester Ward 11*	-1.23%	
28	9,637	2			Manchester Ward 12*	-1.23%	
30	9,637	2	HI-36	5	Manchester Ward 2*	-1.23%	
31	9,637	2			Manchester Ward 4*	-1.23%	
32	9,637	2			Manchester Ward 5*	-1.23%	
33	9,637	2			Manchester Ward 6*	-1.23%	
34	9,637	2			Manchester Ward 7*	-1.23%	
35	9,637	2			Manchester Ward 8*	-1.23%	
37	10,147	3			Nashua Ward 1*	-1.79%	
38	10,147	3			Nashua Ward 2*	-1.79%	
39	10,147	3			Nashua Ward 3*	-1.79%	
40	10,147	3			Nashua Ward 4*	-1.79%	
41	10,147	3			Nashua Ward 5*	-1.79%	
42	10,147	3			Nashua Ward 6*	-1.79%	
43	10,147	3			Nashua Ward 7*	-1.79%	
44	10,147	3			Nashua Ward 8*	-1.79%	
45	10,146	3			Nashua Ward 9*	-1.80%	
Total	422,937	123					6
*Populations used are assumed to be ideal populations for wards							

Our Hillsborough County map made some significant improvements over 2010. There are 37 towns & city wards eligible for their own House districts(s), and the Map-a-Thon maps reduced the violations from eight to six for that Constitutional requirement.

New Hampshire's most populous county receives 122.81 state representatives, rounded up to 123.

Particular challenges for Hillsborough County includes the larger towns in the eastern part of the county sometimes have no choice but to have smaller towns in a district. The western end of the county has many smaller towns less than the 3,444 ideal population which need to be grouped together.

NH House Non-Floterial Map Metrics	# True	# False	Total	% True
Towns/wards preserved	50	0	50	100.0%
Towns/wards in non-floterial district	50	0	50	100.0%
Eligible towns/wards in dedicated district	31	6	37	83.8%
HS SAUs preserved	7	9	16	43.8%
Eligible towns/wards w/ SVI>=5 in dedicated district	21	0	21	100.0%
Competitive districts (averaged 2020 elections)	18	19	37	48.6%
Map Analysis v24 - Hillsborough Opt1 NF.xlsm				

NH House Floterial Map Metrics	# True	# False	Total	% True
Towns/wards preserved	35	0	35	100.0%
HS SAUs preserved	6	6	12	50.0%
Cities/towns w/ SVI>=5 preserved	0	1	1	0.0%
Competitive districts (averaged 2020 elections)	5	3	8	62.5%
Map Analysis v24 - Hillsborough Opt1 F.xlsm				

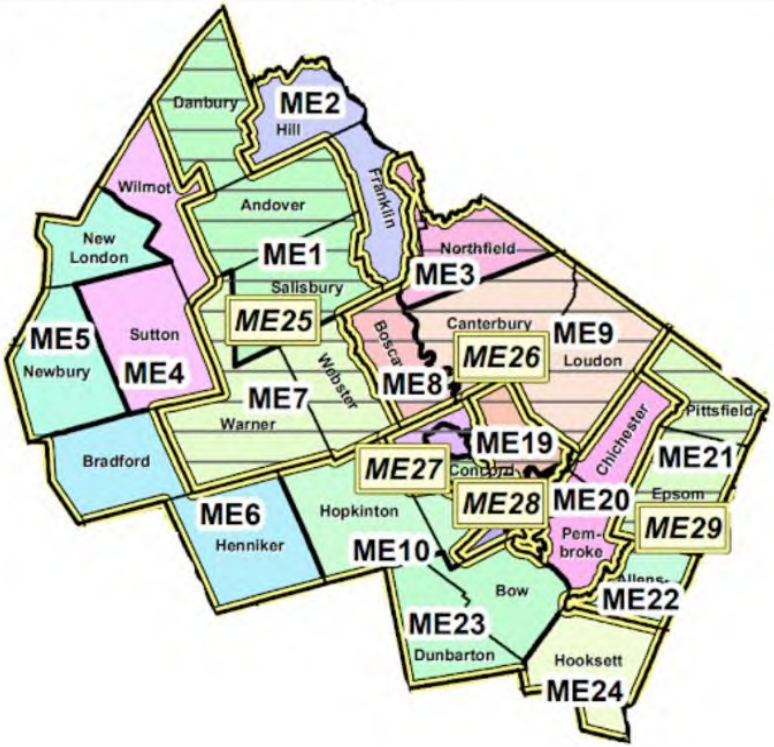
One particular problem on the 2010 map included the incredibly large district of Hudson & Pelham, Hillsborough District 37. Both towns made substantial population gains in the preceding decade, and stand at 25,826 for Hudson and 14,222. Because of its larger number of voters, Hudson candidates dominate the elections, leaving Pelham underrepresented. On the downside, the smaller but still own-district eligible Litchfield was included in a district with Hudson.

Weare, Wilton & New Ipswich, none of which had their own districts in 2010, got them in Map-a-Thon's maps. While Peterborough lost its own House district, it did get included in a district with Hancock & Antrim, all within the same ConVal School District. Antrim had previously been with Windsor and Hillsborough, despite Windsor and Hillsborough being in the Hillsborough-Deering School District. Hillsborough Deering & Most ConVal towns are districted together Although Brookline did not get it's own district, it was put in a district in which it shares communities of interest.

Deviations for Hillsborough County ranged from -4.77 to 4.54%, with a 9.31% total deviation.`

Merrimack County

Map-a-Thon

2010 NH House (Current Map)	2020 Map-a-Thon Proposed
	
	Links to M-A-T 2020 maps in DRA 2020 software: Non-Foterial: https://davesredistricting.org/join/b49443d2-783f-4e82-8e6b-eaf1b3199821 Floterial: https://davesredistricting.org/join/e8237b09-268c-4deb-add8-a7b2fedc5144

Merrimack County Details & Analysis

Merrimack County Proposal							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
ME-1	4,400	1	ME-3	1	New London	-3.79%	
ME-2	9,017	2			Warner, Andover, Wilmot, Hill, Danbury	-2.01%	
ME-4	8,741	2	ME-6	1	Franklin	-3.93%	
ME-5	4,872	1			Northfield	4.18%	
ME-7	3,335	1			Salisbury, Webster	-3.16%	
ME-8	17,911	5			Sutton, Newbury, Bradford, Hopkinton, Henniker	4.02%	Hopkinton, Henniker
ME-9	3,998	1	ME-12	1	Boscawen	-0.76%	
ME-10	4,075	1			Pittsfield	0.86%	
ME-11	15,464	4			Canterbury, Loudon, Chichester, Epsom	-3.58%	Loudon, Epsom
ME-13	7,207	2	ME-16	1	Pembroke	-4.42%	
ME-14	14,871	4			Hooksett	-1.66%	
ME-15	15,941	4			Allenstown, Bow, Dunbarton	4.74%	Allenstown, Bow
ME-17	4,398	1	ME-25	2	Concord Ward 1*	-0.67%	
ME-18	4,398	1			Concord Ward 2*	-0.67%	
ME-19	4,398	1			Concord Ward 3*	-0.67%	
ME-21	4,398	1			Concord Ward 4*	-0.67%	
ME-22	4,398	1			Concord Ward 5*	-0.67%	
ME-23	4,398	1			Concord Ward 6*	-0.67%	
ME-24	4,397	1			Concord Ward 7*	-0.69%	
ME-26	4,397	1	ME-29	1	Concord Ward 8*	-4.24%	
ME-27	4,397	1			Concord Ward 9*	-4.24%	
ME-28	4,397	1			Concord Ward 10*	-4.24%	
Total	153,808	45					6
*Populations used are assumed to be ideal populations for wards							

One of the biggest improvements for NH House district maps was made in Merrimack County. In 2010, there were 11 violations of the NH Constitution, but in our maps, just six. Three towns, Chichester, Canterbury, Dunbarton, are surrounded by larger, own-district eligible towns, forcing violations. There's nothing we can do without a change in Constitutional rules.

Merrimack receives 44.662 reps and like other counties, the distance from a whole number makes it more challenging.

Good news: Franklin is no longer connected with Northfield (floterial added); Concord is no longer districted with Hopkinton; and New London, Pittsfield, Pembroke, all get their own district. Unfortunately, though, Epson & Allenstown lose their own district

Deviations for Merrimack ranged from -4.42 to 4.74% for a total

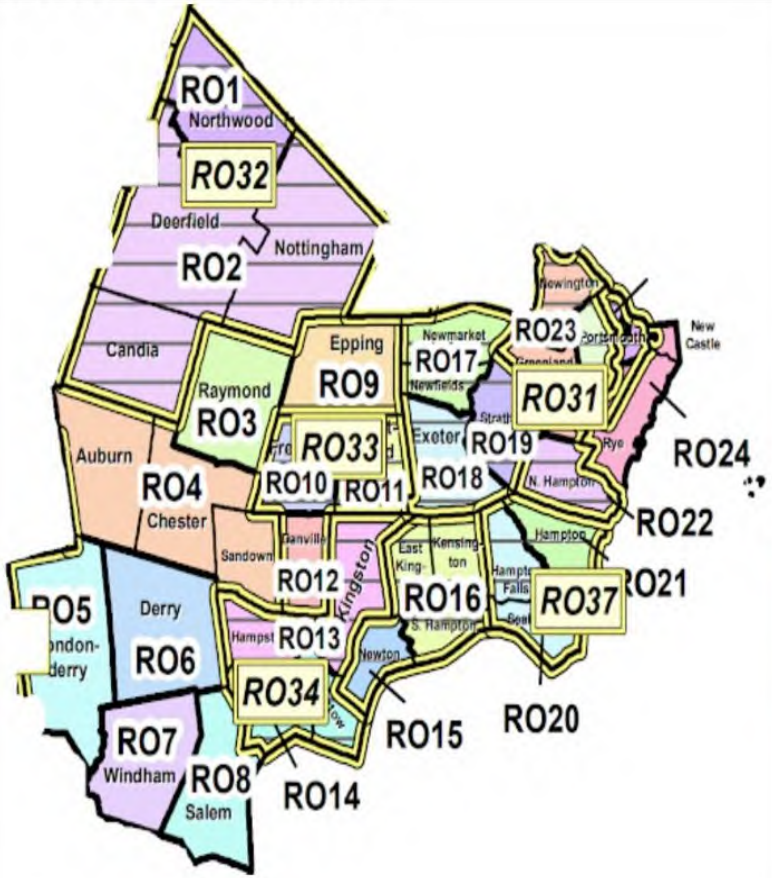
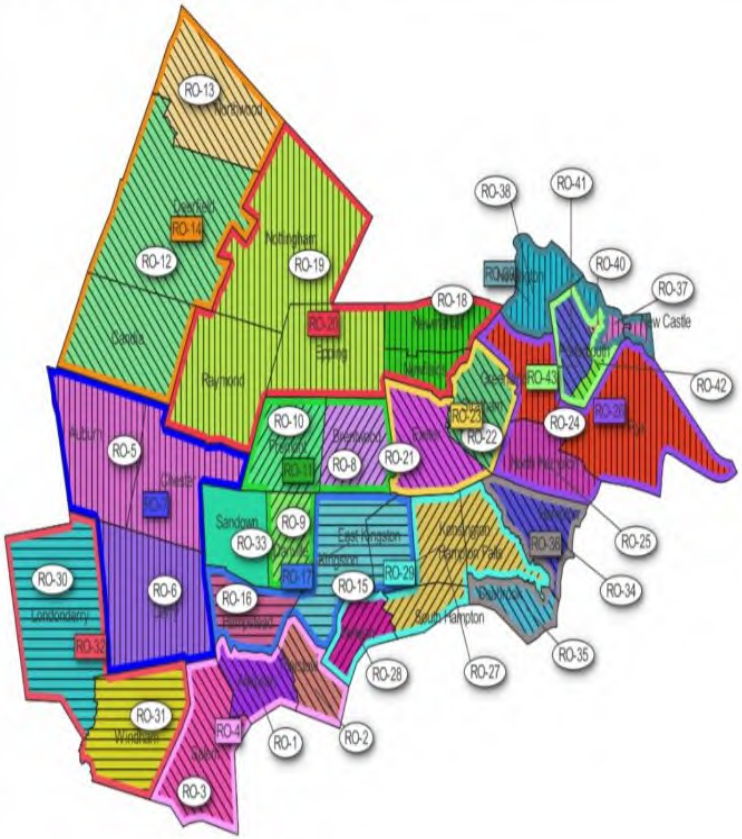
NH House Non-Floterial Map Metrics	# True	# False	Total	% True
Towns/wards preserved	38	0	38	100.0%
Towns/wards in non-floterial district	38	0	38	100.0%
Eligible towns/wards in dedicated district	16	6	22	72.7%
HS SAUs preserved	9	4	13	69.2%
Eligible towns/wards w/ SVI>=5 in dedicated district	10	0	10	100.0%
Competitive districts (averaged 2020 elections)	3	19	22	13.6%
Map Analysis v24 - Merrimack Opt1 NF.xlsm				

NH House Floterial Map Metrics	# True	# False	Total	% True
Towns/wards preserved	31	0	31	100.0%
HS SAUs preserved	8	3	11	72.7%
Cities/towns w/ SVI>=5 preserved	0	1	1	0.0%
Competitive districts (averaged 2020 elections)	2	4	6	33.3%
Map Analysis v24 - Merrimack Opt1 F.xlsm				

range of 9.16%.

Rockingham County

Map-a-Thon

2010 NH House (Current Map)	2020 Map-a-Thon Proposed
	
	Links to M-A-T 2020 maps in DRA 2020 software: Non-Foterial: https://davesredistricting.org/join/04213051-c1e0-4e58-adee-e0a639e29e01 Floterial: https://davesredistricting.org/join/eb3fed9e-5164-48cd-b0e2-db7bf9e255ad

Rockingham County Details & Analysis

Rockingham County Proposal							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
RO-1	7,087	2	RO-4	1	Atkinson	-4.62%	
RO-2	7,830	2			Plaistow	4.58%	
RO-3	30,089	8			Salem	0.79%	
RO-5	11,178	3	RO-7	1	Auburn, Chester	0.00%	Auburn, Chester
RO-6	34,317	9			Derry	2.16%	
RO-8	4,490	1	RO-11	1	Brentwood	-1.92%	
RO-9	4,408	1			Danville	-3.27%	
RO-10	4,739	1			Fremont	2.12%	
RO-12	8,868	2	RO-14	1	Candia, Deerfield	-3.06%	Candia, Deerfield
RO-13	4,641	1			Northwood	0.30%	
RO-15	8,643	2	RO-17	1	East Kingston, Kingston	0.79%	Kingston
RO-16	8,998	2			Hampstead	4.09%	
RO-18	11,199	3	RO-20	1	Newfields, Newmarket	-2.26%	Newmarket
RO-19	23,038	6			Epping, Nottingham, Raymond	0.25%	Epping, Nottingham, Raymond
RO-21	16,049	4	RO-23	1	Exeter	-0.35%	
RO-22	7,669	2			Stratham	-4.15%	
RO-24	9,610	2	RO-26	1	Greenland, Rye	4.15%	Greenland, Rye
RO-25	4,538	1			North Hampton	-0.23%	
RO-27	5,392	1	RO-29	1	Hampton Falls, Kensington, South Hampton	2.47%	
RO-28	4,820	1			Newton	-4.92%	
RO-30	25,826	7	RO-32	1	Londonderry	-1.59%	
RO-31	15,817	4			Windham	4.86%	
RO-33	6,548	2			Sandown	-4.93%	
RO-34	16,214	4	RO-36	1	Hampton	1.06%	
RO-35	8,401	2			Seabrook	4.19%	
RO-37	5,391	1	RO-39	1	Portsmouth Ward 5*, New Castle	3.74%	Portsmouth
RO-38	5,202	1			Portsmouth Ward 1*, Newington	1.30%	
RO-40	4,391	1	RO-43	1	Portsmouth Ward 2*	-4.37%	
RO-41	4,391	1			Portsmouth Ward 3*	-4.37%	
RO-42	4,392	1			Portsmouth Ward 4*	-4.35%	
Total	314,176	91					12
*Populations used are assumed to be ideal populations for wards							

Rockingham County saw significant growth 2010 to 2020, surging from 295,223 to 314,176, so its maps have shifted significantly in some areas. It now gets 91.228 state reps.

It also has many own-seat eligible towns, plus has the geographic limitations of the seacoast border.

That said, Map-a-Thon maps show a slight improvement of two additional towns getting dedicated House districts. This includes Atkinson, Plaistow, Hampstead, Sandown & Seabrook. In working for the greater good, Epping & Raymond unfortunately lost their own district in our maps.

NH House Non-Floterial Map Metrics	# True	# False	Total	% True
Towns/wards preserved	41	0	41	100.0%
Towns/wards in non-floterial district	41	0	41	100.0%
Eligible towns/wards in dedicated district	21	13	34	61.8%
HS SAUs preserved	10	7	17	58.8%
Eligible towns/wards w/ SVI>=5 in dedicated district	0	0	0	#N/A
Competitive districts (averaged 2020 elections)	4	26	30	13.3%

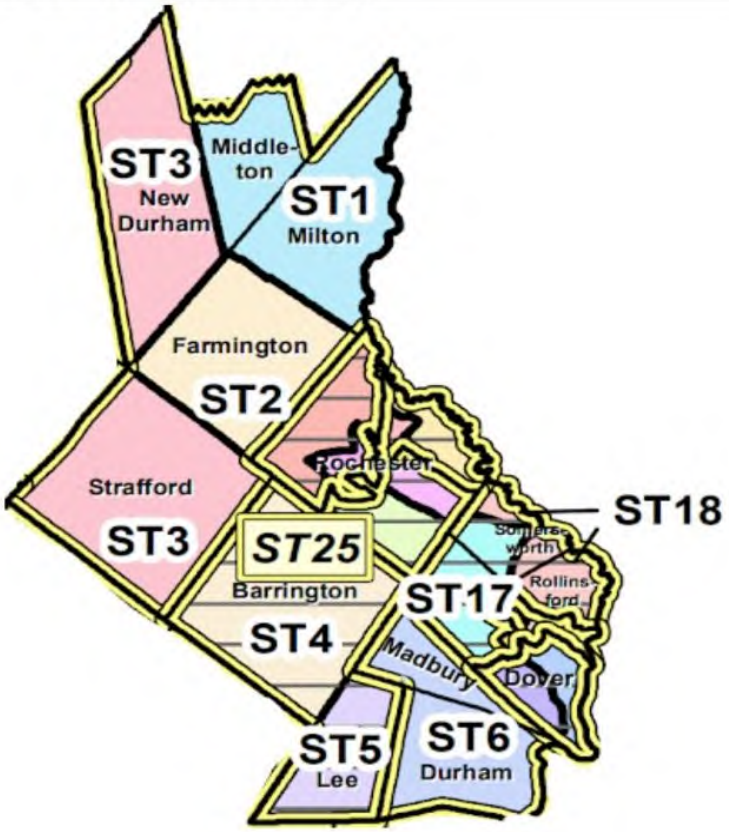
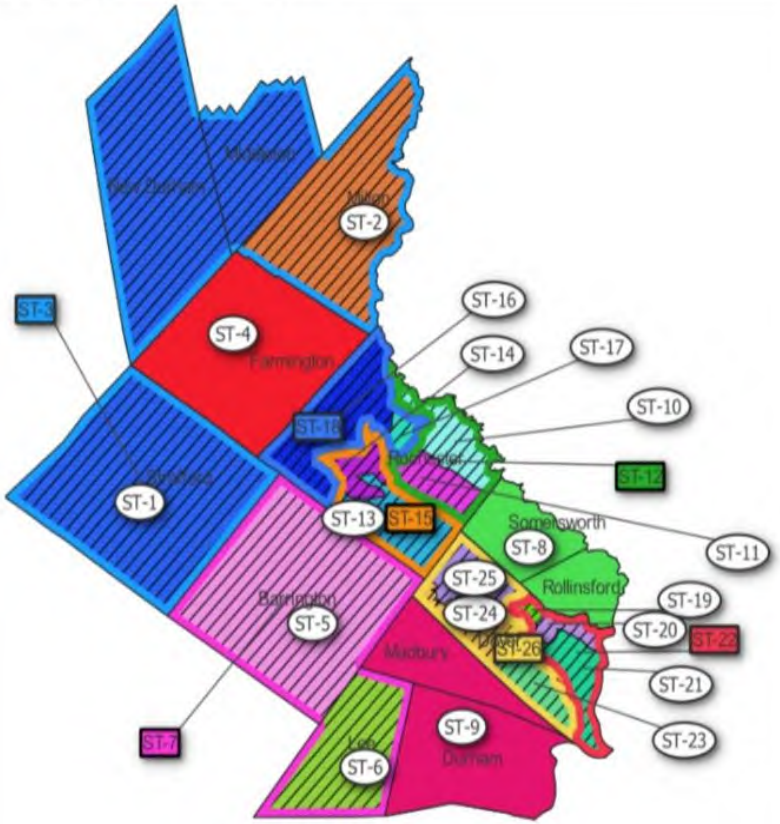
NH House Floterial Map Metrics	# True	# False	Total	% True
Towns/wards preserved	40	0	40	100.0%
HS SAUs preserved	10	7	17	58.8%
Cities/towns w/ SVI>=5 preserved	0	0	0	#N/A
Competitive districts (averaged 2020 elections)	2	11	13	15.4%
NHHouse-Rockingham-2020Opt1BFlot-V24-20211026.xlsm				

Three of Rockingham's violations couldn't be helped under our current Constitutional & court constraints. Newington, Newfields and New Castle are small towns surrounded by larger, own-district eligible towns, and need to be in a district with another town. That creates violations for some of the surrounding towns.

Rockingham County has a deviation range of -4.93 to 4.86%, with a total range of 9.79%.

Stafford County

Map-a-Thon

2010 NH House (Current Map)	2020 Map-a-Thon Proposed
	
	Links to M-A-T 2020 maps in DRA 2020 software: Non-Foterial: https://davesredistricting.org/join/b39e6f9e-fe24-4ebf-99cc-408cd8a8f02a Floterial: https://davesredistricting.org/join/5536f565-ef3e-40f6-8dce-0d540daab858

Strafford County Details & Analysis

Strafford County Proposal							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
ST-1	8,746	2	ST-3	1	Middleton, New Durham, Strafford	-4.57%	Strafford
ST-2	4,482	1			Milton	-2.79%	
ST-4	6,722	2			Farmington	-2.40%	
ST-5	9,326	2	ST-7	1	Barrington	1.29%	
ST-6	4,520	1			Lee	-1.05%	
ST-8	14,452	4			Somersworth Wards 1-5*, Rollinsford	4.91%	Somersworth
ST-9	17,408	5			Madbury, Durham	1.10%	Durham
ST-10	5,415	1	ST-12	1	Rochester Ward 1*	4.83%	
ST-11	5,415	1			Rochester Ward 2*	4.83%	
ST-13	5,415	1	ST-15	1	Rochester Ward 3*	4.83%	
ST-14	5,415	1			Rochester Ward 4*	4.83%	
ST-16	5,416	1	ST-18	1	Rochester Ward 5*	4.84%	
ST-17	5,416	1			Rochester Ward 6*	4.84%	
ST-19	5,457	1	ST-22	2	Dover Ward 1*	-4.93%	
ST-20	5,457	1			Dover Ward 2*	-4.93%	
ST-21	5,457	1			Dover Ward 3*	-4.93%	
ST-23	5,457	1	ST-26	2	Dover Ward 4*	-4.93%	
ST-24	5,457	1			Dover Ward 5*	-4.93%	
ST-25	5,456	1			Dover Ward 6*	-4.94%	
Total	32,741	38					3
*Populations used are assumed to be ideal populations for wards							

Map-a-Thon succeeded only with a slight improvement of two additional towns getting their own districts. Disappointing was that we had to leave district with Strafford and New Durham, which connects in the middle of the woods.

Two “forced” violations are Rollingsford and Madbury, which need to be districted with surrounding larger towns.

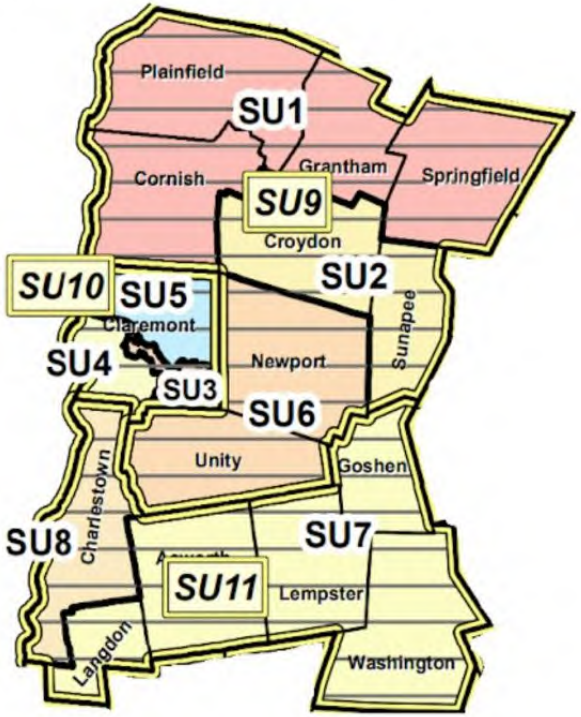
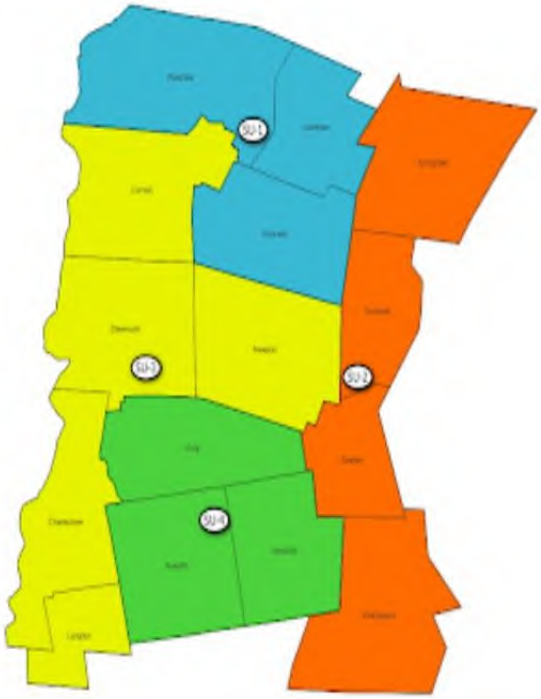
Towns which did get their dedicated districts were Milton & Dover, and Barrington, Lee, Rochester & Farmington kept their districts.
Deviations for Strafford are -4.93 to 4.91%,9.84% Total.

NH House Non-Floterial Map Metrics	# True	# False	Total	% True
Towns/wards preserved	27	0	27	100.0%
Towns/wards in non-floterial district	27	0	27	100.0%
Eligible towns/wards in dedicated district	16	2	18	88.9%
HS SAUs preserved	6	3	9	66.7%
Eligible towns/wards w/ SVI>=5 in dedicated district	0	1	1	0.0%
Competitive districts (averaged 2020 elections)	6	13	19	31.6%
NHHouse-Strafford-2020Opt1NonF-V24-20211026.xlsm				

NH House Floterial Map Metrics	# True	# False	Total	% True
Towns/wards preserved	18	0	18	100.0%
HS SAUs preserved	6	1	7	85.7%
Cities/towns w/ SVI>=5 preserved	0	0	0	#N/A
Competitive districts (averaged 2020 elections)	4	2	6	66.7%

Sullivan County

Map-a-Thon

2010 NH House (Current Map)	2020 Map-a-Thon Proposed
	
	Links to M-A-T 2020 maps in DRA 2020 software: Non-Foterial: Floterial:

Sullivan County Details & Analysis

Sullivan County Proposal					
District	Population	# Reps	Towns/Wards	% Deviation	Violations
1	6,664	2	Plainfield, Grantham, Croydon	-3.25%	
2	6,589	2	Springfield, Sunapee, Goshen, Washington	-4.34%	
3	26,321	8	Cornish, Claremont, Newport, Charlestown, Langdon	-4.46%	Claremont, Newport, Charlestown
4	3,489	1	Unity, Acworth, Lempster	1.31%	
Total	43,063	13			3

We're sorry to report that Sullivan County is the only county which has more violations for 2020 than in 2010.

Population loss led to a reduction to an apportionment of 12.504 reps, which made it measurable harder to allocate the representation over the towns. Floterials can sometimes help, but did not help in Sullivan.

NH House Non-Floterial Map Metrics	# True	# False	Total	% True
Towns/wards preserved	17	0	17	100.0%
Towns/wards in non-floterial district	17	0	17	100.0%
Eligible towns/wards in dedicated district	0	5	5	0.0%
HS SAUs preserved	6	2	8	75.0%
Eligible towns/wards w/ SVI>=5 in dedicated district	0	3	3	0.0%
Competitive districts (averaged 2020 elections)	1	2	3	33.3%
Map Analysis v24 - Sullivan Opt1 NF.xlsm				

Where there were two violations for eligible towns not getting their own House district in 2010, these challenges caused one more violation, AND forced us to make districts that would be larger than we would like.

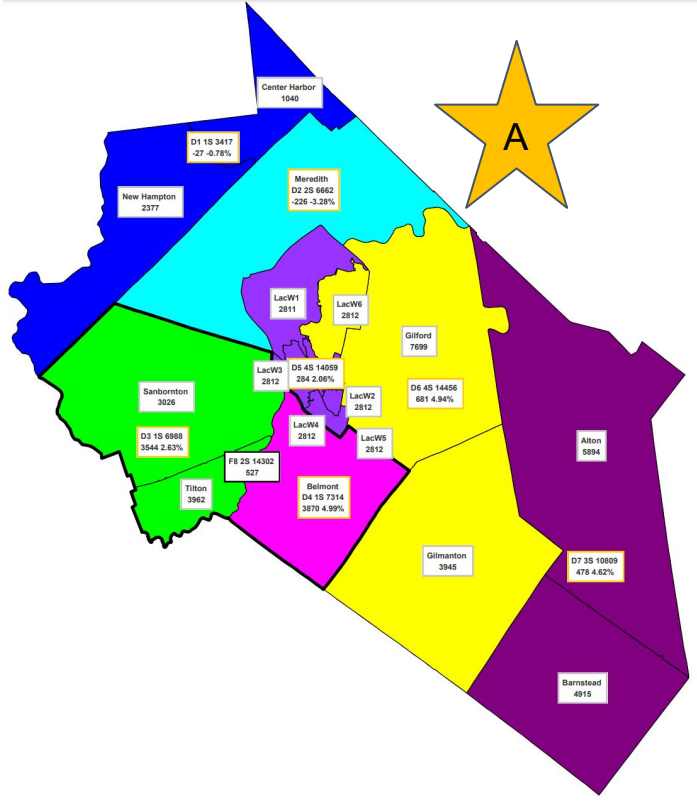
The Map-a-Thon team regrets that we were not able to offer a better map. We look forward to changes, such as a larger deviation, which would allow for better districts. One scenario the team ran used an 11.9% deviation (1.9% over the norm) and it dropped Sullivan County from three violations to zero.

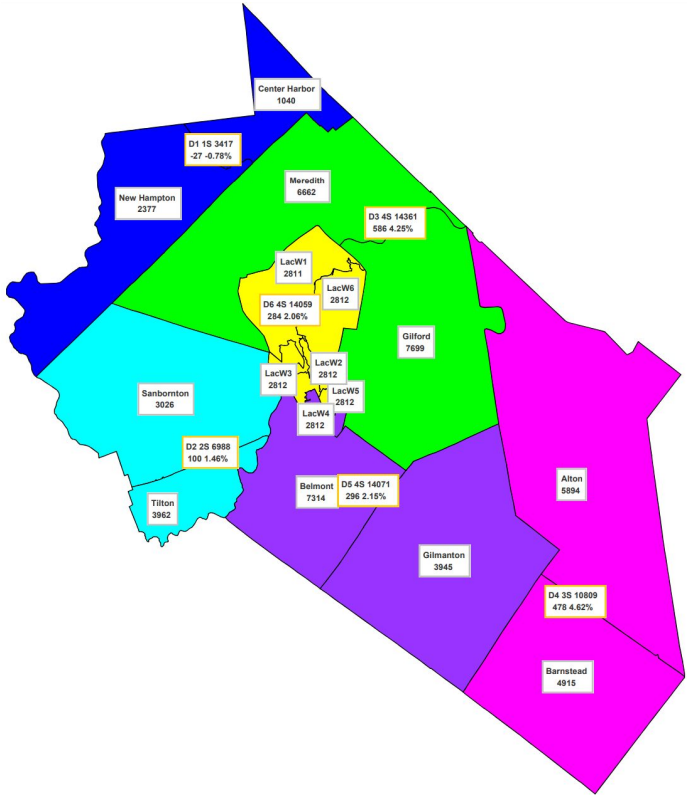
An increase in allowable deviation would help in Sullivan County
Deviations -4.46 to 1.31 for total 5.77.

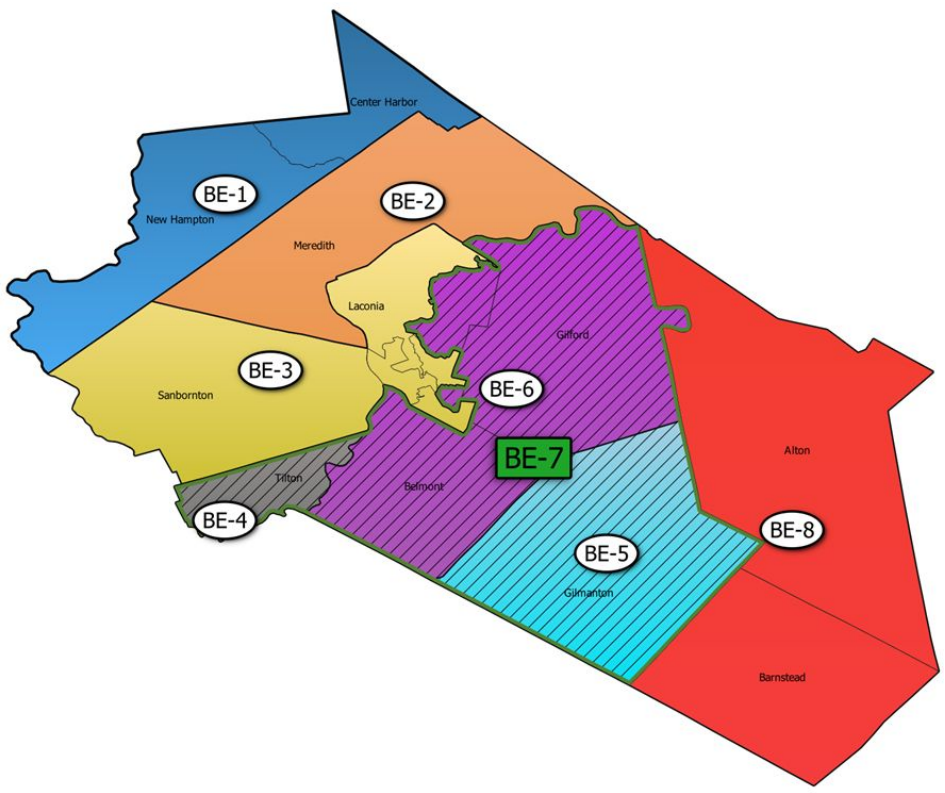
EXHIBIT E

House Special Committee on Redistricting
Analysis of Proposed NH House Maps

November 8, 2021

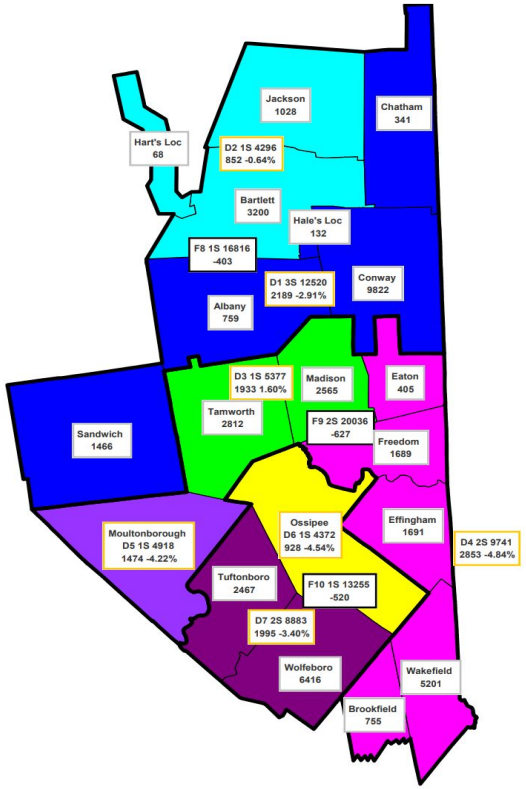


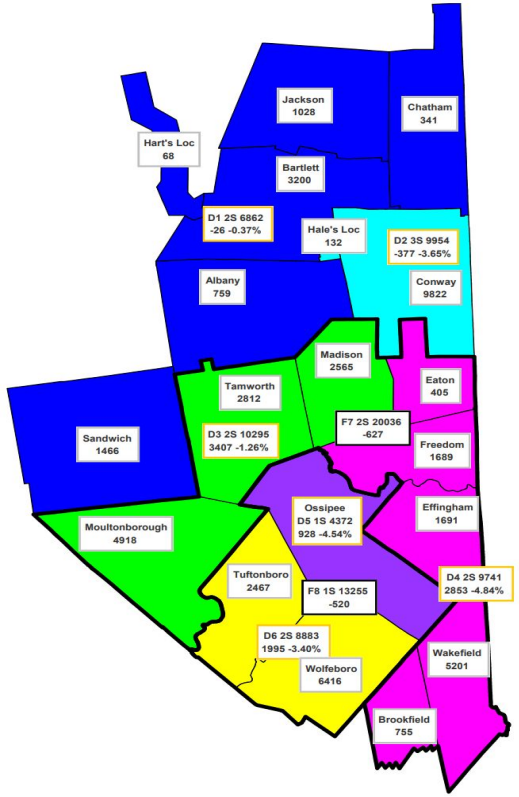


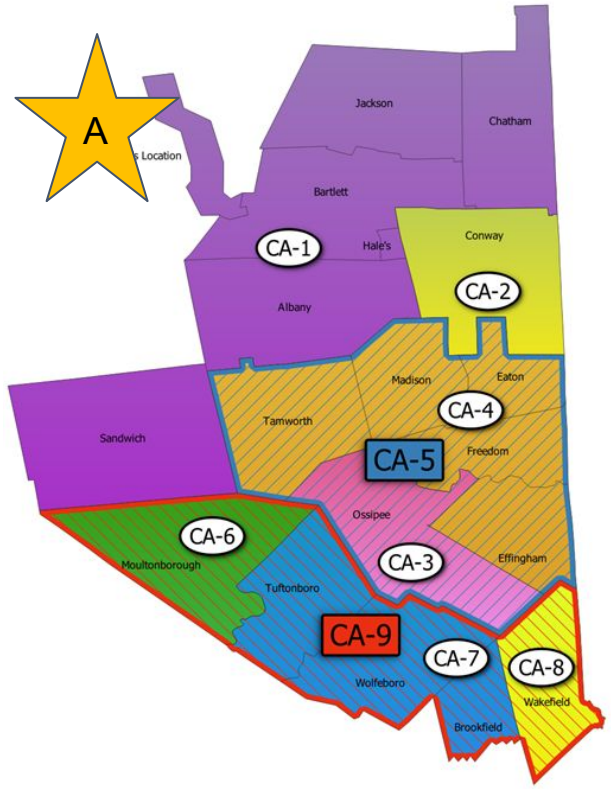


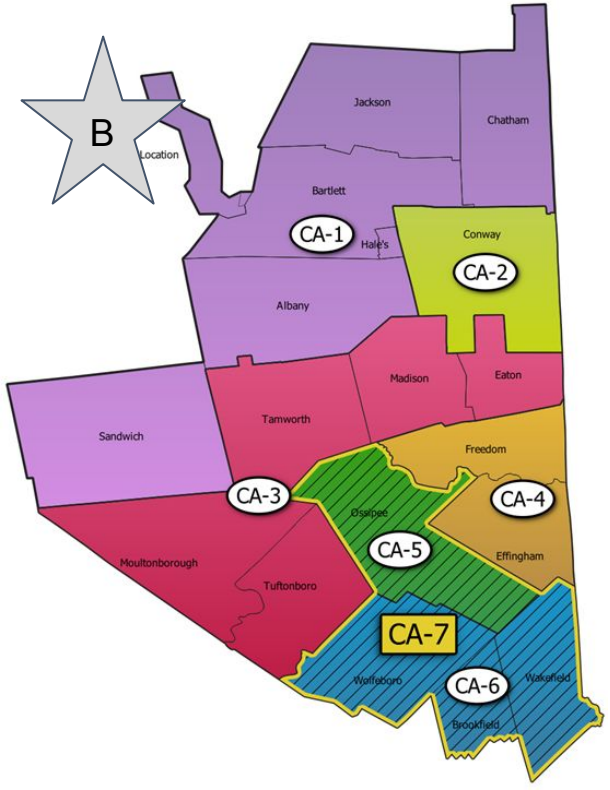
Minority map contains one more violation than M-A-T, but keeps 5 of 6 Laconia wards together. In Majority map, no eligible town gets own district.

Belknap County	Democrats	Republicans	Map-a-Thon
Deviation	-3.28% to 4.99% (8.27%)	-0.78% to 4.62% (5.40%)	-3.28% to 4.71% (7.99%)
# Violations	6	8	5
# Towns/Wards in Largest Non-Floterial District	4	4	5
Largest # Reps in a Non-Floterial District	4	4	5
# Towns/Wards in Largest Floterial District	3	N/A	6
Largest # Reps in a Floterial District	2	N/A	1
Partisan Lean of Seats (Lean Dem/Lean Rep/Competitive)	0/14/4	0/18/0	0/18/0



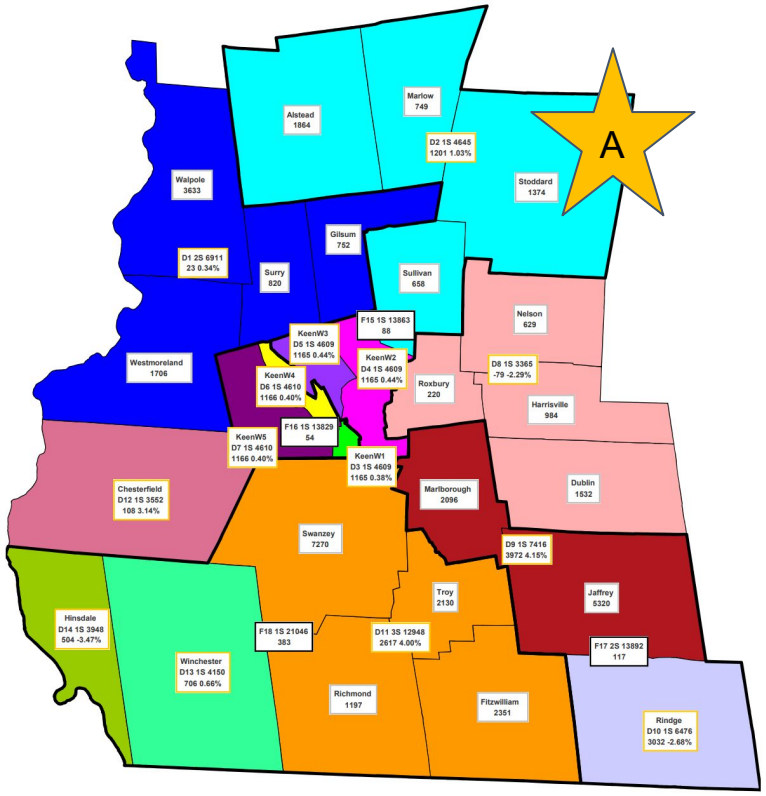


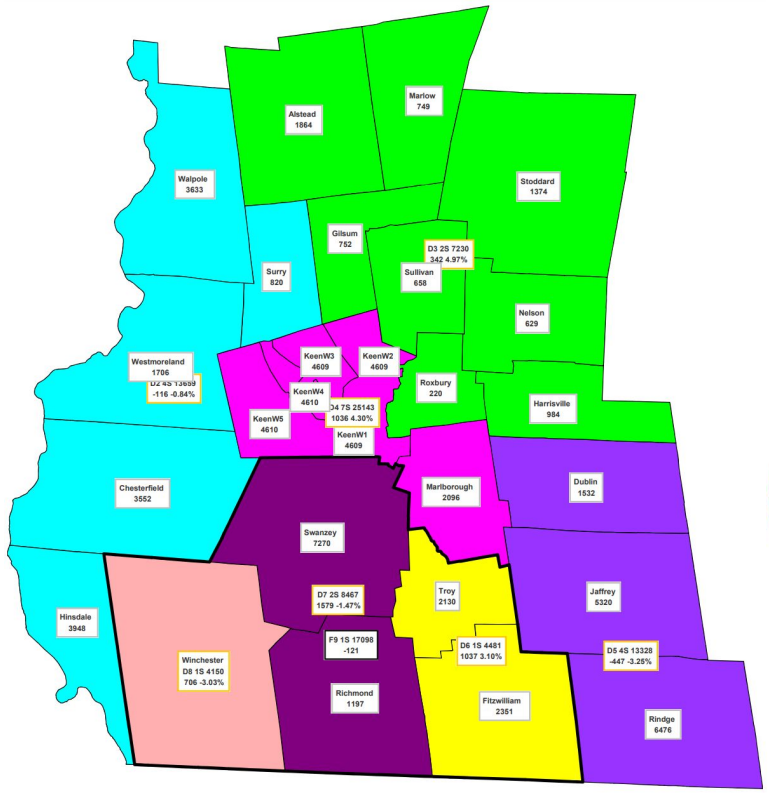


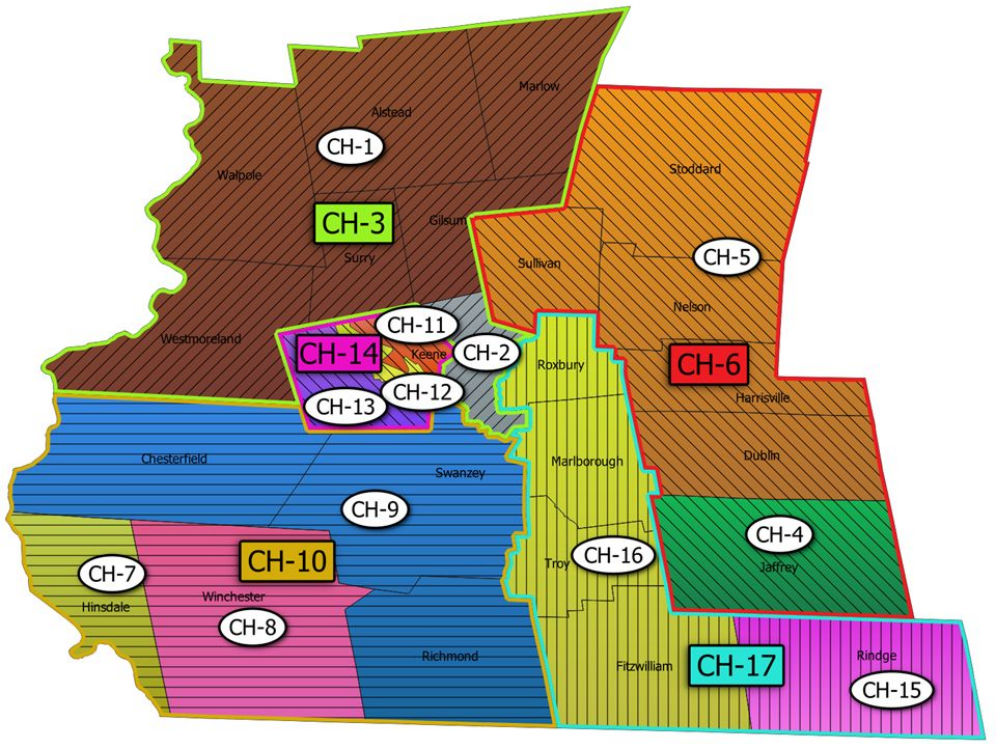


M-A-T 15% map which goes only slightly below -5% enables all eligible towns but Wolfeboro to get own House district. Unavoidably, all maps have large districts.

Carroll County	Democrats	Republicans	Map-a-Thon 15% Dev	Map-a-Thon
Deviation	-4.84% to 1.60% (6.44%)	-4.84% to -0.37% (4.47%)	-5.95% to 1.54% (7.49%)	-4.93% to 1.54% (6.47%)
# Violations	3	4	1	3
# Towns/Wards in Largest Non-Float District	5	6	7	7
Largest # Reps in a Non-Floterial District	3	3	3	4
# Towns/Wards in Largest Floterial District	8	8	6	4
Largest # Reps in a Floterial District	2	2	2	1
Lean of Seats(Lean D/Lean R/Comp)	0/10/5	0/10/5	0/10/5	0/10/5

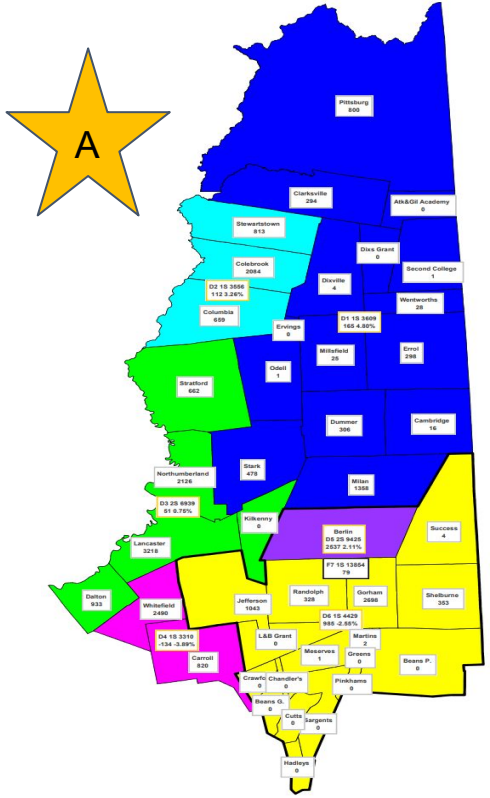


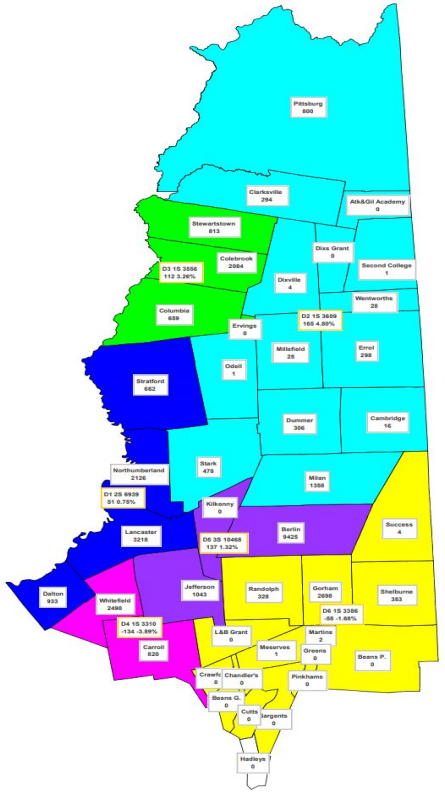


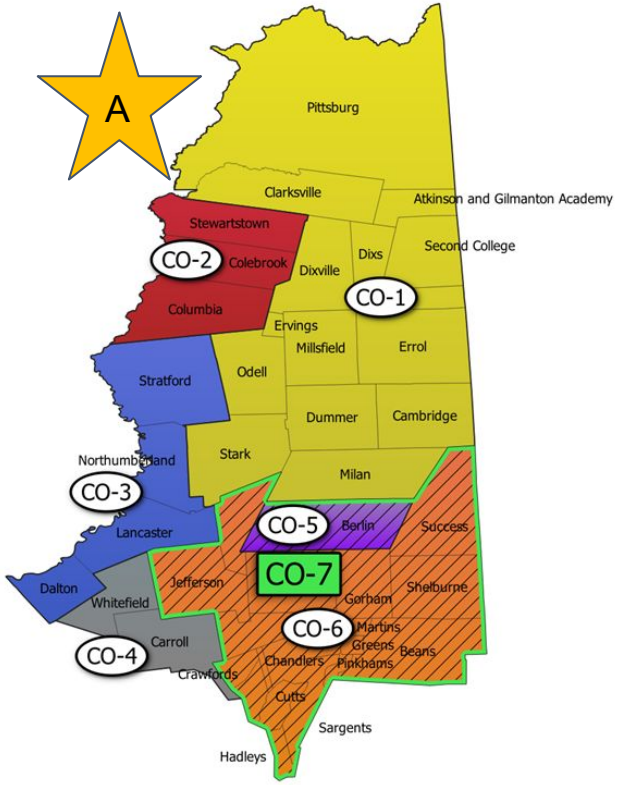


Minority map has all Keene wards in dedicated districts, and cuts overall violations in the county to 3. In Majority map, 7 of 8 eligible don't get dedicated districts.

Cheshire County	Democrats ★	Republicans	Map-a-Thon
Deviation	-3.47% to 4.15% (7.62%)	-3.25% to 4.97% (8.22%)	-4.83% to 3.43% (8.26%)
# Violations	3	7	4
# Towns/Wards in Largest Non-Floterial District	4	5	6
Largest # Reps in a Non-Floterial District	3	7	4
# Towns/Wards in Largest Floterial District	6	5	7
Largest # Reps in a Floterial District	2	1	2
Partisan Lean of Seats (Lean Dem/Lean Rep/Competitive)	11/1/10	13/4/5	13/3/6

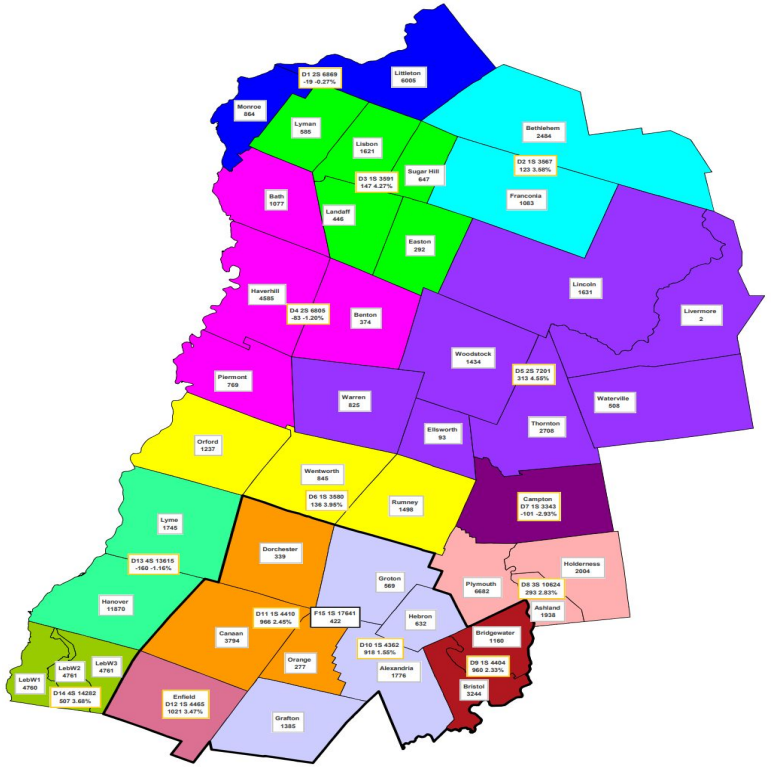


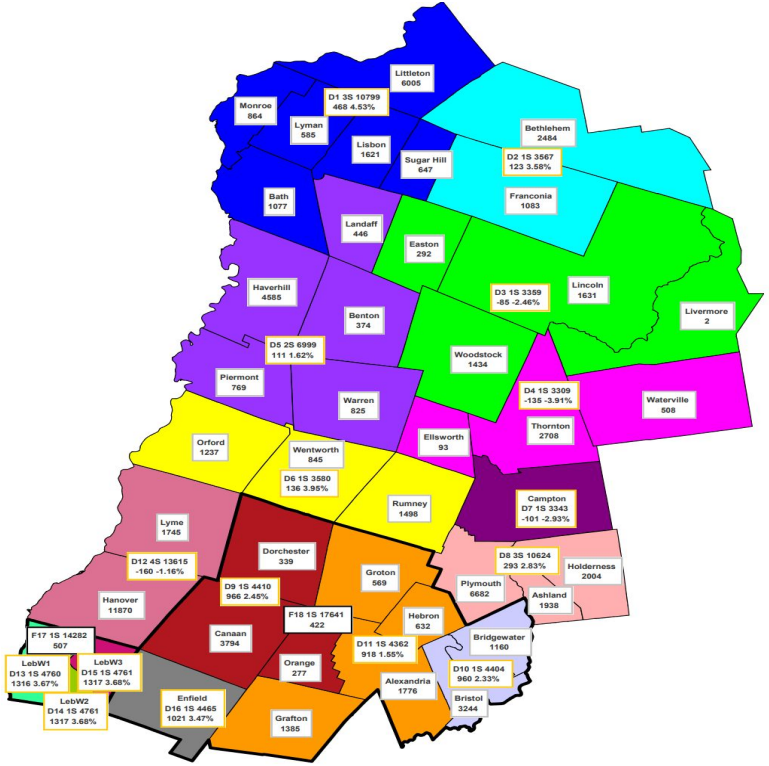


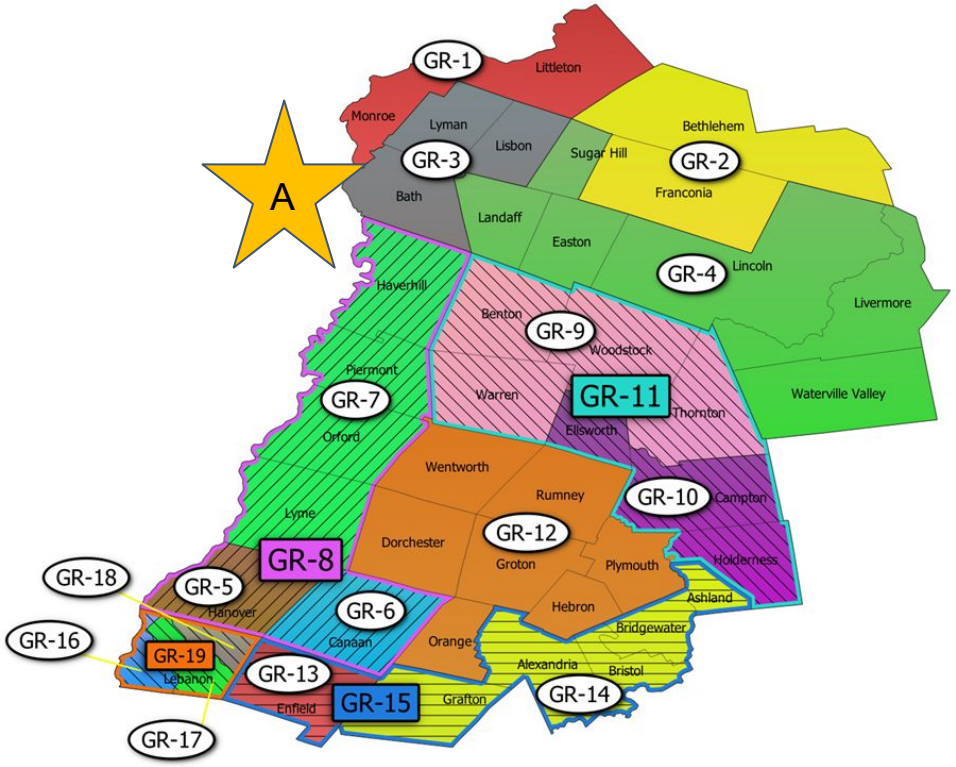


Minority and M-A-T maps are almost identical; both give Berlin its own House District. Majority is somewhat similar, but Berlin misses its own district.

Coos County	Democrats ★	Republicans	Map-a-Thon ★
Deviation	-3.89% to 4.80% (8.68%)	-3.89% to 4.80% (8.68%)	-3.89% to 4.80% (8.68%)
# Violations	0	1	0
# Towns/Wards in Largest Non-Floterial District	17	15	17
Largest # Reps in a Non-Floterial District	2	3	2
# Towns/Wards in Largest Floterial District	18	N/A	18
Largest # Reps in a Floterial District	1	N/A	1
Partisan Lean of Seats (Lean Dem/Lean Rep/Competitive)	0/5/4	0/5/4	0/5/4

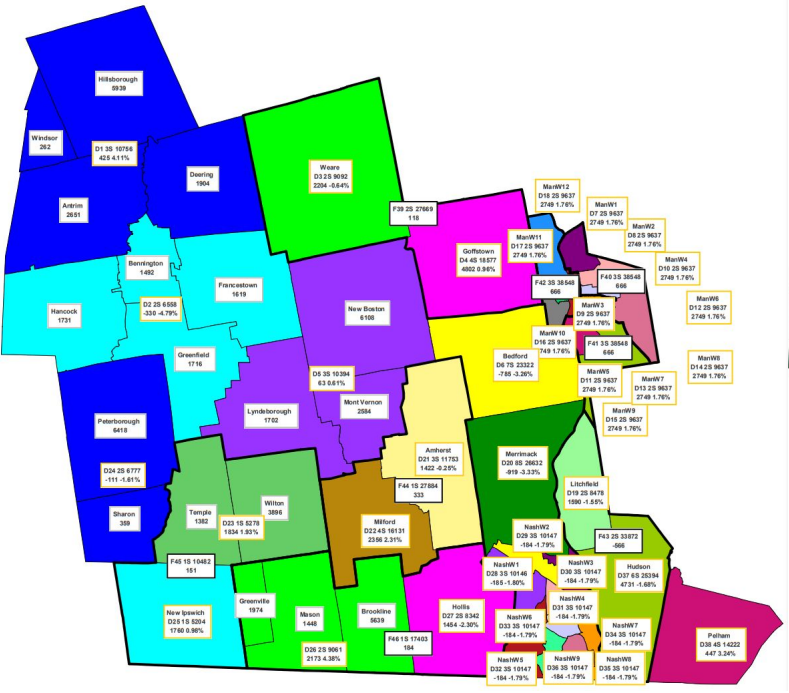


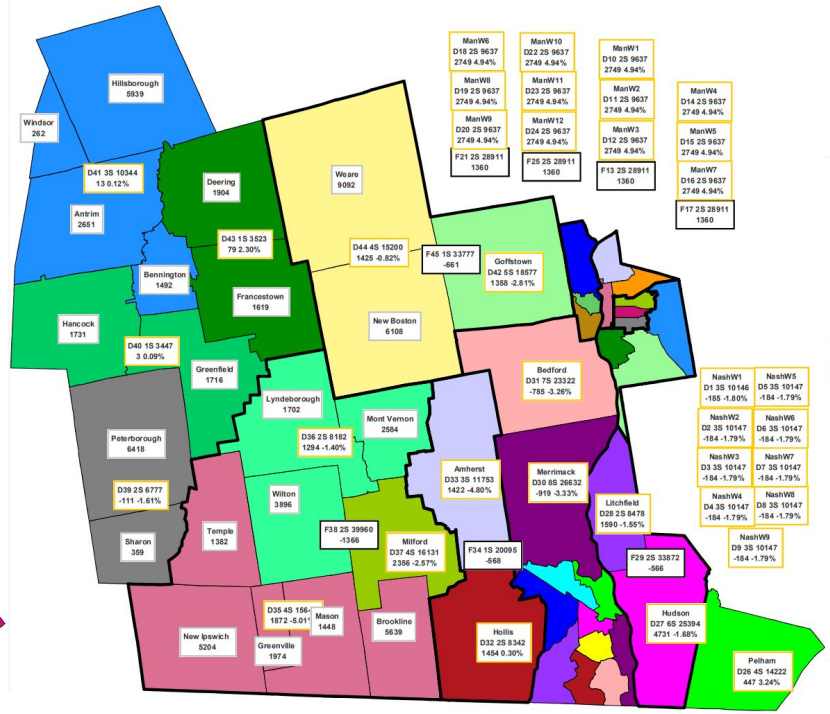


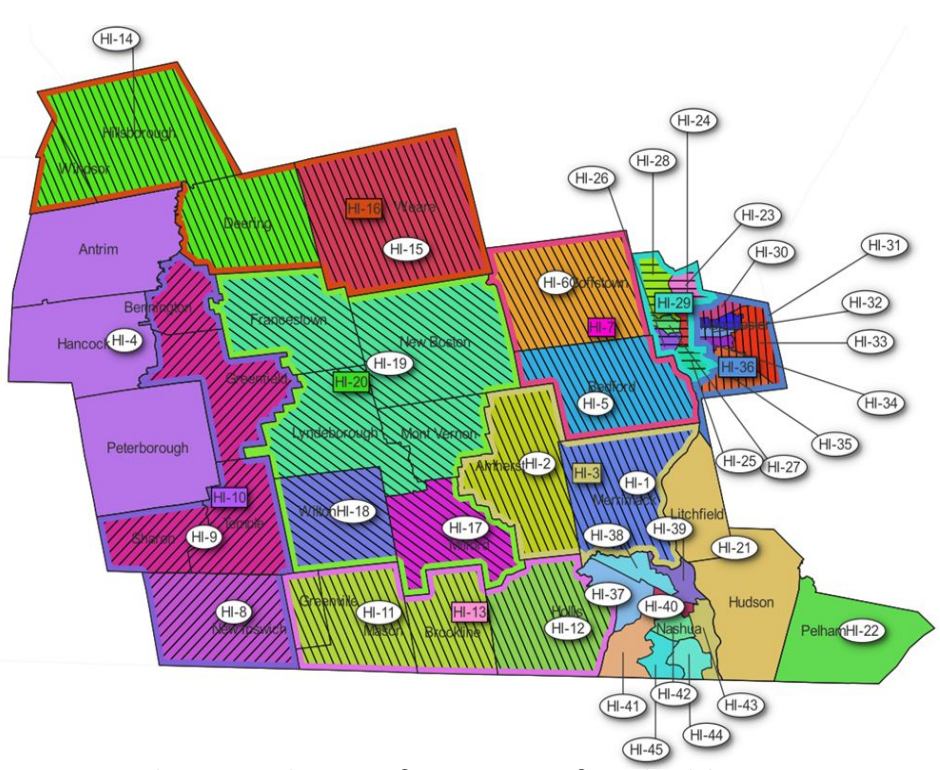


Majority and Minority maps are the same south of Ellsworth. M-A-T gives Hanover & Canaan their own dedicated districts.

Grafton County	Democrats	Republicans	Map-a-Thon ★
Deviation	-2.93% to 4.55% (7.48% overall)	-3.91% to 4.53% (8.44% overall)	-4.87% to 4.99% (9.86% overall)
# Violations	5 (6 with Leb wards)	5	3
# Towns/Wards in Largest Non-Floterial District	7	6	6
Largest # Reps in a Non-Floterial District	4	4	3
# Towns/Wards in Largest Floterial District	10	10	7
Largest # Reps in a Floterial District	1	1	7
Partisan Lean of Seats (Lean Dem/Lean Rep/Competitive)	13/6/7	13/7/6	12/5/9



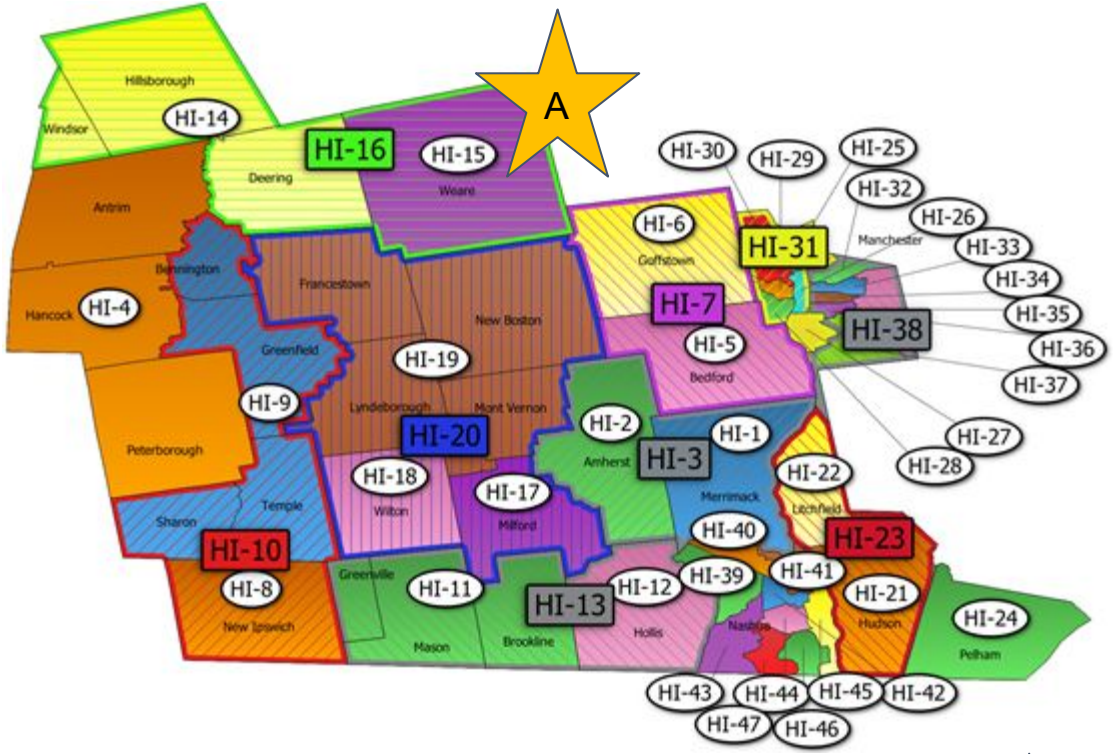




New M-A-T version (2.0 - next page) separates Litchfield & Hudson with a floterial, similar to committee's maps, and cuts violations from 6 to 4 for eligible towns. Majority's Manchester map dependant on exact numbers being drawn by the city. An 18-person difference could invalidate the map, and subject it to litigation.

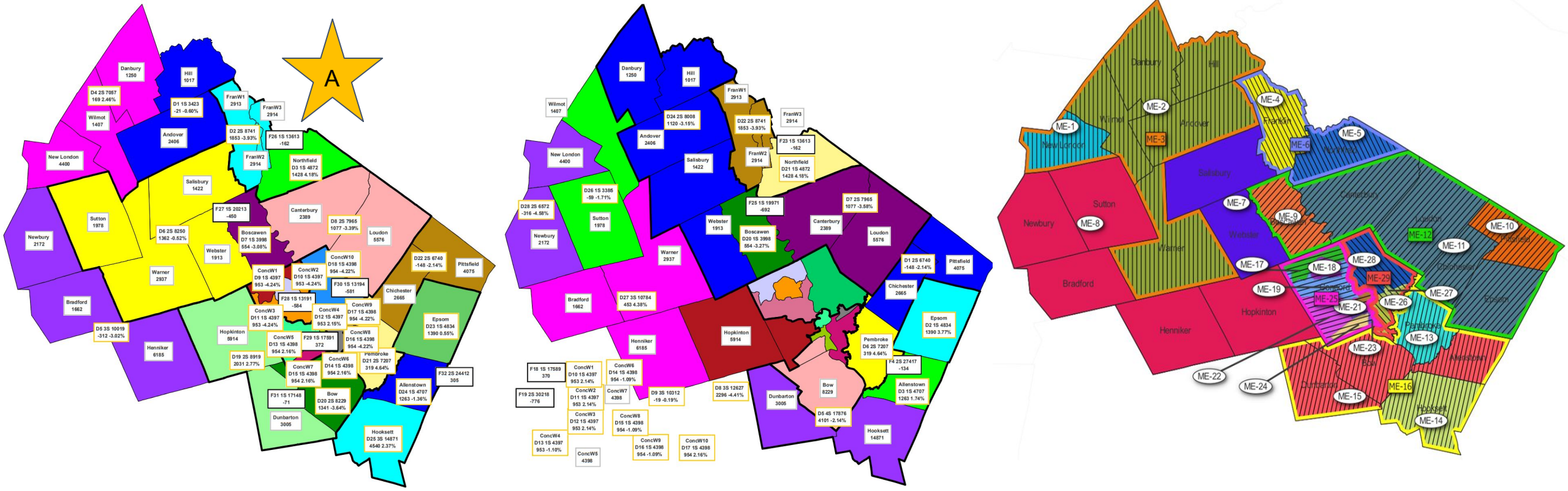
Hillsborough County	Democrats	Republicans	Map-a-Thon 1.0
Deviation	-4.79% to 4.38% (9.17%)	-5.01% to 4.94% (9.95%)	-4.77% to 4.54% (9.31%)
# Violations	5	7	6
# Towns/Wards in Largest Non-Floterial District	4	9	4
Largest # Reps in a Non-Floterial District	8	8	10
# Towns/Wards in Largest Floterial District	4	9	6
Largest # Reps in a Floterial District	3	2	5
Partisan Lean of Seats (Lean Dem/Lean Rep/Competitive)	33/30/60	36/36/51	34/28/61

Combination of Committee Proposals and Map-A-Thon Maps



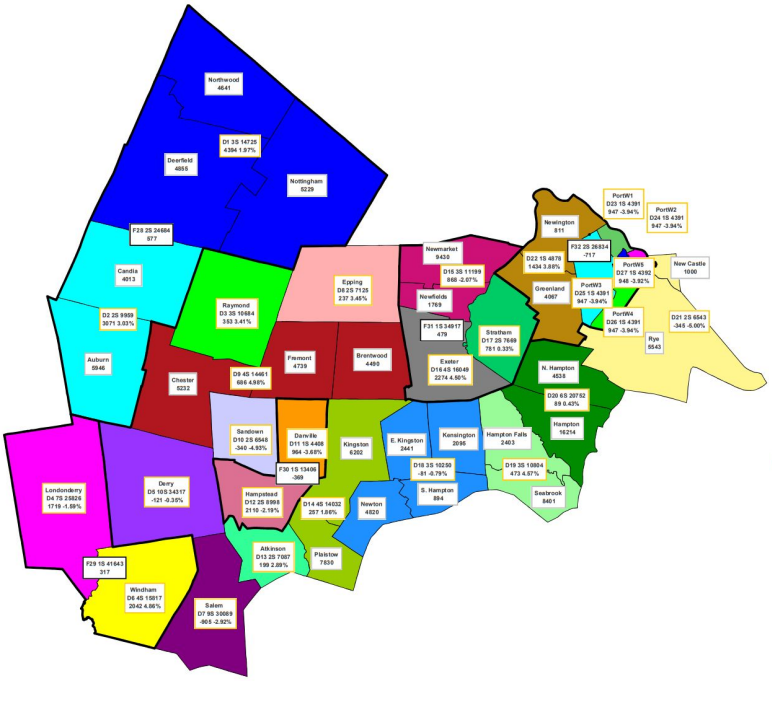
Updated from previous submission	Map-a-Thon 2.0
Deviation	-4.77% to 4.54% (9.31%)
# Violations	4
# Towns/Wards in Largest Non-F District	4
Largest # Reps in a Non-F District	10
# Towns/Wards in Largest F District	6
Largest # Reps in a Floterial District	5
Partisan Lean (Lean D/Lean R/Comp)	34/28/61

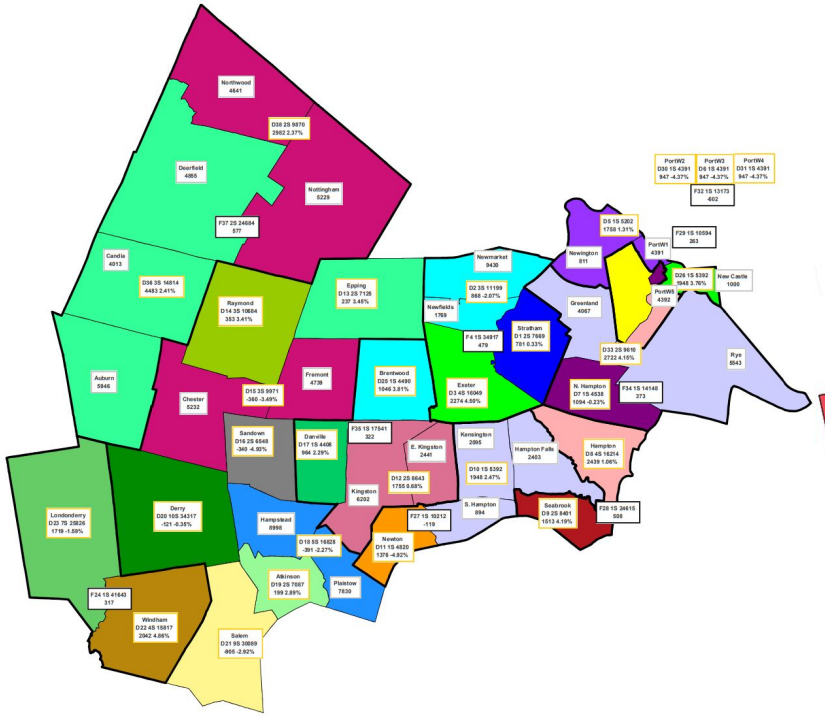
Hillsborough County Proposal							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
HI-1	26,632	7	HI-3	1	Merrimack	0.51%	
HI-2	11,753	3			Amherst	3.22%	
HI-4	10,800	3			Antrim, Hancock, Peterborough	4.54%	Peterborough
HI-5	23,322	6	HI-7	1	Bedford	3.29%	
HI-6	18,577	5			Goffstown	-0.90%	
HI-8	5,204	1	HI-10	1	New Ipswich	-0.10%	
HI-9	4,949	1			Bennington, Greenfield, Sharon, Temple	-3.39%	
HI-11	9,061	2	HI-13	1	Brookline, Greenville, Mason	4.38%	Brookline
HI-12	8,342	2			Hollis	-2.30%	
HI-14	8,105	2	HI-16	1	Deering, Hillsborough, Windsor	-4.77%	Hillsborough
HI-15	9,092	2			Weare	4.41%	
HI-17	16,131	4	HI-20	1	Milford	4.01%	
HI-18	3,896	1			Wilton	0.87%	
HI-19	12,013	3			Francestown, Lyndeborough, Mont Vernon, New Boston	3.36%	New Boston
HI-21	25,394	6	HI-23	2	Hudson	-1.68%	
HI-22	8,478	2			Litchfield	-1.55%	
HI-24	14,222	4			Pelham	3.24%	
HI-25	9,637	2	HI-31	5	Manchester Ward 1*	-1.23%	
HI-26	9,637	2			Manchester Ward 3*	-1.23%	
HI-27	9,637	2			Manchester Ward 9*	-1.23%	
HI-28	9,637	2			Manchester Ward 10*	-1.23%	
HI-29	9,637	2			Manchester Ward 11*	-1.23%	
HI-30	9,637	2			Manchester Ward 12*	-1.23%	
HI-32	9,637	2	HI-38	5	Manchester Ward 2*	-1.23%	
HI-33	9,637	2			Manchester Ward 4*	-1.23%	
HI-34	9,637	2			Manchester Ward 5*	-1.23%	
HI-35	9,637	2			Manchester Ward 6*	-1.23%	
HI-36	9,637	2			Manchester Ward 7*	-1.23%	
HI-37	9,637	2			Manchester Ward 8*	-1.23%	
HI-39	10,147	3			Nashua Ward 1*	-1.79%	
HI-40	10,147	3			Nashua Ward 2*	-1.79%	
HI-41	10,147	3			Nashua Ward 3*	-1.79%	
HI-42	10,147	3			Nashua Ward 4*	-1.79%	
HI-43	10,147	3			Nashua Ward 5*	-1.79%	
HI-44	10,147	3			Nashua Ward 6*	-1.79%	
HI-45	10,147	3			Nashua Ward 7*	-1.79%	
HI-46	10,147	3			Nashua Ward 8*	-1.79%	
HI-47	10,146	3			Nashua Ward 9*	-1.80%	
Total	422,937	123					4
*Populations used are assumed to be ideal populations for wards							

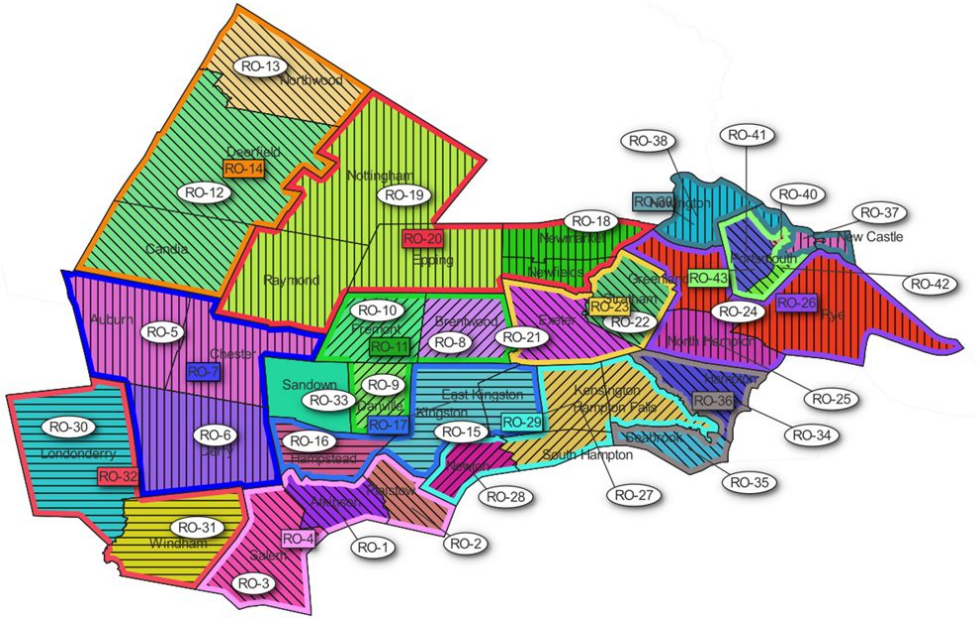


Minority map keeps Concord together, reducing violations to 5. Hopkinton districted with Dunbarton. Majority map splits Concord twice.

Merrimack County	Democrats ★	Republicans	Map-a-Thon
Deviation	-4.24% to 4.64% (8.88%)	-4.58% to 4.64% (9.22%)	-4.42% to 4.74% (9.16%)
# Violations	5	8	6
# Towns/Wards in Largest Non-Floterial District	4	5	5
Largest # Reps in a Non-Floterial District	3	4	5
# Towns/Wards in Largest Floterial District	7	8	7
Largest # Reps in a Floterial District	2	2	2
Partisan Lean of Seats (Lean Dem/Lean Rep/Competitive)	13/17/15	17/20/8	19/16/10

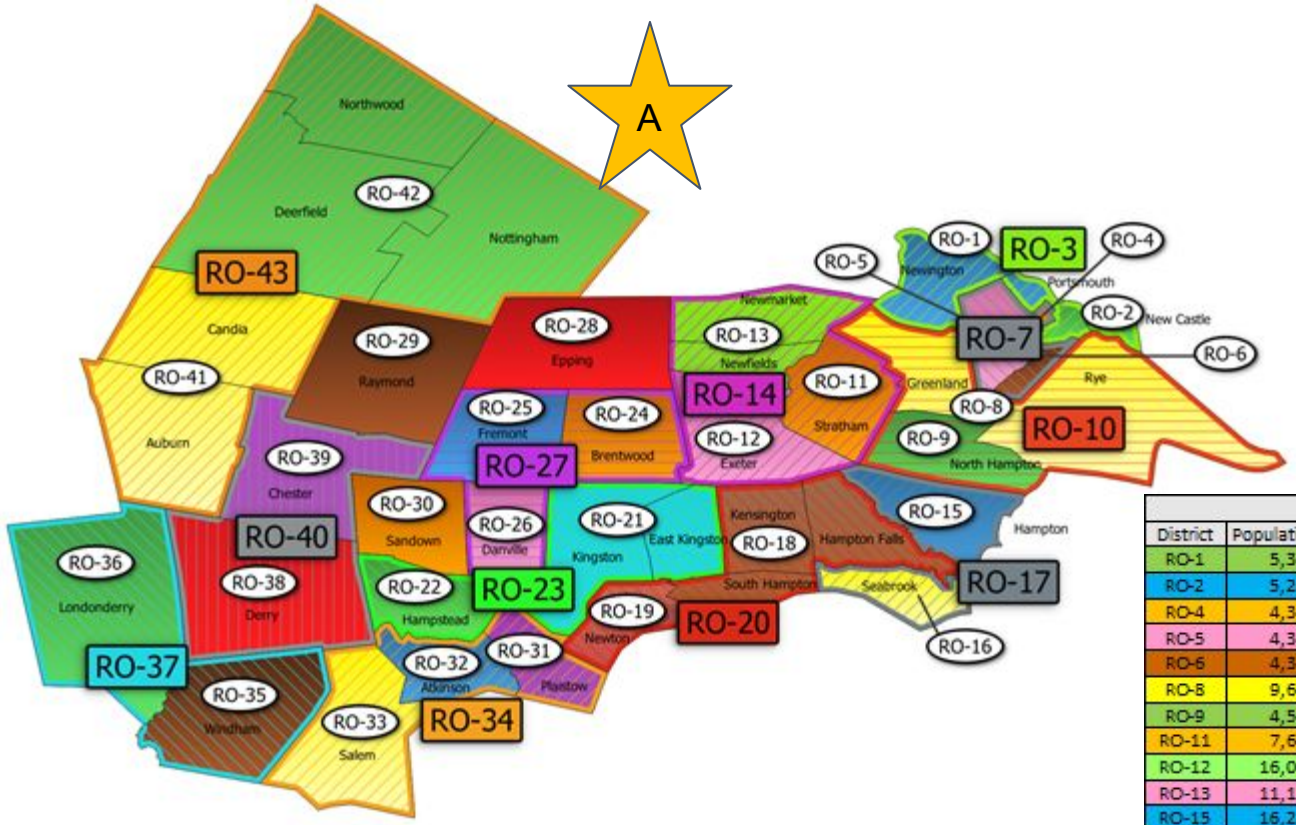






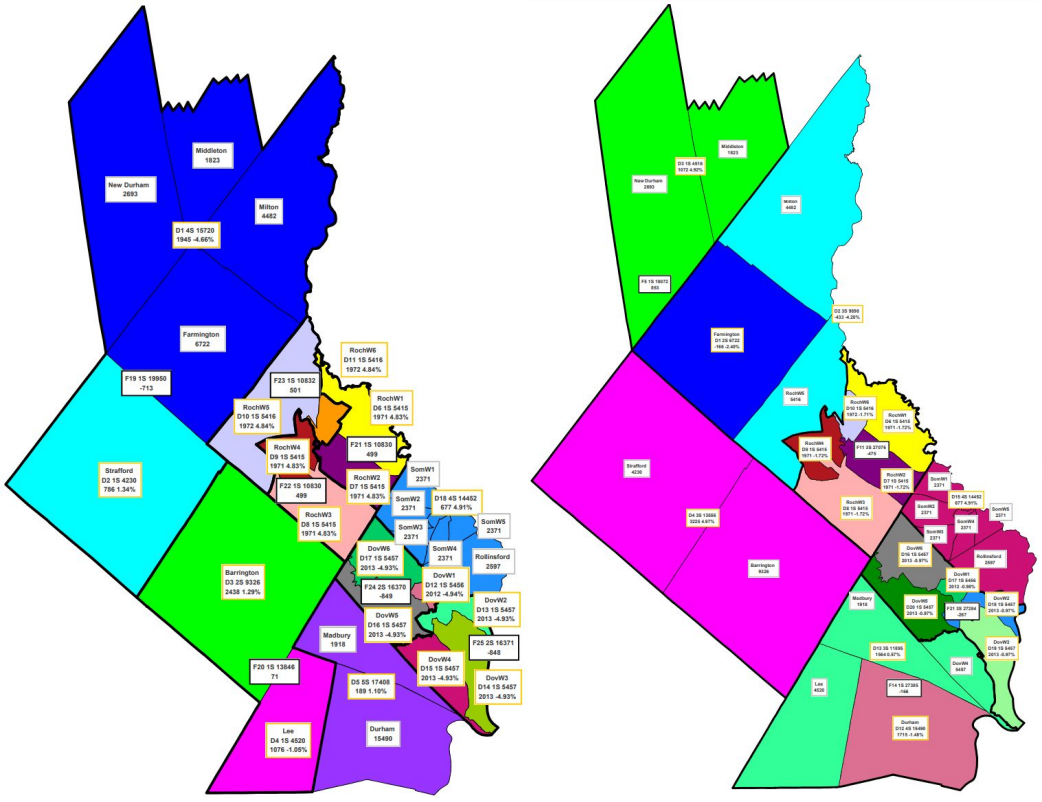
The revised M-A-T (2.0 - next page) is a combination of all three maps. Reduces violations to 10, and reduces size of districts. Deerfield w/Northwood & Nottingham, per multiple resident requests.

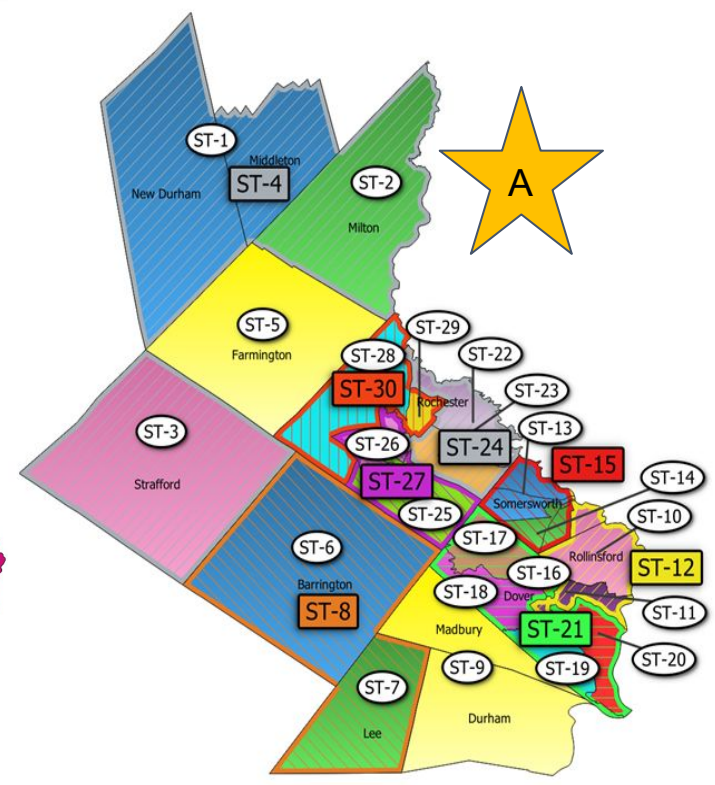
Rockingham County	Democrats	Republicans	Map-a-Thon 1.0
Deviation	-5.00% to 4.98% (9.98%)	-4.93% to 4.86% (9.80%)	-4.93% to 4.86% (9.79%)
# Violations	17	14	12
# Towns/Wards in Largest Non-Floterial District	12	10	3
Largest # Reps in a Non-Floterial District	6	10	9
# Towns/Wards in Largest Floterial District	7	3	4
Largest # Reps in a Floterial District	2	2	1
Partisan Lean of Seats (Lean Dem/Lean Rep/Competitive)	19/65/7	20/63/8	20/63/8

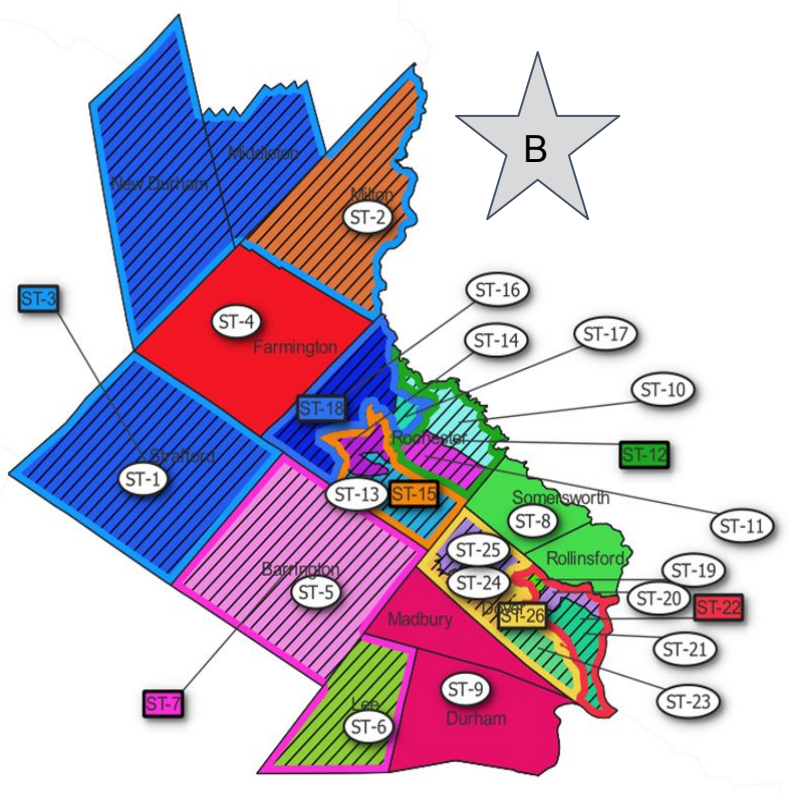


Updated from Previous Submission	Map-a-Thon 2.0 ★
Deviation	-4.92% to 4.86% (9.78%)
# Violations	10
# Towns/Wards in Largest Non-F District	3
Largest # Reps in a Non-F District	8
# Towns/Wards in Largest F District	5
Largest # Reps in a Floterial District	4
Partisan Lean (Lean D/Lean R/Comp)	20/63/8

Rockingham County Proposal							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
RO-1	5,391	1	RO-3	1	Portsmouth Ward 5*, New Castle	3.74%	Portsmouth
RO-2	5,202	1			Portsmouth Ward 1*, Newington	1.30%	
RO-4	4,391	1	RO-7	1	Portsmouth Ward 2*	-4.37%	
RO-5	4,391	1			Portsmouth Ward 3*	-4.37%	
RO-6	4,392	1			Portsmouth Ward 4*	-4.35%	
RO-8	9,610	2	RO-10	1	Greenland, Rye	4.15%	Greenland, Rye
RO-9	4,538	1			North Hampton	-0.23%	
RO-11	7,669	2	RO-14	1	Stratham	0.33%	
RO-12	16,049	4			Newfields, Newmarket	4.50%	Newmarket
RO-13	11,199	3			Exeter	-2.07%	
RO-15	16,214	4	RO-17	1	Hampton	1.06%	
RO-16	8,401	2			Seabrook	4.19%	
RO-18	5,392	1	RO-20	1	Hampton Falls, Kensington, South Hampton	2.47%	
RO-19	4,820	1			Newton	-4.92%	
RO-21	8,643	2	RO-23	1	East Kingston, Kingston	0.79%	Kingston
RO-22	8,998	2			Hampstead	4.09%	
RO-24	4,490	1	RO-27	1	Brentwood	-1.92%	
RO-25	4,739	1			Fremont	2.12%	
RO-26	4,408	1			Danville	-3.27%	
RO-28	7,125	2			Epping	3.45%	
RO-29	10,684	3			Raymond	3.41%	
RO-30	6,548	2			Sandown	-4.93%	
RO-31	7,830	2	RO-34	1	Plaistow	4.58%	
RO-32	7,087	2			Atkinson	-4.62%	
RO-33	30,089	8			Salem	0.79%	
RO-35	15,817	4	RO-37	1	Windham	4.86%	
RO-36	25,826	7			Londonderry	-1.59%	
RO-38	34,317	7	RO-40	4	Derry	-4.83%	
RO-39	5,232	1			Chester	-0.65%	
RO-41	9,959	2	RO-43	2	Auburn, Candia	3.03%	Auburn, Candia
RO-42	14,725	3			Deerfield, Northwood, Nottingham	1.97%	Deerfield, Northwood, Nottingham
Total	314,176	91					10
*Populations used are assumed to be ideal populations for wards							

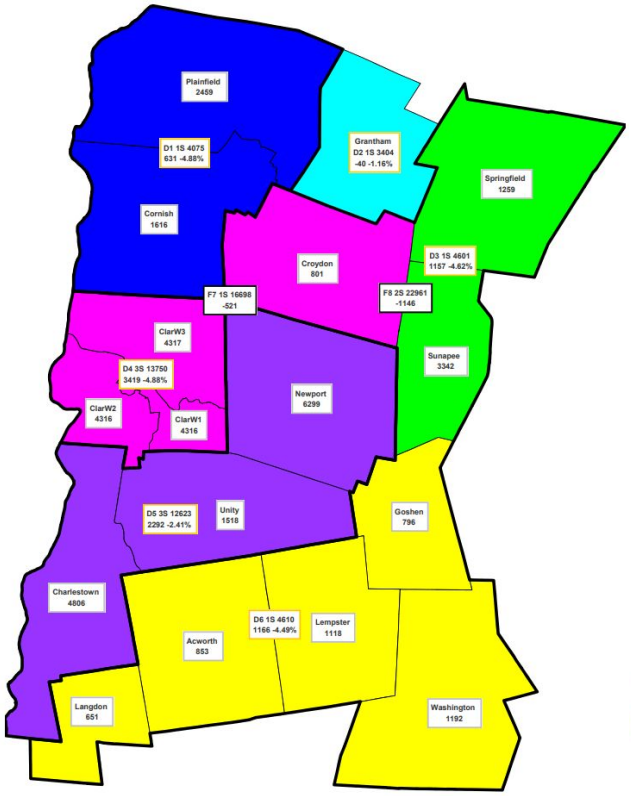


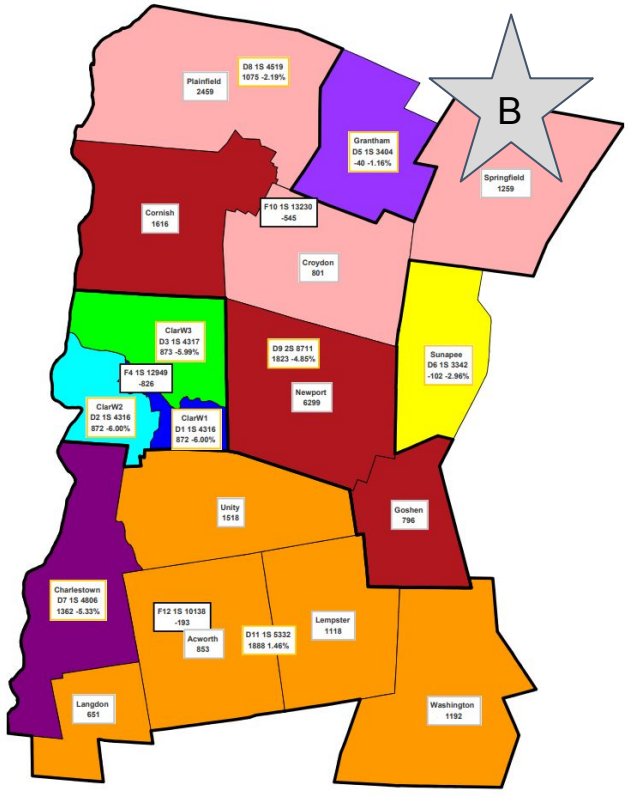


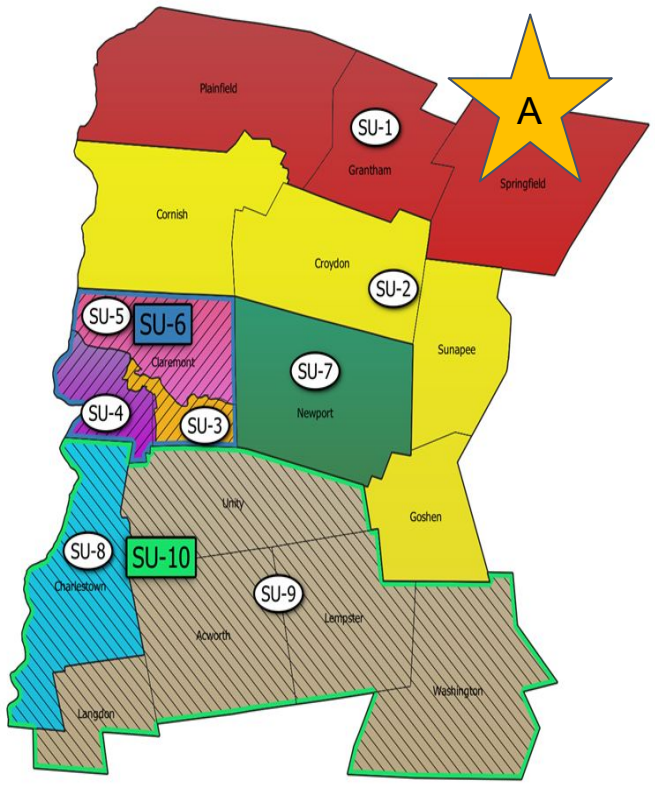


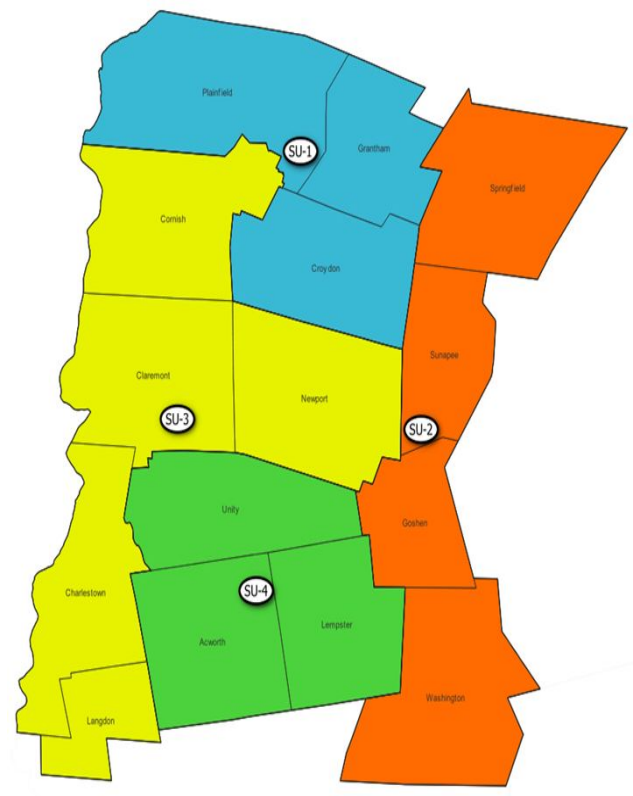
M-A-T 15% Deviation maps goes to -8.2%, but reduces violations while keeping 4 wards in Somersworth together. Strafford, Farmington, & Milton get own district.

Strafford County	Democrats	Republicans	Map-a-Thon 15% Dev. ★	Map-a-Thon ★
Deviation	-4.94% to 4.91% (9.85%)	-4.20% to 4.97% (9.16%)	-8.20% to 4.84% (13.04%)	-4.94% to 4.91% (9.85%)
# Violations	4	6	2	3
# Towns/Wards in Largest Non-Float District	6	6	2	6
Largest # Reps in a Non-Floterial District	4	4	5	5
# Towns/Wards in Largest Floterial District	3	5	5	4
Largest # Reps in a Floterial District	2	3	3	2
Lean of Seats(Lean D/Lean R/Competitive)	20/7/11	20/8/10	20/7/11	20/7/11









M-A-T's -8.55% version reduces violations to 0, has better contiguity, keeps Claremont together, and gives dedicated district to Newport.

Sullivan County	Democrats	Republicans	Map-a-Thon 15% Dev	Map-a-Thon
Deviation	-4.88% to -1.16% (3.73%)	-6.00% to 1.46% (7.47%)	-8.55% to 3.40% (11.95%)	-4.46% to 1.31% (5.77%)
# Violations	3	1	0	3
# Towns/Wards in Largest Non-Float District	5	5	5	5
Largest # Reps in a Non-Floterial District	3	2	2	8
# Towns/Wards in Largest Floterial District	11	6	6	N/A
Largest # Reps in a Floterial District	2	1	1	N/A
Lean of Seats(Lean D/Lean R/Competitive)	2/6/5	1/5/7	2/5/6	2/3/8

Map-a-Thon Proposed Maps

Map-a-thon map summary

County	Total Number of Seats	Averaged 2020 EC & NH Senate Elections		Partisan Lean Proposed NH House Seats					
		Dem (% of votes)	Rep (% of votes)	Lean Dem (# seats)	Lean Dem (% seats)	Lean Rep (# seats)	Lean Rep (% seats)	Competitive (# seats)	Competitive (% seats)
Belknap	18	39.6%	60.4%	0	0.0%	18	100.0%	0	0.0%
Carroll	15	41.1%	58.9%	0	0.0%	10	66.7%	5	33.3%
Cheshire	22	56.2%	43.8%	13	59.1%	3	13.6%	6	27.3%
Coos	9	41.5%	58.5%	0	0.0%	5	55.6%	4	44.4%
Grafton	26	57.7%	42.3%	12	46.2%	5	19.2%	9	34.6%
Hillsborough	123	49.7%	50.3%	34	27.6%	28	22.8%	61	49.6%
Merrimack	45	50.4%	49.6%	19	42.2%	16	35.6%	10	22.2%
Rockingham	91	46.5%	53.5%	20	22.0%	63	69.2%	8	8.8%
Strafford	38	54.6%	45.4%	20	52.6%	7	18.4%	11	28.9%
Sullivan	13	47.2%	52.8%	2	15.4%	5	38.5%	6	61.5%
Total	**400**	**49.3%**	**50.7%**	**120**	**30.0%**	**160**	**40.0%**	**120**	**30.0%**

Democrat Proposed Maps

Democrat map summary

County	Total Number of Seats	Averaged 2020 EC & NH Senate Elections		Partisan Lean Proposed NH House Seats					
		Dem (% of votes)	Rep (% of votes)	Lean Dem (# seats)	Lean Dem (% seats)	Lean Rep (# seats)	Lean Rep (% seats)	Competitive (# seats)	Competitive (% seats)
Belknap	18	39.6%	60.4%	0	0.0%	14	77.8%	4	22.2%
Carroll	15	41.1%	58.9%	0	0.0%	10	66.7%	5	33.3%
Cheshire	22	56.2%	43.8%	11	50.0%	1	4.5%	10	45.5%
Coos	9	41.5%	58.5%	0	0.0%	5	55.6%	4	44.4%
Grafton	26	57.7%	42.3%	13	50.0%	6	23.1%	7	26.9%
Hillsborough	123	49.7%	50.3%	33	26.8%	30	24.4%	60	48.8%
Merrimack	45	50.4%	49.6%	13	28.9%	17	37.8%	15	33.3%
Rockingham	91	46.5%	53.5%	19	20.9%	65	71.4%	7	7.7%
Strafford	38	54.6%	45.4%	20	52.6%	7	18.4%	11	28.9%
Sullivan	13	47.2%	52.8%	2	15.4%	6	46.2%	5	38.5%
Total	**400**	**49.3%**	**50.7%**	**111**	**27.8%**	**161**	**40.3%**	**128**	**32.0%**

Republican Proposed Maps

Republican map summary

County	Total Number of Seats	Averaged 2020 EC & NH Senate Elections		Partisan Lean Proposed NH House Seats					
		Dem (% of votes)	Rep (% of votes)	Lean Dem (# seats)	Lean Dem (% seats)	Lean Rep (# seats)	Lean Rep (% seats)	Competitive (# seats)	Competitive (% seats)
Belknap	18	39.6%	60.4%	0	0.0%	18	100.0%	0	0.0%
Carroll	15	41.1%	58.9%	0	0.0%	10	66.7%	5	33.3%
Cheshire	22	56.2%	43.8%	13	59.1%	4	18.2%	5	22.7%
Coos	9	41.5%	58.5%	0	0.0%	5	55.6%	4	44.4%
Grafton	26	57.7%	42.3%	13	50.0%	7	26.9%	6	23.1%
Hillsborough	123	49.7%	50.3%	36	29.3%	36	29.3%	51	41.5%
Merrimack	45	50.4%	49.6%	17	37.8%	20	44.4%	8	17.8%
Rockingham	91	46.5%	53.5%	20	22.0%	63	69.2%	8	8.8%
Strafford	38	54.6%	45.4%	20	52.6%	8	21.1%	10	26.3%
Sullivan	13	47.2%	52.8%	1	7.7%	5	38.5%	7	53.8%
Total	**400**	**49.3%**	**50.7%**	**120**	**30.0%**	**176**	**44.0%**	**104**	**26.0%**

Map-a-Thon Choice A Summary

Choice A summary

County	Total Number of Seats	Averaged 2020 EC & NH Senate Elections		Partisan Lean Proposed NH House Seats					
		Dem (% of votes)	Rep (% of votes)	Lean Dem (# seats)	Lean Dem (% seats)	Lean Rep (# seats)	Lean Rep (% seats)	Competitive (# seats)	Competitive (% seats)
Belknap	18	39.6%	60.4%	0	0.0%	14	77.8%	4	22.2%
Carroll	15	41.1%	58.9%	0	0.0%	10	66.7%	5	33.3%
Cheshire	22	56.2%	43.8%	11	50.0%	1	4.5%	10	45.5%
Coos	9	41.5%	58.5%	0	0.0%	5	55.6%	4	44.4%
Grafton	26	57.7%	42.3%	12	46.2%	5	19.2%	9	34.6%
Hillsborough	123	49.7%	50.3%	34	27.6%	28	22.8%	61	49.6%
Merrimack	45	50.4%	49.6%	13	28.9%	17	37.8%	15	33.3%
Rockingham	91	46.5%	53.5%	20	22.0%	63	69.2%	8	8.8%
Strafford	38	54.6%	45.4%	20	52.6%	7	18.4%	11	28.9%
Sullivan	13	47.2%	52.8%	2	15.4%	5	38.5%	6	46.2%
Total	**400**	**49.3%**	**50.7%**	**112**	**28.0%**	**155**	**38.8%**	**133**	**33.3%**

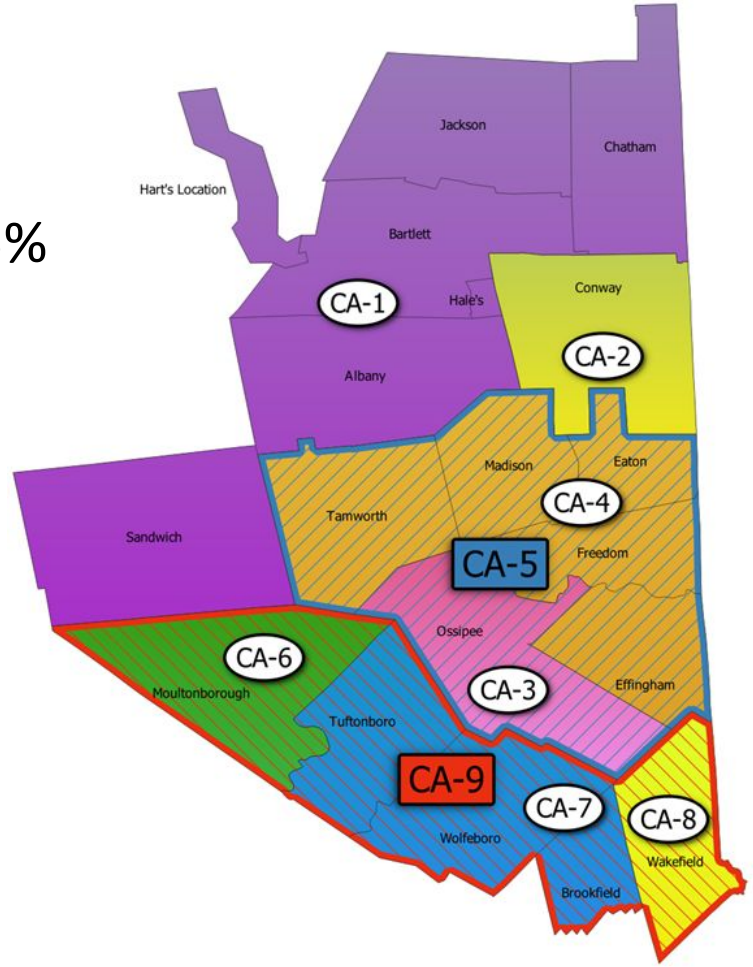
Map-a-Thon Choice B Summary

Choice B summary

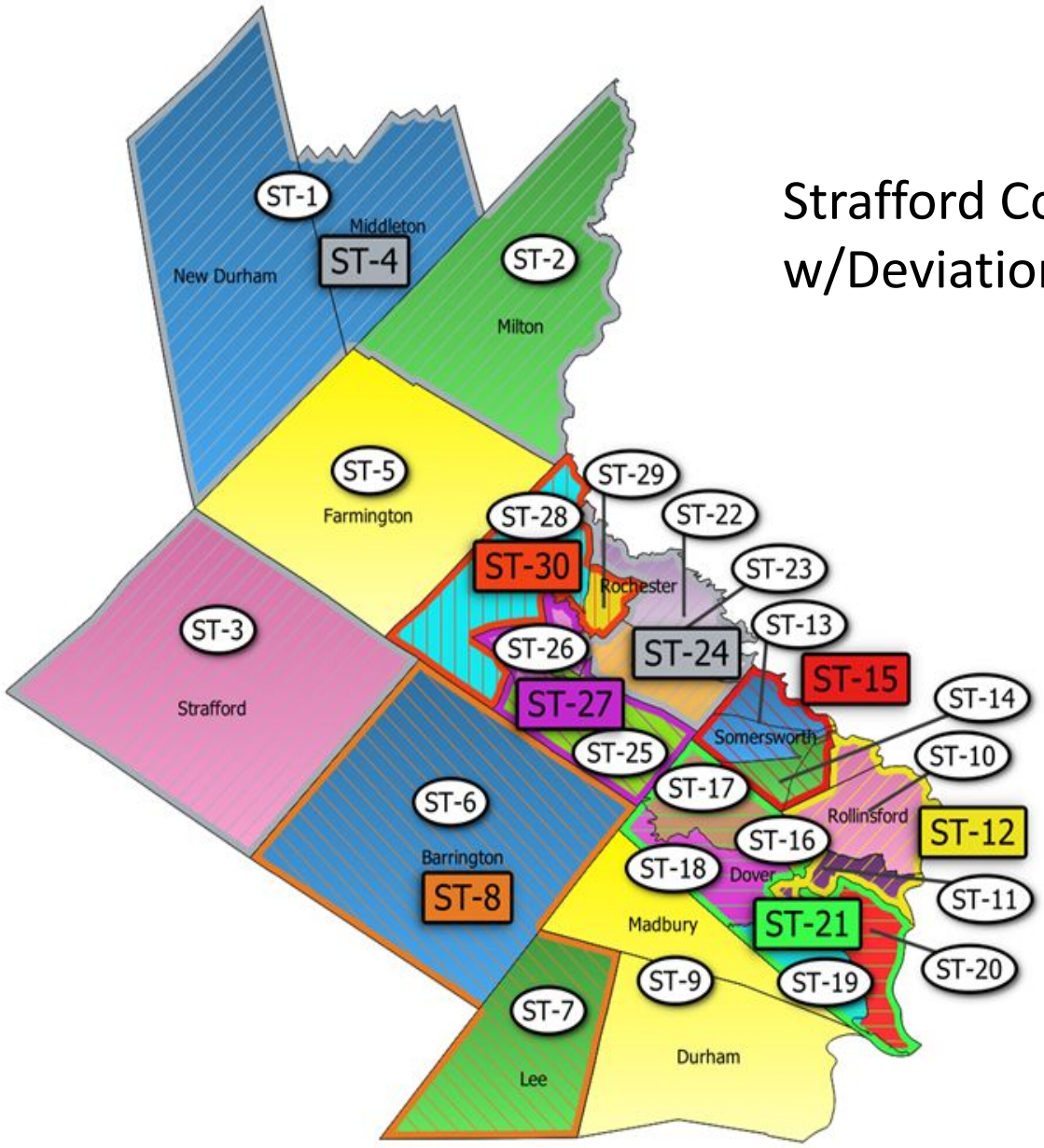
County	Total Number of Seats	Averaged 2020 EC & NH Senate Elections		Partisan Lean Proposed NH House Seats					
		Dem (% of votes)	Rep (% of votes)	Lean Dem (# seats)	Lean Dem (% seats)	Lean Rep (# seats)	Lean Rep (% seats)	Competitive (# seats)	Competitive (% seats)
Belknap	18	39.6%	60.4%	0	0.0%	14	77.8%	4	22.2%
Carroll	15	41.1%	58.9%	0	0.0%	10	66.7%	5	33.3%
Cheshire	22	56.2%	43.8%	11	50.0%	1	4.5%	10	45.5%
Coos	9	41.5%	58.5%	0	0.0%	5	55.6%	4	44.4%
Grafton	26	57.7%	42.3%	12	46.2%	5	19.2%	9	34.6%
Hillsborough	123	49.7%	50.3%	34	27.6%	28	22.8%	61	49.6%
Merrimack	45	50.4%	49.6%	13	28.9%	17	37.8%	15	33.3%
Rockingham	91	46.5%	53.5%	20	22.0%	63	69.2%	8	8.8%
Strafford	38	54.6%	45.4%	20	52.6%	7	18.4%	11	28.9%
Sullivan	13	47.2%	52.8%	2	15.4%	3	23.1%	8	61.5%
Total	**400**	**49.3%**	**50.7%**	**112**	**28.0%**	**153**	**38.3%**	**135**	**33.8%**

County	Dem Violations	Rep Violations	Map Violations	Map Dev-15 Violations	Combo Violations	A Violations	B Violations	Choice A	Choice B
Belknap	6	8	5	-	-	6	6	Dem	Dem
Carroll	3	4	3	1	-	1	3	Map Dev-15	Map
Cheshire	3	7	4	-	-	3	3	Dem	Dem
Coos	0	1	0	-	-	0	0	Dem/Map	Dem/Map
Grafton	5	5	3	-	-	3	3	Map	Map
Hillsborough	5	7	6	-	4	4	4	Combo	Combo
Merrimack	5	8	6	-	-	5	5	Dem	Dem
Rockingham	17	14	12	-	10	10	10	Combo	Combo
Strafford	4	6	3	2	-	2	3	Map Dev-15	Map
Sullivan	3	1	3	0	-	0	1	Map Dev-15	Rep
Total	51	61	45			34	38		

Carroll County
w/Deviations Under -5%



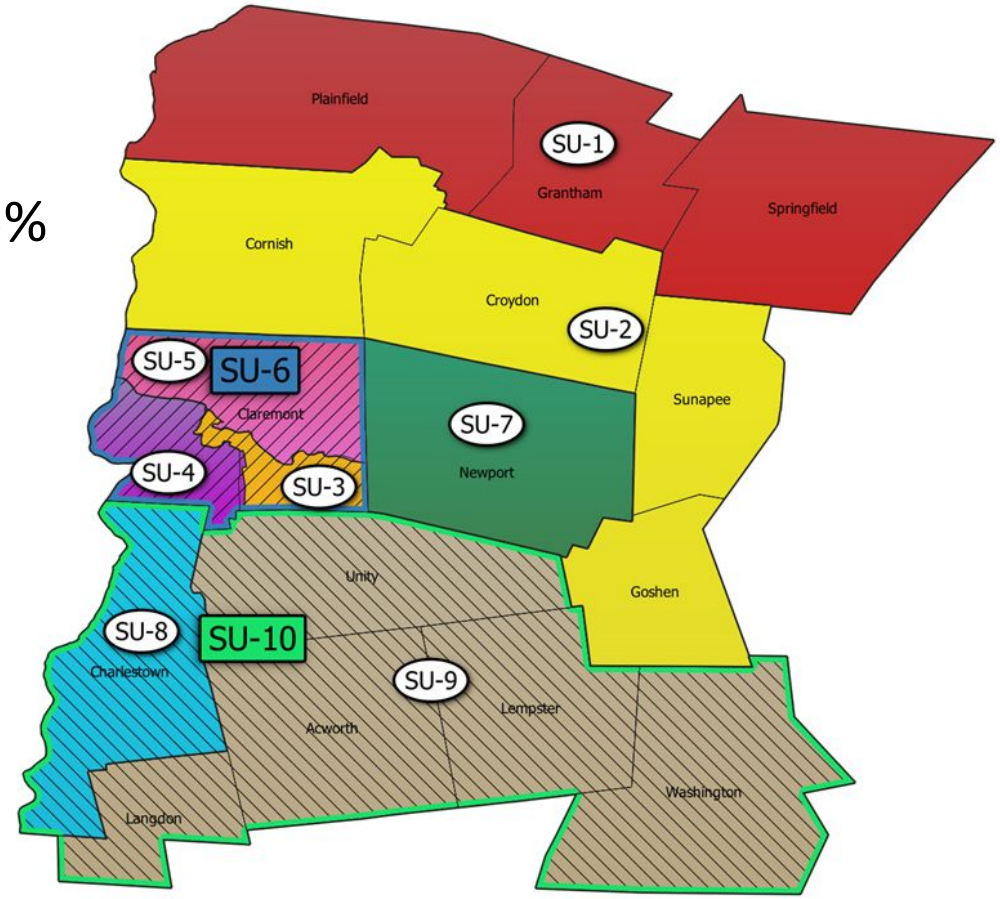
Carroll County Proposal							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
CA-1	6,994	2			Chatham, Jackson, Bartlett, Hart's Location, Hales Location, Albany, Sandwich	1.54%	
CA-2	9,822	3			Conway	-4.93%	
CA-3	4,372	1	CA-5	1	Ossipee	-4.05%	
CA-4	9,162	2			Tamworth, Madison, Eaton, Freedom, Effingham	-0.62%	
CA-6	4,918	1	CA-9	2	Moultonborough	-4.66%	
CA-7	9,638	2			Brookfield, Tuftonboro, Wolfeboro	-5.95%	Wolfeboro
CA-8	5,201	1			Wakefield	-1.06%	
Total	44,906	15				7.49%	1



Strafford County w/Deviations Under -5%

Strafford County Proposal							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
ST-1	4,516	1	ST-4	1	Middleton, New Durham	-2.24%	
ST-2	4,482	1			Milton	-2.79%	
ST-3	4,230	1			Strafford	-6.93%	
ST-5	6,722	2			Farmington	-2.40%	
ST-6	9,326	2	ST-8	1	Barrington	1.29%	
ST-7	4,520	1			Lee	-1.05%	
ST-9	17,408	5			Durham, Madbury	1.10%	Durham
ST-10	4,968	1	ST-12	1	Rollinsford, Somersworth Ward 5*	-2.30%	Somersworth
ST-11	5,457	1			Dover Ward 2*	4.01%	
ST-13	4,742	1	ST-15	1	Somersworth Wards 1-2*	-8.20%	
ST-14	4,742	1			Somersworth Wards 3-4*	-8.20%	
ST-16	5,457	1	ST-21	3	Dover Ward 1*	-0.97%	
ST-17	5,457	1			Dover Ward 3*	-0.97%	
ST-18	5,457	1			Dover Ward 4*	-0.97%	
ST-19	5,457	1			Dover Ward 5*	-0.97%	
ST-20	5,456	1			Dover Ward 6*	-0.98%	
ST-22	5,415	1	ST-24	1	Rochester Ward 1*	4.83%	
ST-23	5,415	1			Rochester Ward 2*	4.83%	
ST-25	5,415	1	ST-27	1	Rochester Ward 3*	4.83%	
ST-26	5,415	1			Rochester Ward 4*	4.83%	
ST-28	5,416	1	ST-30	1	Rochester Ward 5*	4.84%	
ST-29	5,416	1			Rochester Ward 6*	4.84%	
Total	130,889	38				13.05%	2
*Populations used are assumed to be ideal populations for wards							

Sullivan County w/Deviations Under -5%



Sullivan County Proposal							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
SU-1	7,122	2			Plainfield, Grantham, Springfield	3.40%	
SU-2	6,555	2			Cornish, Croydon, Sunapee, Goshen	-4.83%	
SU-3	4,316	1	SU-6	1	Claremont Ward 1*	-6.00%	
SU-4	4,316	1			Claremont Ward 2*	-6.00%	
SU-5	4,317	1			Claremont Ward 3*	-5.99%	
SU-7	6,299	2			Newport	-8.55%	
SU-8	4,806	1	SU-10	1	Charlestown	-5.33%	
SU-9	5,332	1			Acworth, Langdon, Lempster, Unity, Washington	1.46%	
Total	43,063	13				11.95%	0
*Populations used are assumed to be ideal populations for wards							

About the Map-a-Thon

https://www.opendemocracynh.org/nh_map_a_thon

M-A-T Review of NH House Maps:

https://www.opendemocracyaction.org/nov_7_review_special_committee_maps

EXHIBIT F

Analysis of Proposed Congressional Map (HB52) w/o Amendment, & NH House Maps (HB50) with Senate's Amendment 2022-0339s

January 28, 2022

Map-a-Thon
Granite Staters Drawing Fair Voting Maps

Map-a-Thon Glossary

Community of Interest (COI) Communities of interest can take many forms, but generally refer to groups of people united by shared interests. In the context of redistricting, communities of interest are those communities that share policy concerns, such as similar economic interests, a shared school system, or common resources. Our maps use boundaries of shared high school districts, shared water systems, and shared police and fire protection -- in addition to the boundaries of towns and city wards-- to inform the redistricting process. More information about communities of interest can be found by visiting NYU's Brennan Center

Compactness Compactness helps us measure the cohesiveness of a district. When drawing districts to represent a region, it is best practice to strive for a compact district, since non-compact districts are less likely to share communities of interests (2010's Executive Council & some 2020 NH Senate districts), and the wider area makes it harder for representatives to understand and serve the needs of constituents. Compactness is also used as a check against gerrymandering (see below), since gerrymandered districts tend to not be compact. The compactness scores reported in our analysis come from the DRA compactness calculation described here:

Contiguity Contiguity describes how municipalities in a voting district are geographically connected to each other. Contiguous districts are a requirement for all legislative districts in New Hampshire. This definition is sometimes stretched -- quite literally -- with the towns of Meredith and Gilford only connected in the middle of Lake Winnipesaukee, the towns of Strafford and New Durham connected in an inaccessible point in the woods, and the 2010 floterial district, Grafton 9, for which the elected rep has to travel out of the district to get to constituents on the other side of the district.

Dave's Redistricting Application (DRA) Dave's Redistricting Application, hosted at https://davesredistricting.org is a free online tool for creating, viewing, sharing, and analyzing redistricting maps. The mission of Dave's Redistricting is to, "empower civic organizations and citizen activists to advocate for fair congressional and legislative districts and increased transparency in the redistricting process." Map-a-Thon's maps and most supporting data are located there for public inspection.

Deviation Deviation refers to the degree to which districts have equal population. Ideally, every representative or other elected official in proportional representation will represent the same number of people, but a small amount of flexibility --deviation-- is permissible to account for unequal population distributions and compliance with other laws, such as the 1965 Voting Rights Act or the New Hampshire Constitution's mandate to keep town boundaries intact, and NH Supreme Court Rulings

Floterial District A legislative district that includes several separate Non-Floterial districts. This district "Floats" over the other districts. This method is only used by two states, New Hampshire and Wyoming, and has never been tested in the U.S. Supreme Court.

Gerrymandering Gerrymandering is the practice of drawing district boundaries for partisan advantage. This leads to uncompetitive general elections and districts oriented toward party agendas rather than local interests. Gerrymandered districts often connect regions with little in common, leading to the splitting of cities, counties, and other communities of interest. The leading example of this in New Hampshire is 2010's Executive Council 2 and certain NH Senate districts

Splitting Because our maps are drawn with the goal of avoiding gerrymandering while keeping communities of interest intact, many parts of our analysis examine the number of communities of interest divided, or "splits," contained within a district. The ideal map minimizes the number of districts which cross other administrative boundaries to hold communities of interest intact. Our analyses examine the number of geographical splits necessary. For example, a state senator representing the towns of Dublin and Peterborough would split county lines while keeping a school district intact. Another way of examining splitting is to weight splits by population, the approach taken in the DRA county-splitting metric.

Partisan Lean Number of seats using past election data that are likely to be either Democrat seats, Republican seats, or Competitive seats.

Violation A town that has a population over 3,444 and is eligible for its own district that does not have its own district in the corresponding map. We count one violation per town/city and not by individual wards.

Map-a-Thon
Granite Staters Drawing Fair Voting Maps

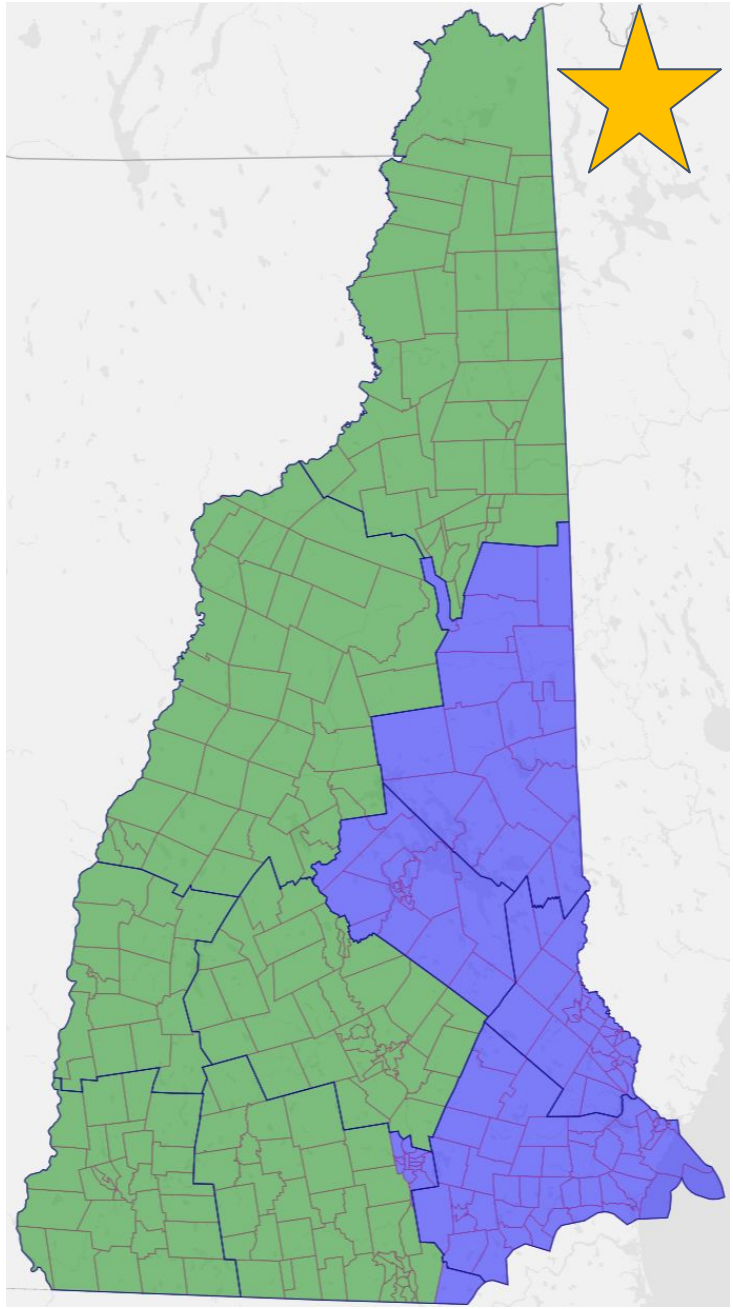
NH Congressional Map Analysis

- The Map-a-Thon Mapping & Technical team analyzed the Congressional map proposed in HB52 based on numerous factors, and compared the proposal to a new Map-a-Thon submission.
- We conclude that the proposed Republican map has been gerrymandered, with Congressional District 2 “packed” with Democrats, District 1 has been similarly “packed” with Republicans, making both Districts uncompetitive.
- Historically, this is the biggest map shift of the Congressional districts in over 140 years.
- The Map-a-Thon Citizen Mapping Project’s Mapping and Technical Team analyzed the Congressional map in detail, and also recommends its own redistricting proposal. This document summarizes our analyses with transparency and fairness.
- The Map-a-Thon team produced similar analyses for NH’s Senate, House, and Executive Council redistricting.

Map-a-Thon Proposed Congressional Map

https://davesredistricting.org/join/c7496d04-7b0c-4467-8185-f128877c6154

Map-a-Thon
Granite Staters Drawing Fair Voting Maps



Map-a-Thon Proposal

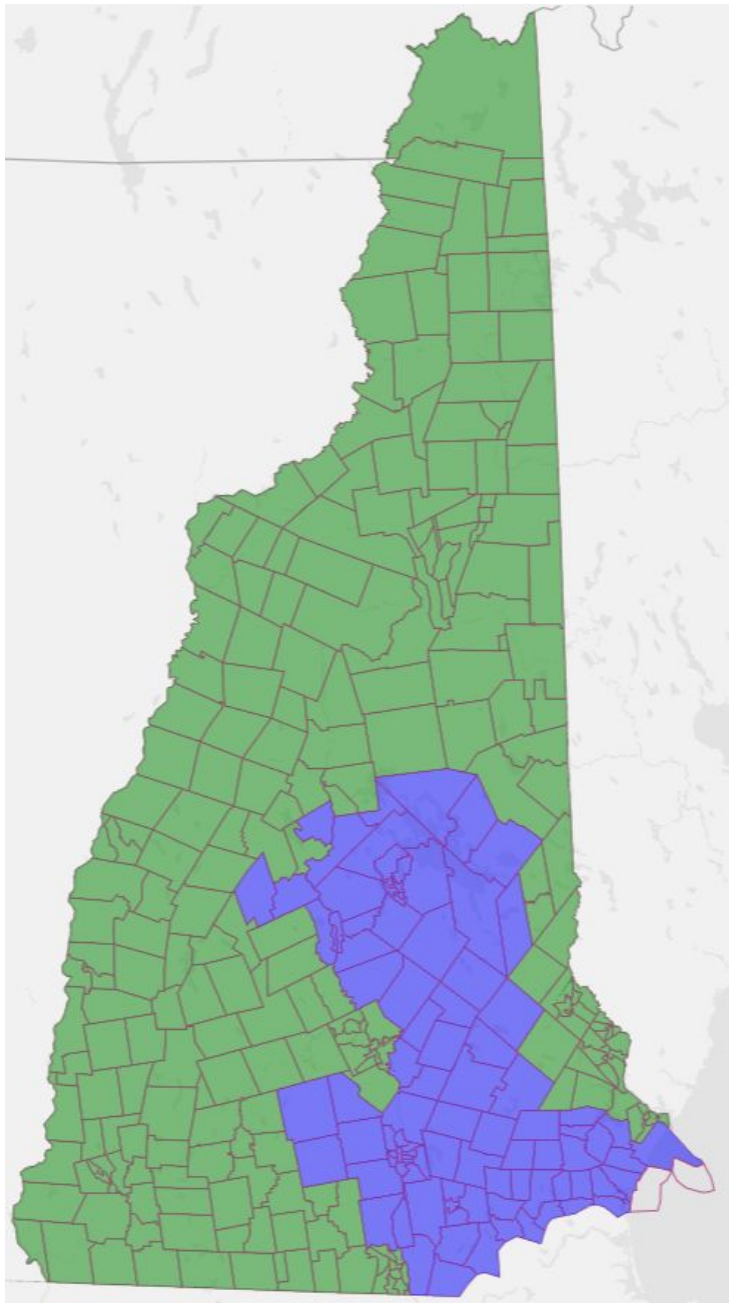
- Visually compact
- Deviation of **43**
- Keeps **9 out of 10** county boundaries intact with only Manchester and Pelham as exceptions
- Violates **only 5 SAU boundaries** (94% intact)
- Moves only **12 towns/wards**
- Very **competitive** districts
- No packing of districts
- **Follows** 140 years of precedent

Committee Proposal

- Not visually compact
- Deviation of **177**
- Breaks up **6 of 10** counties
- Violates **10 SAU boundaries**
- Moves **75 towns/wards**
- Moves **365,703** people to a new district
- **Uncompetitive** districts
- District 1 packed with Republicans and District 2 packed with Democrats
- **Breaks** 140 years of precedent

Committee Proposed Congressional Map

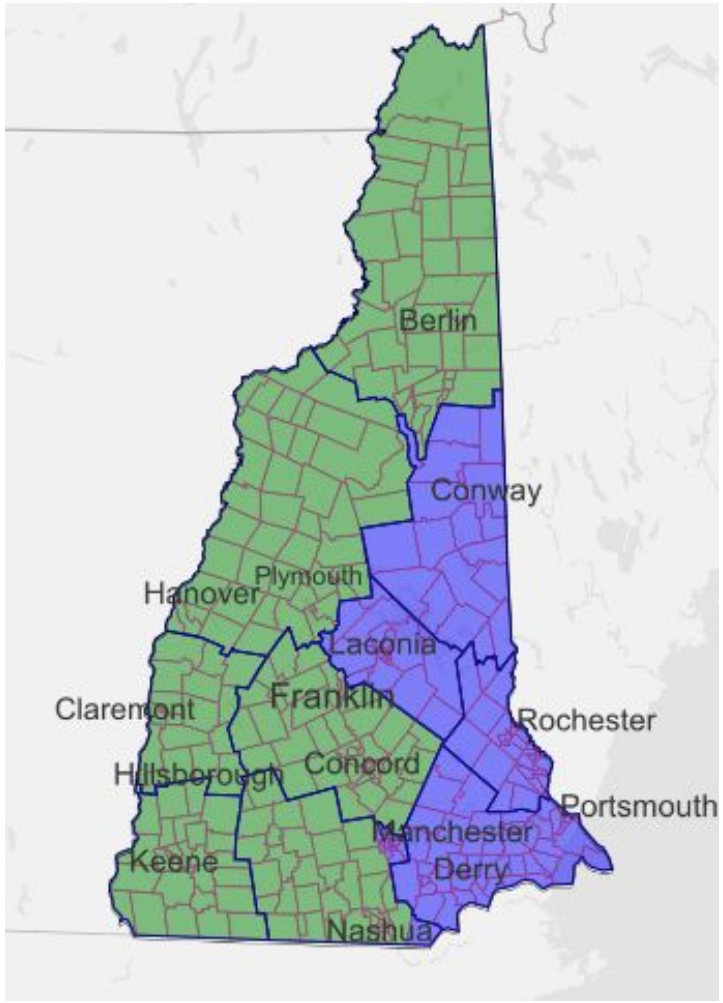
https://davesredistricting.org/join/8b9ccd94-7bf5-4cb6-9cf2-e3cdf2548544



Map-a-Thon
Granite Staters Drawing Fair Voting Maps

Community of Interest Analysis

Map-a-Thon's Jan. 13, 2022 Congressional District Compromise Map



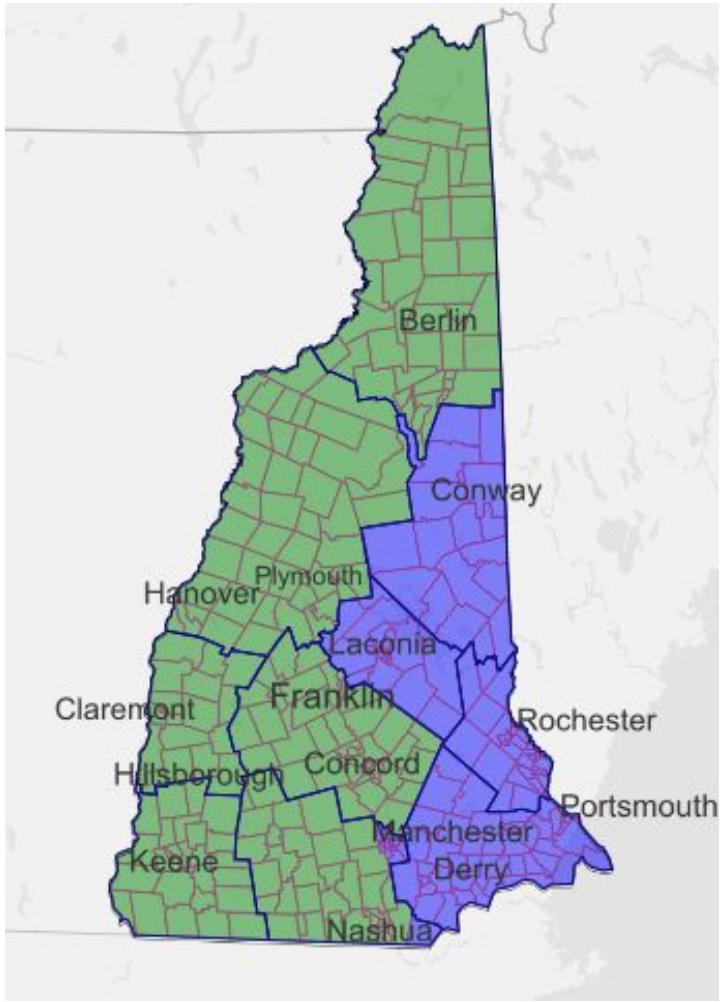
Included in chart			
Metric Description (percentages)	**Result**	**Metric Description (counts)**	**Result**
Population deviation unused	99.9%		
HS SAUs preserved	94.0%	HS SAUs split	5
Shared water/sewer preserved	90.0%	Shared water/sewer service areas split	2
Shared police and/or fire preserved	100.0%	Shared police and/or fire split	0
Cities SVI>=5 preserved	100.0%	Cities SVI>=5 split	0
Public health regions preserved	69.2%	Public health regions split	4
Regional planning preserved	44.4%	Regional planning split	5
Counties preserved	90.0%	Counties split	1
Towns/wards retained in prior districts	96.3%	Towns/wards NOT retained in prior districts	12
Population retained in prior districts	88.1%	Population NOT retained in prior districts	164496

Additional Information			
Metric Description (percentages)	**Result**	**Metric Description (counts)**	**Result**
		District contiguity (true/false)	TRUE
Towns/wards preserved	100.0%	Towns/wards split	0
Cities preserved	100.0%	Cities split	0
Competitive districts (2020 election)	50.0%	Districts NOT competitive (2020 election)	1

Map-a-Thon
Granite Staters Drawing Fair Voting Maps

Partisan Analysis

Map-a-Thon's Jan. 13, 2022 Congressional District Compromise Map



	2020 NH Senate Votes		
District	Democrat	Republican	Competitiveness
1	48.2%	51.8%	Competitive
2	51.4%	48.6%	Competitive
Total Vote Share	**49.8%**	**50.2%**	
Seats Won	**1**	**1**	

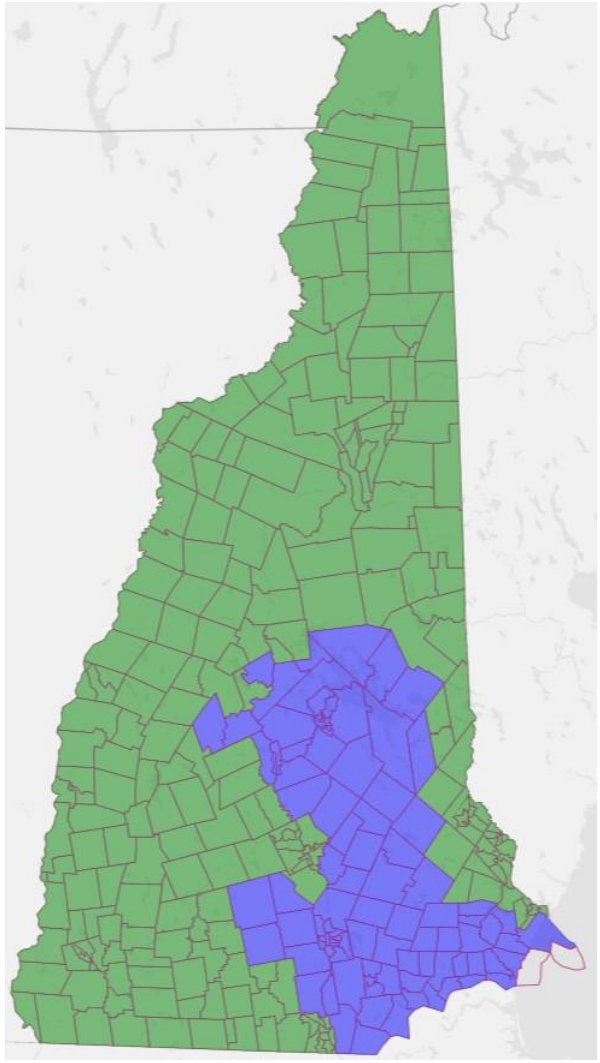
	2020 NH Executive Council Votes		
District	Democrat	Republican	Competitiveness
1	46.9%	53.1%	Competitive
2	50.5%	49.5%	Competitive
Total Vote Share	**48.7%**	**51.3%**	
Seats Won	**1**	**1**	

	2020 U.S. House Votes			
District	Democrat	Republican	Libertarian	Competitiveness
1	50.7%	46.9%	2.4%	Competitive
2	54.6%	43.1%	2.4%	Leans Democrat
Total Vote Share	**52.6%**	**45.0%**	**2.4%**	
Seats Won	**2**	**0**	**0**	

Map-a-Thon
Granite Staters Drawing Fair Voting Maps

Communities of Interest & Partisan Analysis

NH House-Approved Congressional District Map



Included in chart			
Metric Description (percentages)	**Result**	**Metric Description (counts)**	**Result**
Population deviation unused	100.0%		
HS SAUs preserved	88.0%	HS SAUs split	10
Shared water/sewer preserved	90.0%	Shared water/sewer service areas split	2
Shared police and/or fire preserved	100.0%	Shared police and/or fire split	0
Cities SVI>=5 preserved	100.0%	Cities SVI>=5 split	0
Public health regions preserved	53.8%	Public health regions split	6
Regional planning preserved	33.3%	Regional planning split	6
Counties preserved	40.0%	Counties split	6
Towns/wards retained in prior districts	75.9%	Towns/wards NOT retained in prior districts	75
Population retained in prior districts	73.5%	Population NOT retained in prior districts	365703

Additional Information			
Metric Description (percentages)	**Result**	**Metric Description (counts)**	**Result**
		District contiguity (true/false)	TRUE
Towns/wards preserved	100.0%	Towns/wards split	0
Cities preserved	100.0%	Cities split	0
Competitive districts (2020 election)	50.0%	Districts NOT competitive (2020 election)	1

	2020 U.S. House Votes			
District	**Democrat**	**Republican**	**Other**	**Competitiveness**
1	47.9%	49.7%	2.3%	Competitive
2	57.4%	40.1%	2.5%	Leans Democrat
Total Vote Share	**52.6%**	**45.0%**	**2.4%**	
Seats Won	**1**	**1**	**0**	

Map-a-Thon
Granite Staters Drawing Fair Voting Maps

NH Congressional Map Takeaways

- The Committee proposed map is a drastic shift from the current map offering few benefits outside of low population deviation. The boundaries of the districts are not visually compact, in large part due to the long neck that splits Carroll County and connects Portsmouth and Dover to the rest of District 2 (historically, a district that represents the western part of New Hampshire).
- These and other major changes suggest that the map was **drawn with a goal of securing a partisan advantage**.
- The Map-a-thon proposed map satisfies statutory criteria while prioritizing communities of interest and achieving very low deviation (0.01%), a good balance of rural and urban areas, and districts with levels of competitiveness that are similar to the current map.
- It is the responsibility of the legislature to define districts based on principles of equality rather than partisan advantage.
- Several aspects of the proposed districts appear to be **designed for partisan advantage**.

Map-a-Thon
Granite Staters Drawing Fair Voting Maps

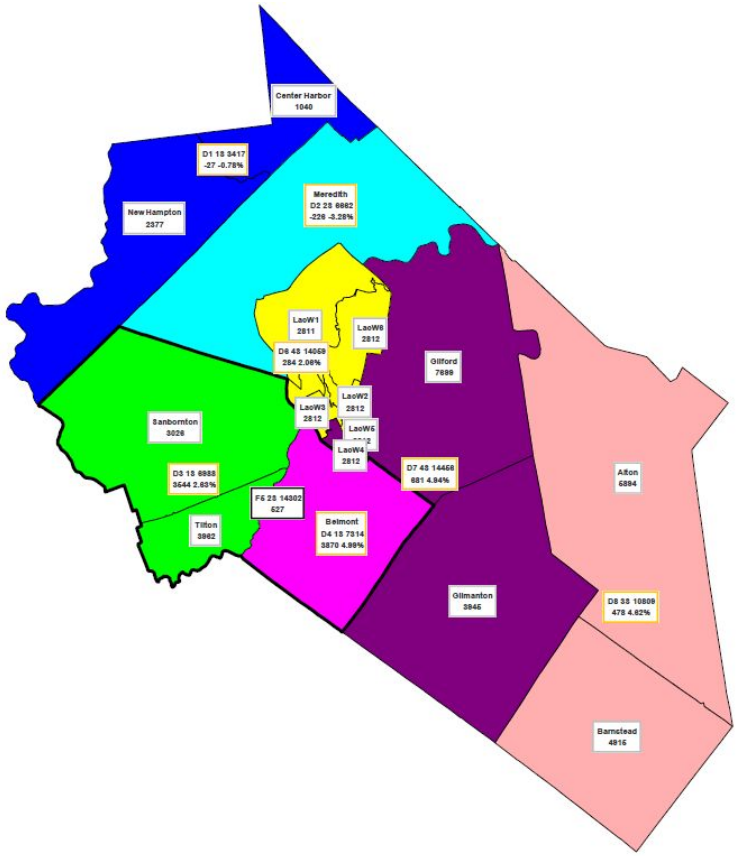
NH House Map Analysis, updated with 1/31/22 Amendment 2022-0339s

- The New Hampshire House Redistricting Committee developed redistricting proposals for the 400-member NH House of Representatives.
- On 16 November 2021, the Committee voted “Ought to Pass” on its proposal, known as HB50.
- The full House voted to pass HB50 on January 5th. To become law, the NH Senate will vote on it soon, and the Governor will then either approve or veto.
- The Map-a-Thon Citizen Mapping Project’s Mapping and Technical Team analyzed the HB50 maps in detail, and also recommends its own redistricting proposals. This document summarizes our analyses with transparency and fairness.
- The Map-a-Thon team produced similar analyses for NH’s Congressional, Senate, and Executive Council redistricting. [See all the Map-a-Thon Reports]

Map-a-Thon
Granite Staters Drawing Fair Voting Maps

Belknap County

Both maps are the same except for one Laconia ward is combined with Gilford and Gilmanton. In our recommendation this leads to 4 competitive seats in Laconia and with the Committee's proposal there are zero competitive seats. This may change when Laconia redraws it's wards.

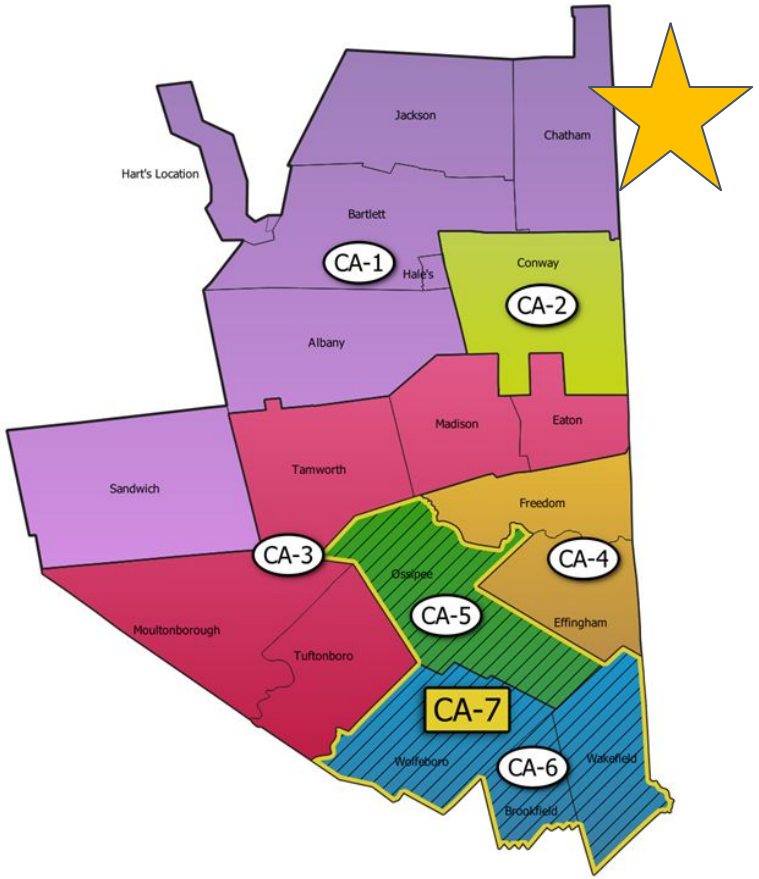


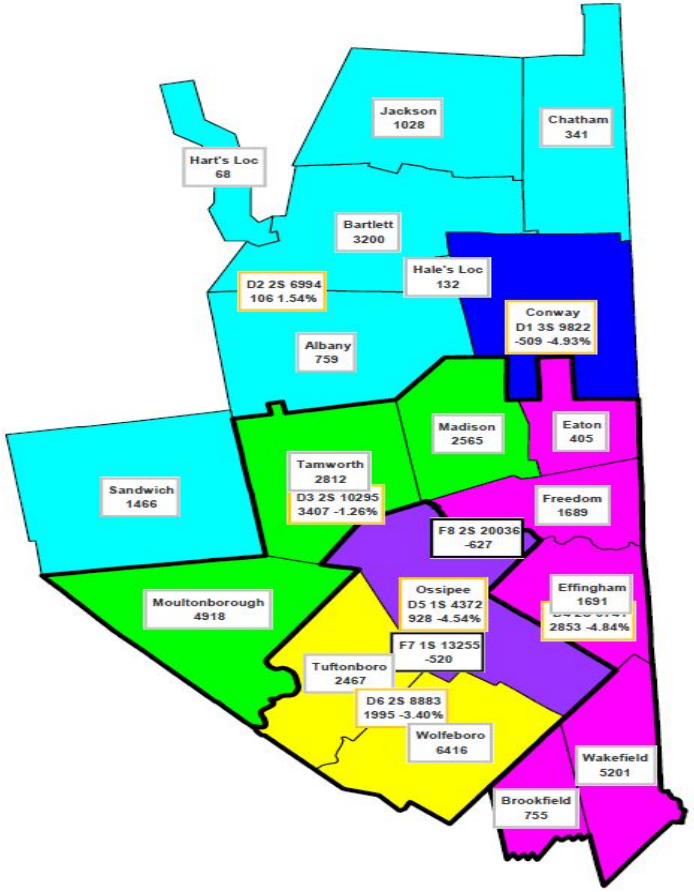
Belknap County	Map-a-Thon Recommendation	HB50 Map
Deviation	-3.28% to 4.99% (8.27%)	-3.28% to 4.99% (8.27%)
# Violations	6	6
# Towns/Wards in Largest Non-Floterial District	5	5
Largest # Reps in a Non-Floterial District	4	4
# Towns/Wards in Largest Floterial District	3	3
Largest # Reps in a Floterial District	2	2
Partisan Lean of Seats (Lean Dem/Lean Rep/Competitive)	0/14/4	0/18/0

Map-a-Thon
Granite Staters Drawing Fair Voting Maps

Carroll County

Both maps are similar, with Conway and Ossipee getting their own districts, and the district from Sandwich to Chatham being the same. The main difference is that the Committee's map creates a very large floterial district spanning from Moultonborough to Brookfield totalling 8 towns. Map-a-Thon's proposal has a smaller floterial and gives Freedom and Effingham a small district together.



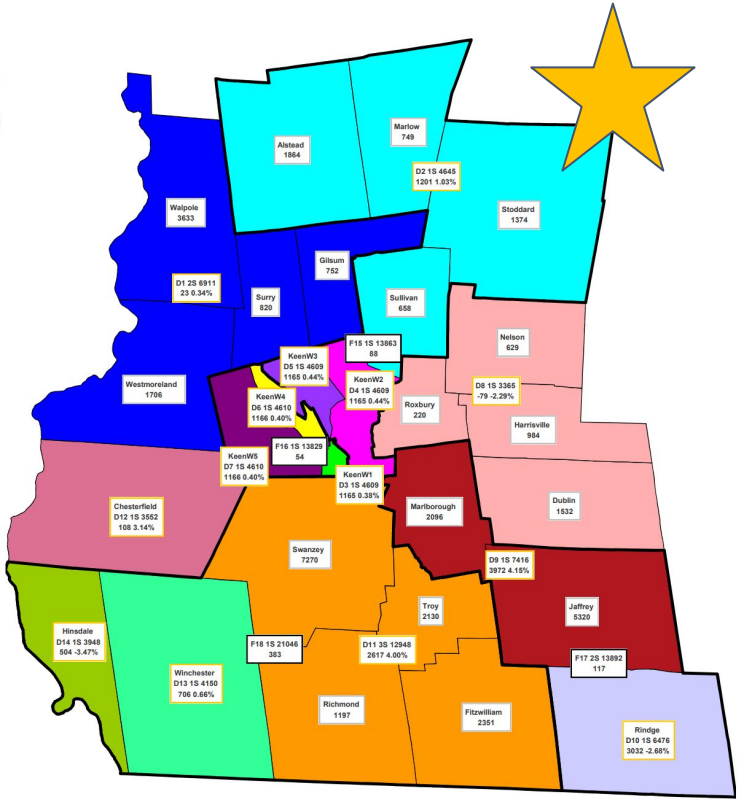


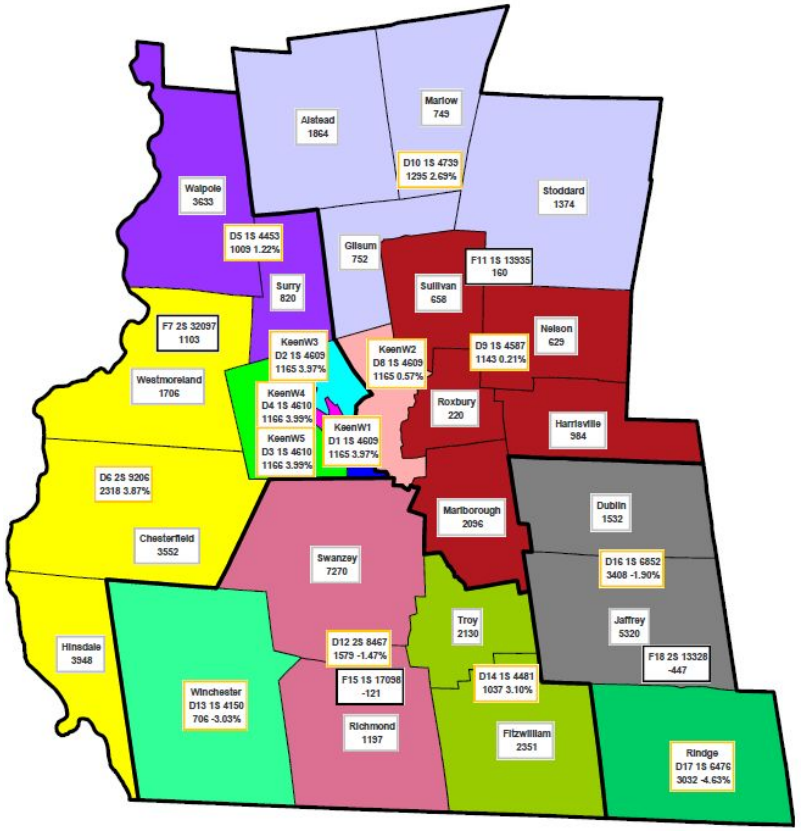
Carroll County	Map-a-Thon Recommendation	HB50 Map
Deviation	-4.93% to 1.54% (6.47%)	-4.93% to 1.54% (6.48%)
# Violations	3	3
# Towns/Wards in Largest Non-Float District	7	7
Largest # Reps in a Non-Floterial District	4	3
# Towns/Wards in Largest Floterial District	4	8
Largest # Reps in a Floterial District	1	2
Partisan Lean of Seats (Lean Dem/Lean Rep/Competitive)	0/10/5	0/10/5

Map-a-Thon
Granite Staters Drawing Fair Voting Maps

Cheshire County

The Committee's map is an improvement on the majority's initial proposal, but does not go as far as Map-a-Thon's recommended map in terms of towns getting their own district if eligible. The committee's map does give Rindge and Winchester their own district, a positive.





Map-a-Thon also separates Hinsdale and Chesterfield to give them their own district.

Cheshire County	Map-a-Thon Recommendation	HB50 Map
Deviation	-3.47% to 4.15% (7.62%)	-4.63% to 3.99% (8.62%)
# Violations	3	5
# Towns/Wards in Largest Non-Floterial District	4	5
Largest # Reps in a Non-Floterial District	3	2
# Towns/Wards in Largest Floterial District	6	10
Largest # Reps in a Floterial District	2	2
Partisan Lean of Seats (Lean Dem/Lean Rep/Competitive)	11/1/10	12/3/7

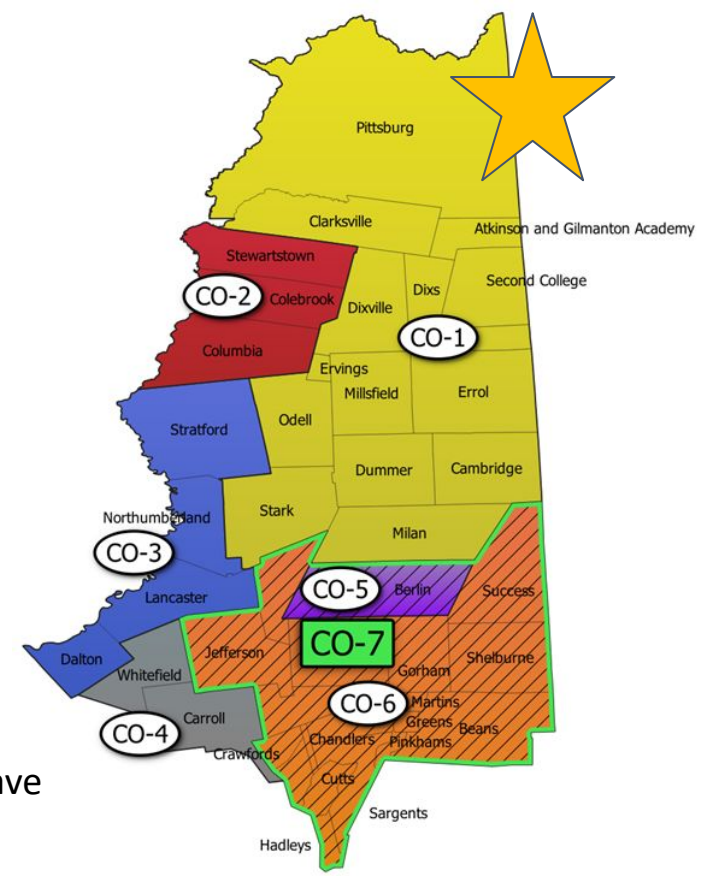
Map-a-Thon
Granite Staters Drawing Fair Voting Maps

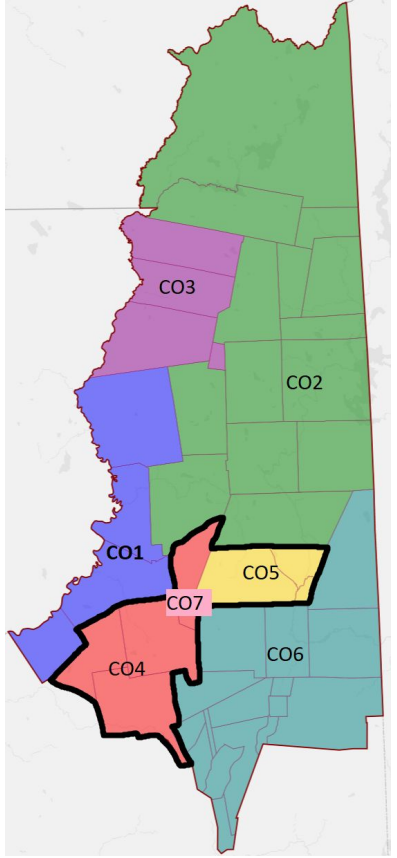
Coos County

The Senate's Amendment to Coos County is an improvement over the House's final map which did not give Berlin it's own district. It does pair Jefferson with Carroll and Whitefield which allows Republicans a better chance to win the floterial seat in Coos.

Map-a-Thon's proposal pairs Jefferson with Randolph, Gorham and Shelburne so that these towns can be paired with Berlin in a floterial which they have more in common with. Whitefield and Carroll are then paired in a small district.

Note: Map-a-Thon's proposal has a floterial with 18 towns but only 5 have populations of over 5 people with most being land grants in the White Mountains.



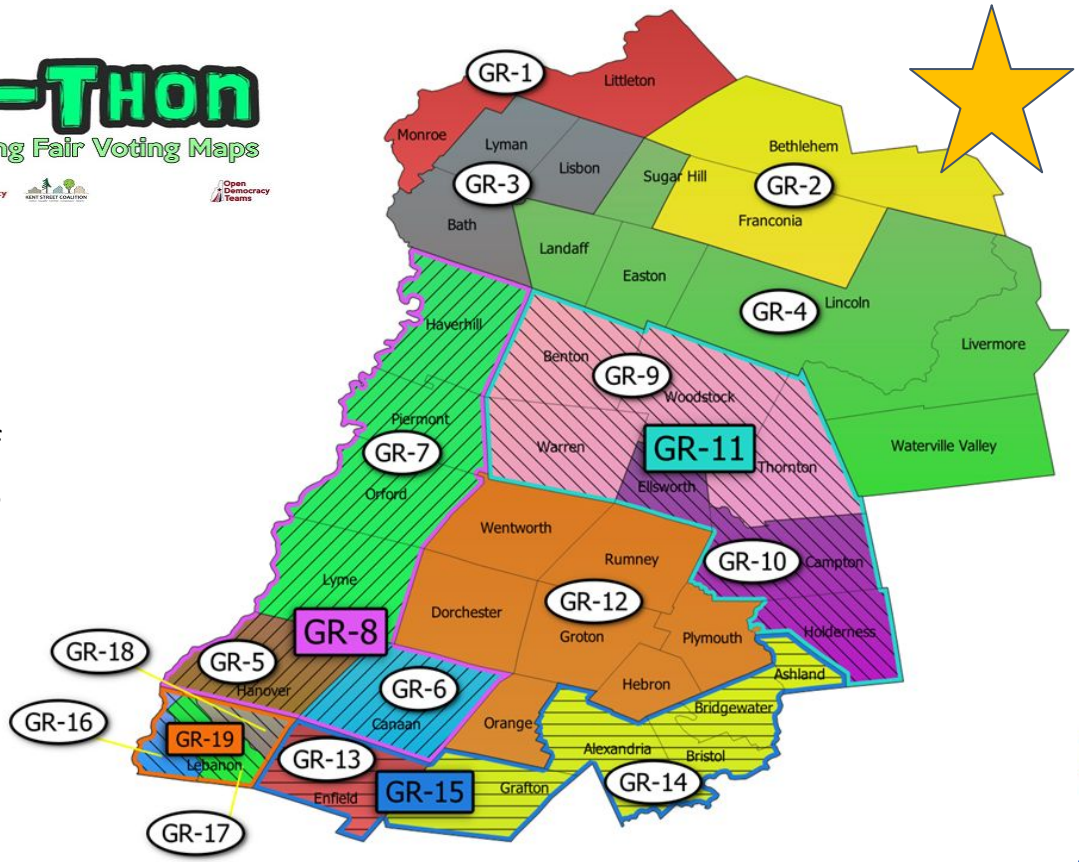


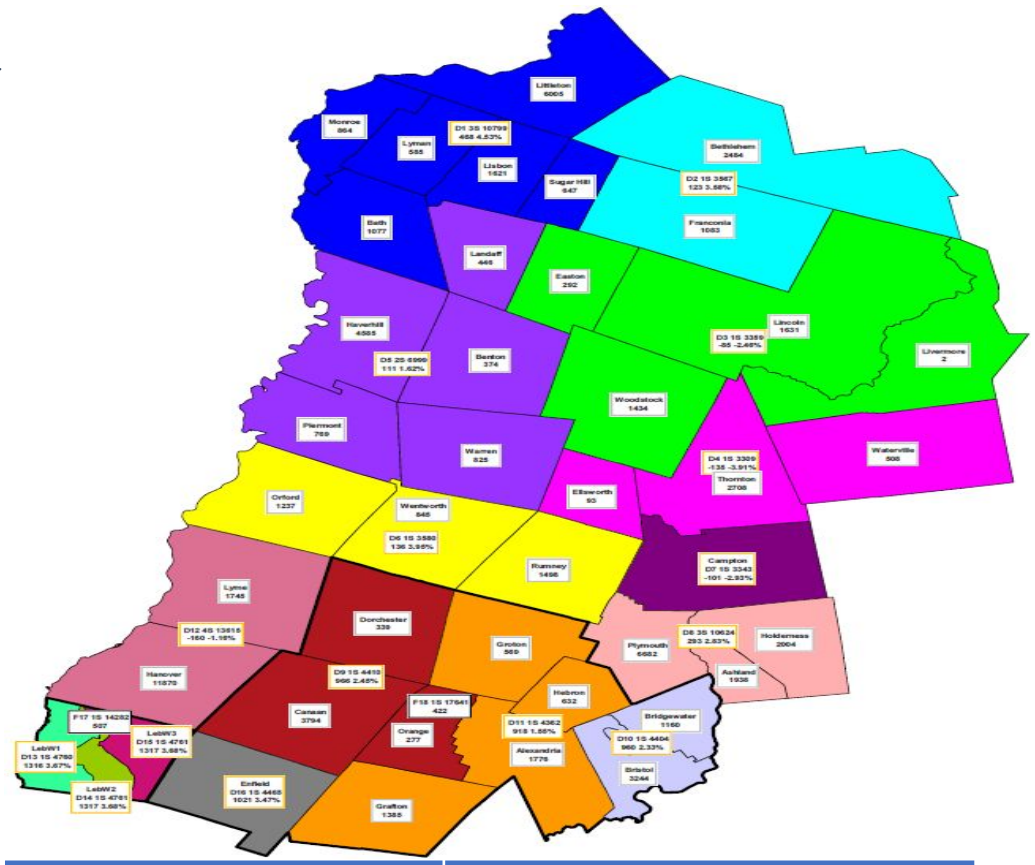
Coos County	Map-a-Thon Recommendation	HB50 Map w/ Senate Amendment
Deviation	-3.89% to 4.80% (8.68%)	-3.95% to 4.80% (8.75%)
# Violations	0	0
# Towns/Wards in Largest Non-Floterial District	17	17
Largest # Reps in a Non-Floterial District	2	2
# Towns/Wards in Largest Floterial District	18 (see note above)	5
Largest # Reps in a Floterial District	1	1
Partisan Lean of Seats (Lean Dem/Lean Rep/Competitive)	0/5/4	0/5/4

Map-a-Thon
Granite Staters Drawing Fair Voting Maps

Grafton County

The northern section of the Committee's map is reasonable with small compact districts. The southern section is where the committee's map has issues. It does not give Hanover or Canaan their own districts and creates a very large 10-town floterial district. The committee's map does have a lower deviation, but the Map-a-Thon map is a superior plan.



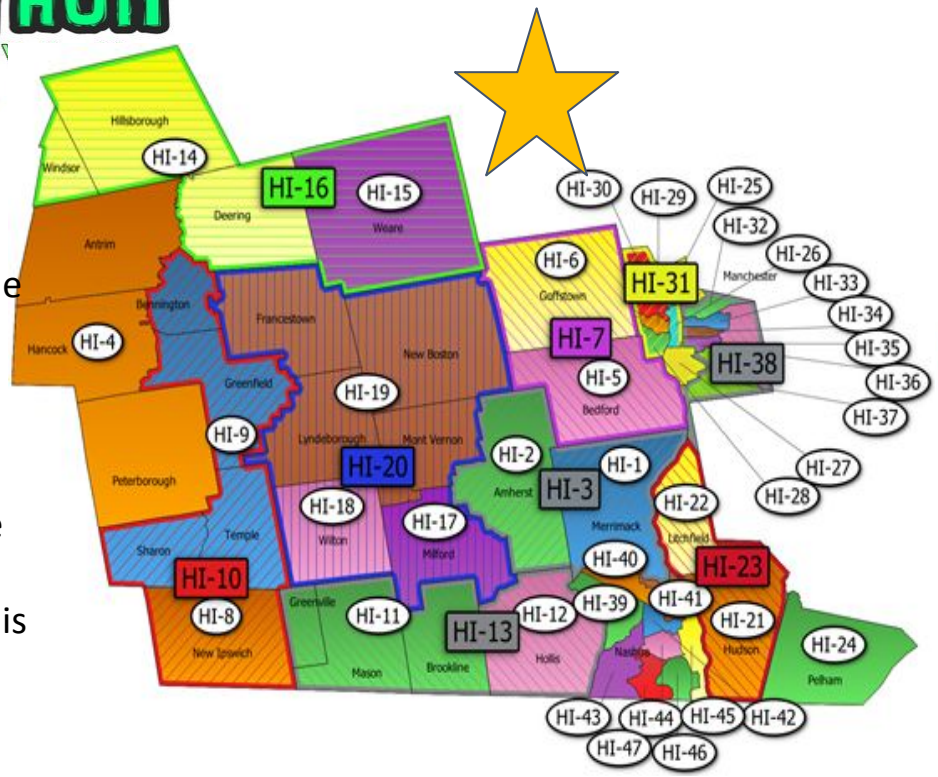


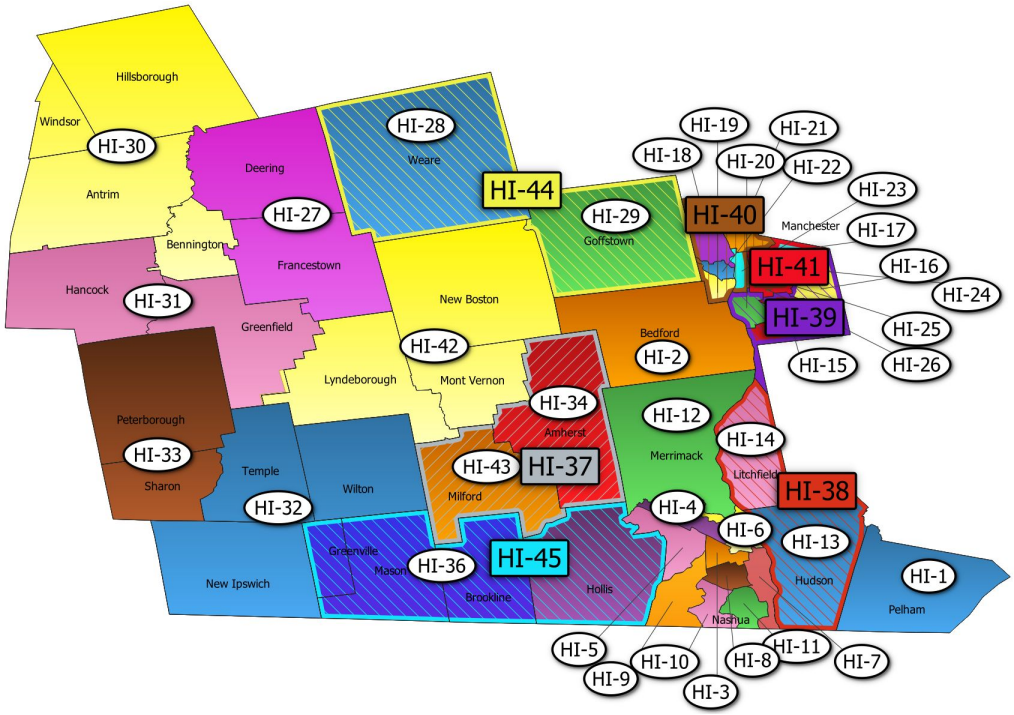
Grafton County	Map-a-Thon Recommendation	HB50 Map
Deviation	-4.87% to 4.99% (9.86% overall)	-3.91% to 4.53% (8.44% overall)
# Violations	3	5
# Towns/Wards in Largest Non-Floterial District	6	6
Largest # Reps in a Non-Floterial District	3	4
# Towns/Wards in Largest Floterial District	7	10
Largest # Reps in a Floterial District	7	1
Partisan Lean of Seats (Lean Dem/Lean Rep/Competitive)	12/5/9	13/7/6

Map-a-Thon
Granite Staters Drawing Fair

Hillsborough County

After Manchester changed their wards, the Senate had to change the proposed map in order to give Manchester one more seat. This realigned some of the rest of the county. Manchester is now aligned to give Republicans a better chance to win 6 seats rather than 4. Weare is now given its own district, which is an improvement, and the Senate amendment does have a lower deviation and smaller floterials.



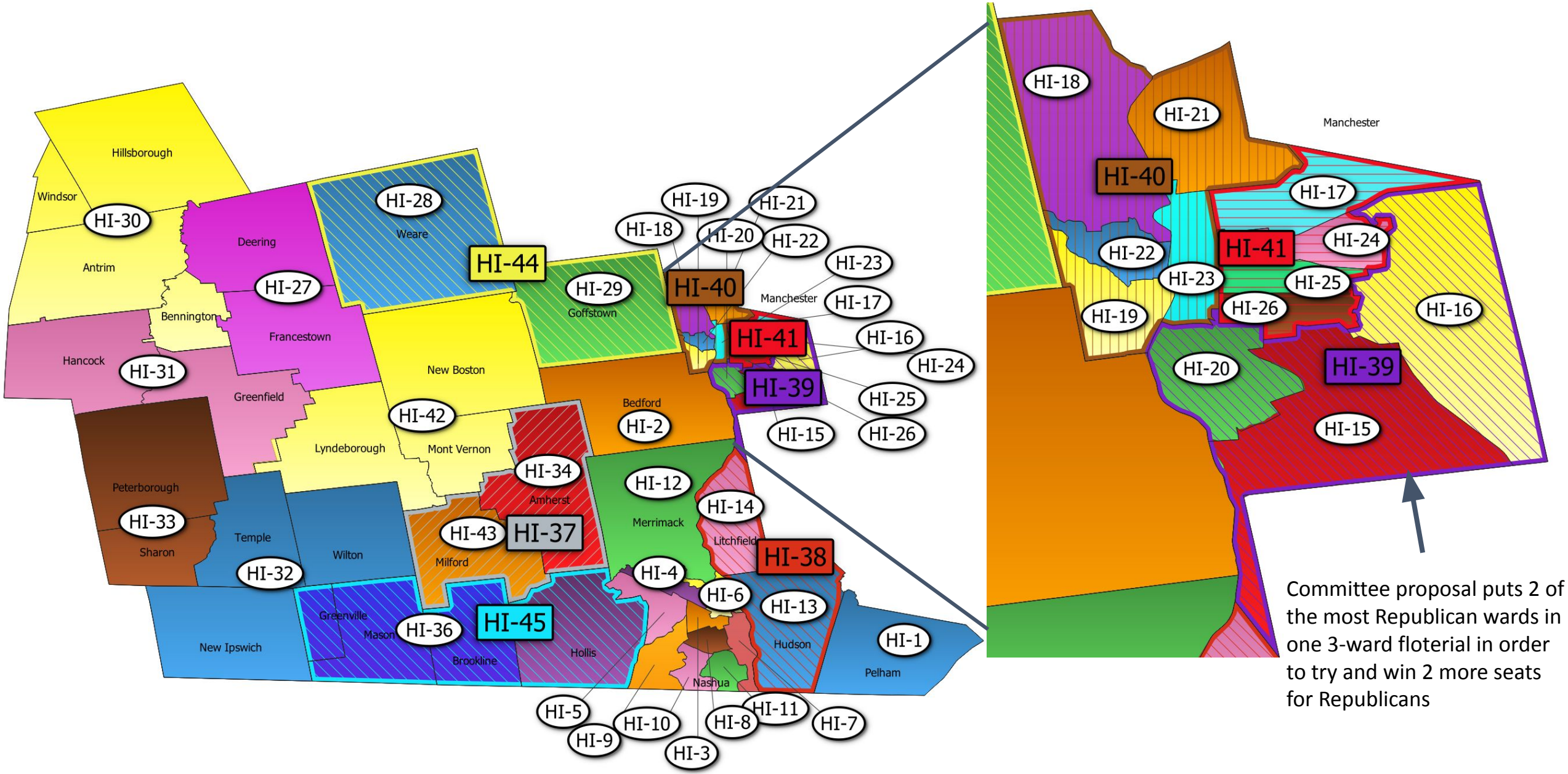


The Map-a-Thon proposal however has 2 fewer violations, with New Ipswich and Wilton being given their own districts. It also creates 8 more competitive seats than the Committee's Amendment.

Hillsborough County	Map-a-Thon Recommendation	HB50 Map w/ Senate Amendment
Deviation	-4.77% to 4.54% (9.31%)	-3.33% to 4.80% (8.13%)
# Violations	4	6
# Towns/Wards in Largest Non-Floterial District	4	4
Largest # Reps in a Non-Floterial District	10	8
# Towns/Wards in Largest Floterial District	6	5
Largest # Reps in a Floterial District	5	4
Partisan Lean of Seats (Lean Dem/Lean Rep/Competitive)	34/28/61	38/32/53

Map-a-Thon
Granite Staters Drawing Fair Voting Maps

Closer Look at the Senate Amendment for Hillsborough



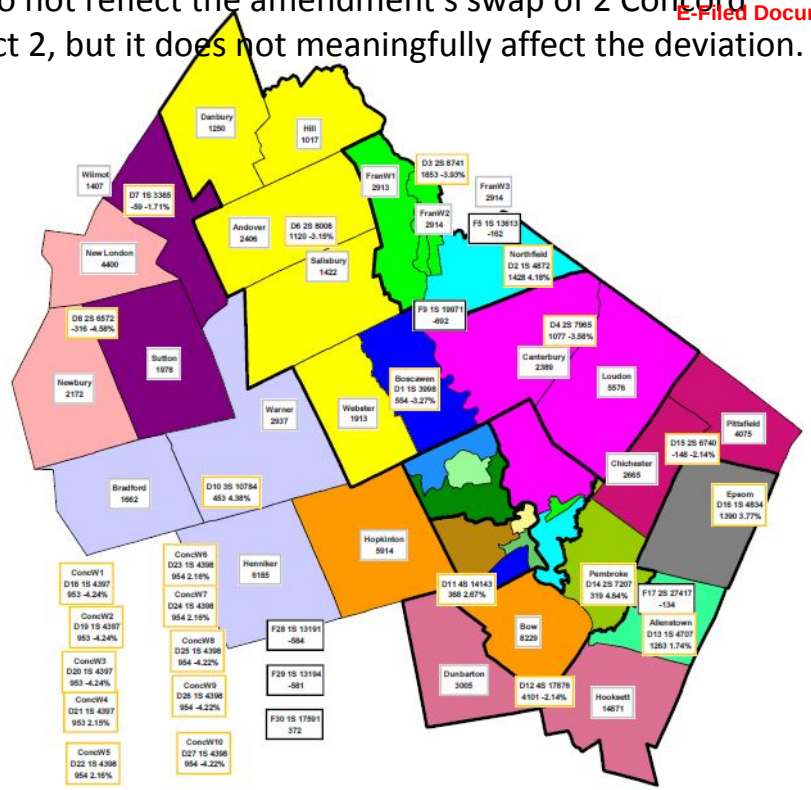
Committee proposal puts 2 of the most Republican wards in one 3-ward floterial in order to try and win 2 more seats for Republicans

Map-a-Thon
Granite Staters Drawing Fair Voting Maps

Merrimack County

The committee's map has 2 more violations than the Map-a-Thon recommendation. Hooksett and Bow get their own districts under the Map-a-Thon recommendation. The committee's map does have smaller more compact districts in the northwestern part of the county. But, the committee's map combines the Democrat-leaning town of Dunbarton with the Republican-leaning town of Hooksett, thus diluting the Democrat vote in Dunbarton and giving the Republicans an additional Republican leaning seat.

*These maps do not reflect the amendment's swap of 2 Concord Wards in District 2, but it does not meaningfully affect the deviation.

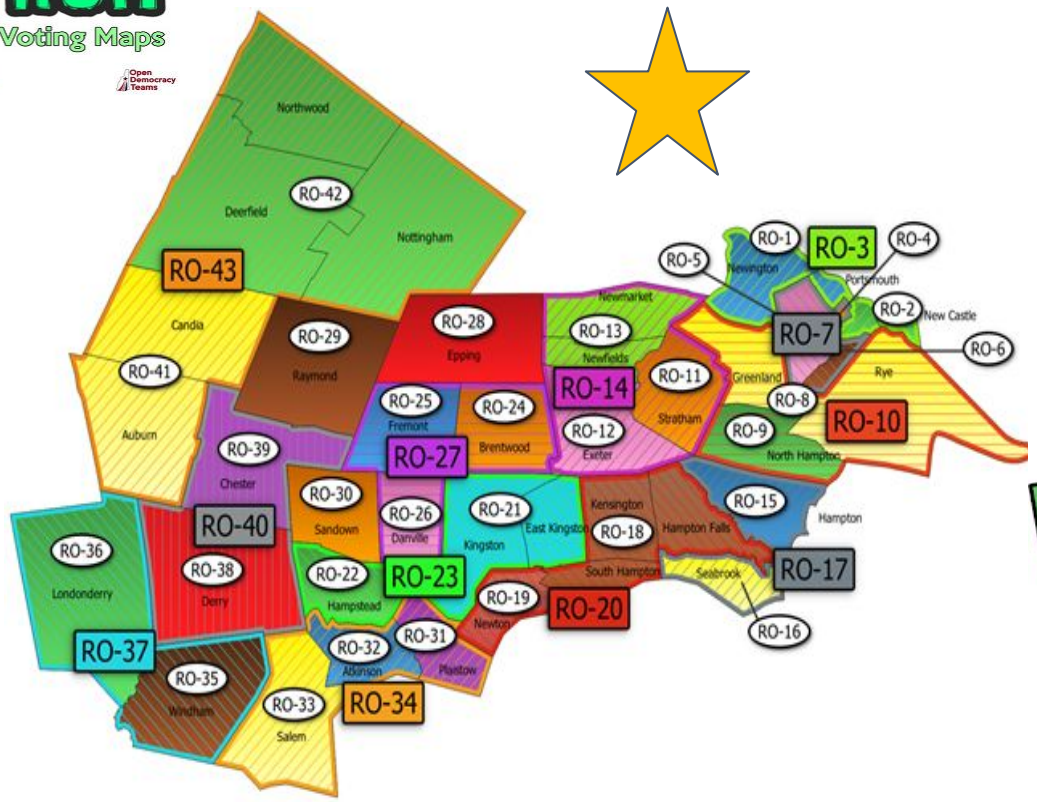


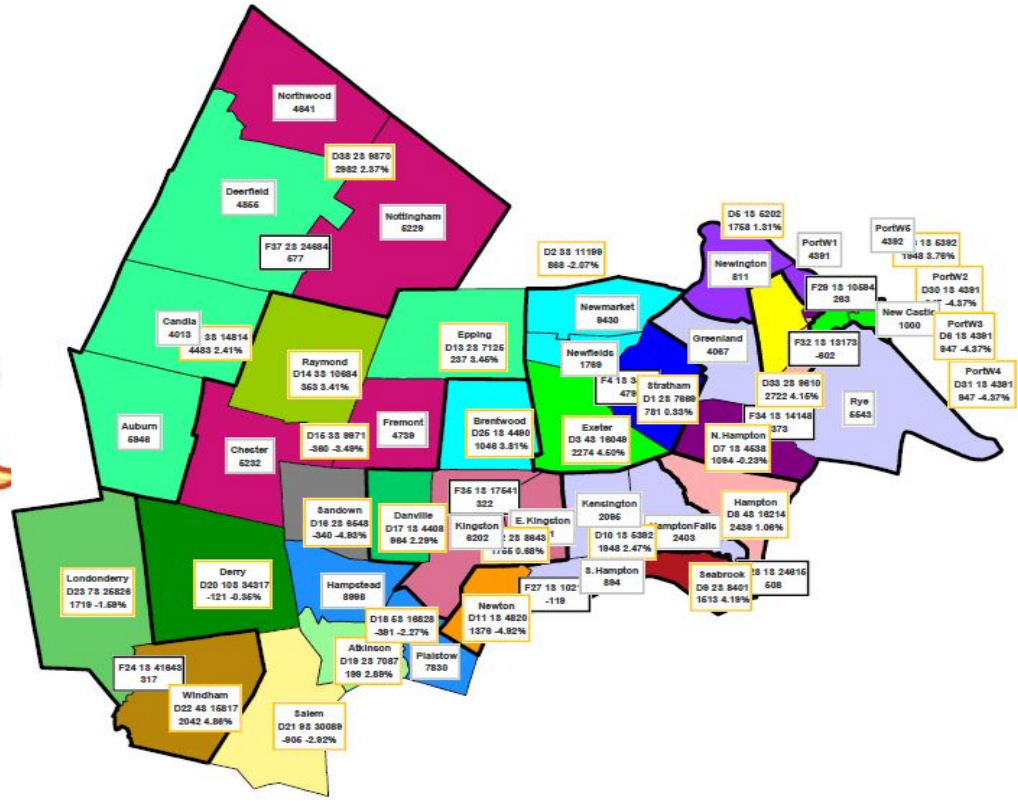
Merrimack County	Map-a-Thon Recommendation	HB50 Map w/ Senate Amendment
Deviation	-4.24% to 4.64% (8.88%)	-4.58% to 4.64% (9.22%)
# Violations	5	7
# Towns/Wards in Largest Non-Floterial District	4	5
Largest # Reps in a Non-Floterial District	3	4
# Towns/Wards in Largest Floterial District	7	8
Largest # Reps in a Floterial District	2	2
Partisan Lean of Seats (Lean Dem/Lean Rep/Competitive)	13/17/15	17/20/8

Map-a-Thon
Granite Staters Drawing Fair Voting Maps

Rockingham County

The committee's map has 4 more violations than the Map-a-Thon's recommendation. The eastern part of the map is the same in both but the western section is very different. Chester, Fremont, Hampstead, and Plaistow all get their own districts under the Map-a-Thon recommendation. Deerfield also is put with Northwood and Nottingham, which aligns with testimony from residents of Deerfield at the public hearing.



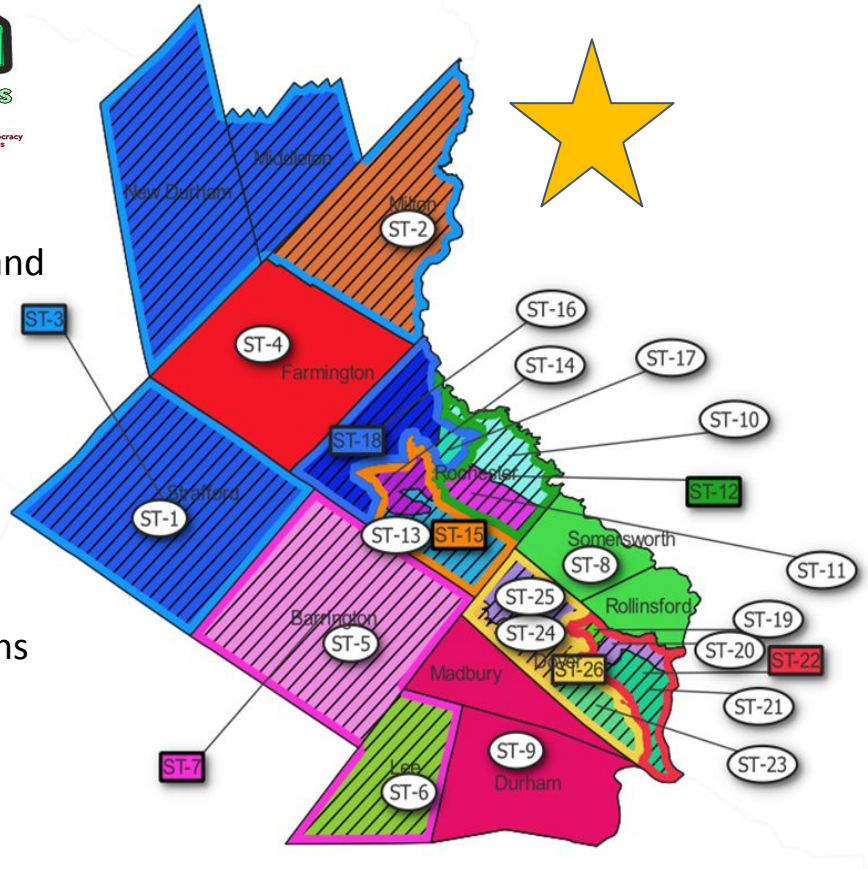


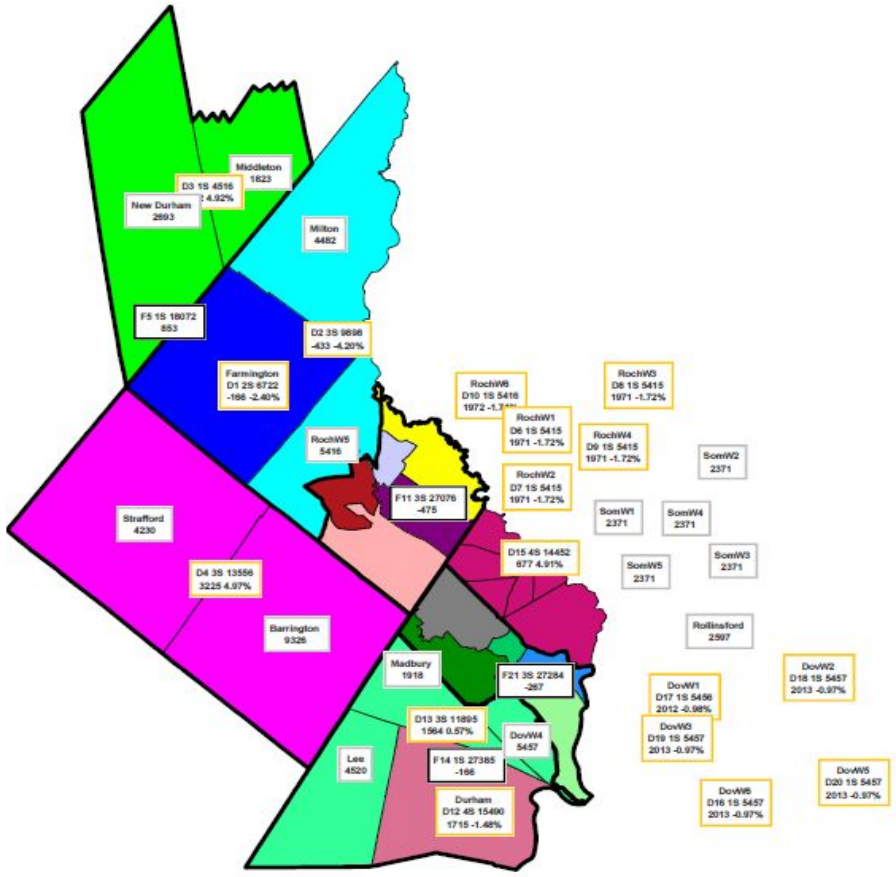
Rockingham County	Map-a-Thon Recommendation	HB50 Map
Deviation	-4.92% to 4.86% (9.78%)	-4.93% to 4.86% (9.80%)
# Violations	10	14
# Towns/Wards in Largest Non-Floterial District	3	3
Largest # Reps in a Non-Floterial District	8	10
# Towns/Wards in Largest Floterial District	5	5
Largest # Reps in a Floterial District	4	2
Partisan Lean of Seats (Lean Dem/Lean Rep/Competitive)	20/63/8	20/63/8

Map-a-Thon
Granite Staters Drawing Fair Voting Maps

Strafford County

The committee's map breaks up both Dover and Rochester while also not giving Milton, Barrington, and Lee their own districts; although it does give Durham its own district. It's likely the district was constructed to help the incumbent win reelection in Barrington. Barrington is a swing town, and thus by combining it with the more Republican Strafford, it trades a fairer map for other towns with giving the Republican rep there a better chance of winning. the committee map has a slightly lower deviation.





Map-a-Thon's recommendation has 4 fewer violations! There is also a way to combine a ward in Rochester with a ward in Dover to decrease the deviations and allow for more wiggle room with new ward lines.

Strafford County	Map-a-Thon Recommendation	HB50 Map
Deviation	-4.94% to 4.91% (9.85%)	-4.20% to 4.97% (9.16%)
# Violations	3	7
# Towns/Wards in Largest Non-Float District	6	6
Largest # Reps in a Non-Floterial District	5	4
# Towns/Wards in Largest Floterial District	4	5
Largest # Reps in a Floterial District	2	3
Partisan Lean of Seats (Lean Dem/Lean Rep/Competitive)	20/7/11	20/8/10

Map-a-Thon
Granite Staters Drawing Fair Voting Maps

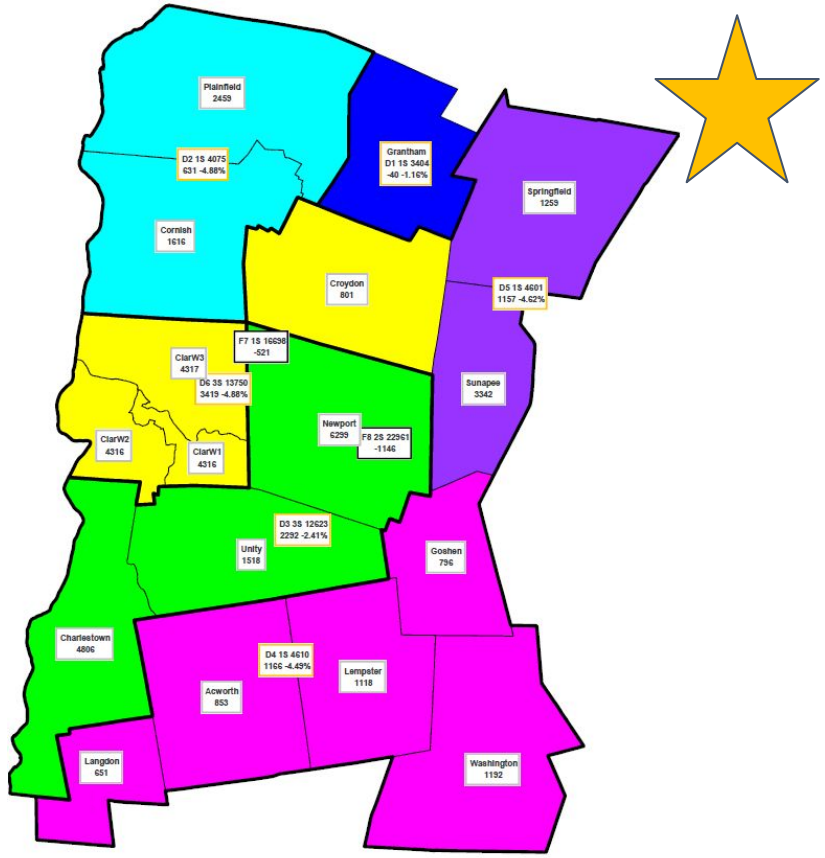
Sullivan County

Map-a-Thon is recommending the same map as the Committee. Sullivan County is very difficult to map with the current population numbers and although this map has issues, it is the best map available with +/- 5% deviation.

While we concur with the committee on this map, its construction raises best practice concerns. The Claremont & Croydon district (yellow) is *technically*, although not *practically*, contiguous.

Even more questionable is the floterial district encompassing Grantham & Plainfield (light blue) and the towns of Charlestown, Unity and Newport (green), crisscrossing between Claremont and Croydon.

Widening of the allowed deviation would likely prevent the need for these radical solutions.



Sullivan County	Map-a-Thon Recommendation / HB50 Map
Deviation	-4.88% to -1.16% (3.73%)
# Violations	3
# Towns/Wards in Largest Non-Float District	5
Largest # Reps in a Non-Floterial District	3
# Towns/Wards in Largest Floterial District	11
Largest # Reps in a Floterial District	2
Partisan Lean of Seats (Lean Dem/Lean Rep/Competitive)	2/6/5

Map-a-Thon
Granite Staters Drawing Fair Voting Maps

Predicted Partisan Lean for Proposed NH House Maps

Comparison of **predicted** two-party vote share by county and seats, *using the average of the 2020 NH Executive Council and NH Senate elections' two-party vote share*, which totaled 49.3% Democrat and 50.7% Republican for the state.

The averaged two-party vote share is calculated for each district based on its constituent town(s)/ward(s). All seats in the district are assigned 'Lean Dem', 'Lean Rep', or 'Competitive' depending on whether the predicted Democrat vote share is >55%, the predicted Republican vote share is >55%, or neither party is predicted >55% vote share.

Map-a-Thon Proposed Maps

County	Total Number of Seats	Averaged 2020 EC & NH Senate Elections		Partisan Lean Proposed NH House Seats					
		Dem (% of votes)	Rep (% of votes)	Lean Dem (# seats)	Lean Dem (% seats)	Lean Rep (# seats)	Lean Rep (% seats)	Competitive (# seats)	Competitive (% seats)
Belknap	18	39.6%	60.4%	0	0.0%	14	77.8%	4	22.2%
Carroll	15	39.6%	60.4%	0	0.0%	10	66.7%	5	33.3%
Cheshire	22	56.2%	43.8%	11	50.0%	1	4.5%	10	45.5%
Coos	9	41.5%	58.5%	0	0.0%	5	55.6%	4	44.4%
Grafton	26	57.7%	42.3%	12	46.2%	5	19.2%	9	34.6%
Hillsborough	123	49.7%	50.3%	34	27.6%	28	22.8%	61	49.6%
Merrimack	45	50.4%	49.6%	13	28.9%	17	37.8%	15	33.3%
Rockingham	91	46.5%	53.5%	20	22.0%	63	69.2%	8	8.8%
Strafford	38	53.8%	46.2%	20	52.6%	7	18.4%	11	28.9%
Sullivan	13	47.2%	52.8%	2	15.4%	6	46.2%	5	38.5%
Total	**400**			**112**	**28.0%**	**156**	**39.0%**	**132**	**33.0%**

That's 25% more competitive seats than the Committee's maps!

House Committee Maps (HB50) with Senate Amendment

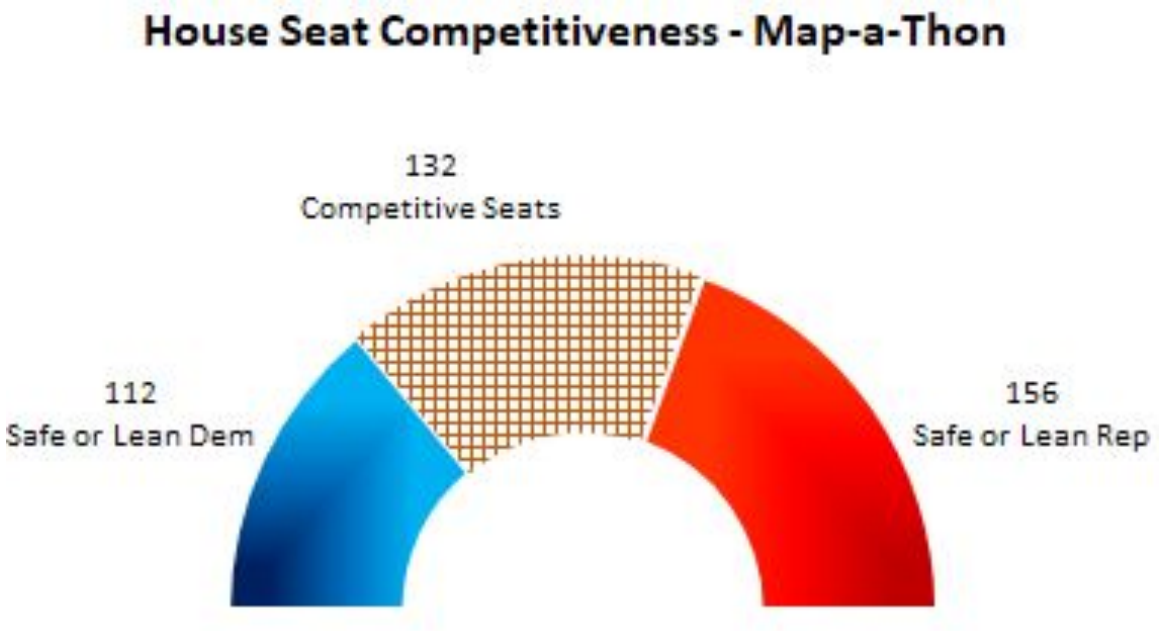
County	Total Number of Seats	Averaged 2020 EC & NH Senate Elections		Partisan Lean Proposed NH House Seats					
		Dem (% of votes)	Rep (% of votes)	Lean Dem (# seats)	Lean Dem (% seats)	Lean Rep (# seats)	Lean Rep (% seats)	Competitive (# seats)	Competitive (% seats)
Belknap	18	39.3%	60.7%	0	0.0%	18	100.0%	0	0.0%
Carroll	15	39.5%	60.5%	0	0.0%	10	66.7%	5	33.3%
Cheshire	22	56.2%	43.8%	12	54.5%	3	13.6%	7	31.8%
Coos	9	43.0%	57.0%	0	0.0%	5	55.6%	4	44.4%
Grafton	26	57.9%	42.1%	13	50.0%	7	26.9%	6	23.1%
Hillsborough	123	49.6%	50.4%	38	30.9%	32	26.0%	53	43.1%
Merrimack	45	50.2%	49.8%	17	37.8%	20	44.4%	8	17.8%
Rockingham	91	47.9%	52.1%	20	22.0%	63	69.2%	8	8.8%
Strafford	38	55.5%	44.5%	20	52.6%	8	21.1%	10	26.3%
Sullivan	13	46.3%	53.7%	2	15.4%	6	46.2%	5	38.5%
Total	**400**			**122**	**30.5%**	**172**	**43.0%**	**106**	**26.5%**

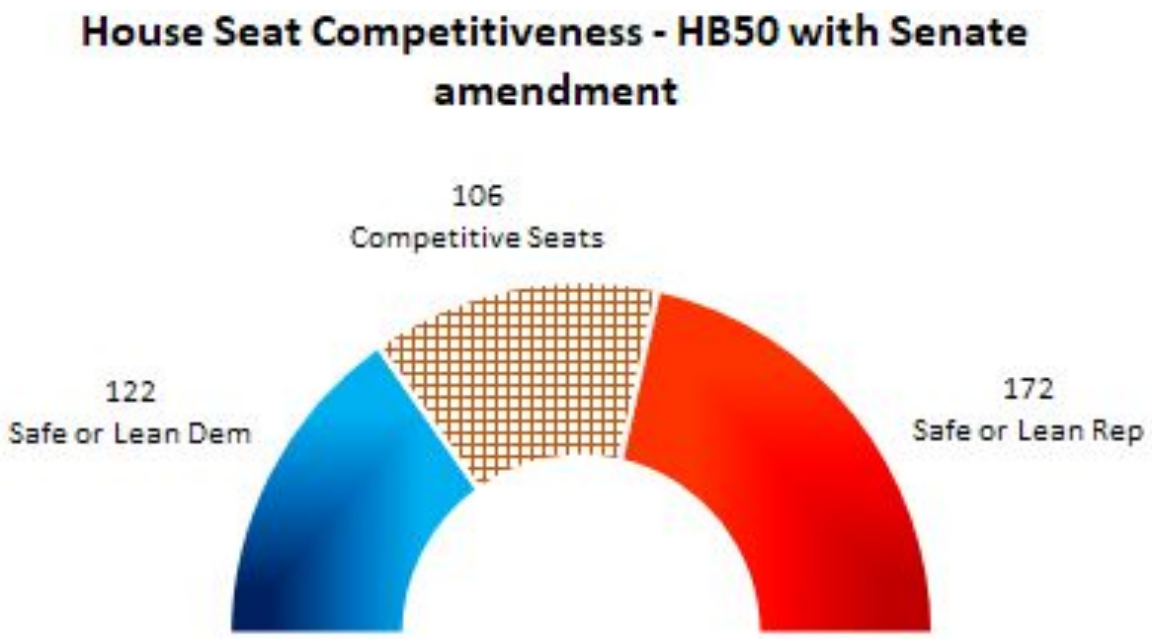
Committee's maps yield a ***lower number of predicted competitive seats*** than the Map-a-Thon proposed maps

Map-a-Thon
Granite Staters Drawing Fair Voting Maps

We estimate that **106** of the 400 NH House seats are competitive in the committee proposal, while **132** are competitive in Map-a-Thon's recommendation.

Generally, more competitiveness is better, as it leads to more accountability between representatives and their constituents via competitive general elections. While the nature of local population patterns can lead to districts with an innate partisan lean, the Committee proposal renders *more seats **uncompetitive*** compared to the Map-a-Thon proposal, while also having more cases where constitutionally-eligible towns and wards have been ***denied** dedicated representation*.





Map-a-Thon
Granite Staters Drawing Fair Voting Maps

Number of Violations Summary, HB 50, with Amendment 2022-0339s

	# of Violations	
County	Map-a-Thon Recommended Maps	HB50 Maps
Belknap	6	6
Carroll	3	3
Cheshire	3	5
Coos	0	0
Grafton	3	5
Hillsborough	4	6
Merrimack	5	7
Rockingham	10	14
Strafford	3	7
Sullivan	3	3
Total	40	56
	16 more violations in HB50 Maps	

That's 40% more violations than necessary!

Violation A town that has a population over 3,444 and is eligible for its own district that does not have its own district in the corresponding map. We count one violation per town/city and not by individual wards.

Map-a-Thon
Granite Staters Drawing Fair Voting Maps

General NH House Map Takeaways

- Defining NH House district boundaries is a complex process due to Constitutional and court rules, as well as the legislature's self-imposed constraints.
- The NH State Constitution requires that "When the population of any town or ward, according to the last federal census, is within a reasonable deviation from the ideal population for one or more representative seats, the town or ward shall have its own district of one or more representative seats." However, this requirement can conflict with another constitutional requirement to distribute representation equally across the population.
- Constraints aside, the House & Senate committees chose not to maximize the number of eligible towns receiving dedicated House seats. Often choosing partisan advantage over the NH Constitution's guarantee, 56 towns were denied dedicated seats, vs. M-A-T demonstrated 40.
- The *accepted* deviation of -5% to +5% of the 3,444 "ideal population" per NH House seat could be widened with permission, allowing more eligible towns to receive dedicated districts as intended by the NH Constitution.
- It is the responsibility of the legislature to define districts based on principles of equality rather than partisan advantage. **Several aspects of the current proposed districts appear to be designed for partisan advantage**.

Map-a-Thon
Granite Staters Drawing Fair Voting Maps

Summary of NH House District Findings by County

Belknap: Did not change with the amendment. Several towns are large enough for dedicated House districts, but didn't get them. The committee maps one ward with Laconia which is *barely* contiguous with Guilford - certainly not best practice. The Map-a-Thon's map offer four more competitive districts than the proposed maps.

Carroll: Did not change with the amendment; Both maps are similar, with Conway and Ossipee getting their own districts, and the district from Sandwich to Chatham being the same. The main difference is that the Committee's map creates a very large floterial district spanning from Moultonborough to Brookfield totalling 8 towns. Map-a-Thon's proposal has a smaller floterial and gives Freedom and Effingham a small district together.

Cheshire: Did not change with the amendment. The Committee's map is an improvement on the majority's initial proposal, but does not go as far as Map-a-Thon's recommended map in terms of towns getting their own district if eligible. The committee's map does give Rindge and Winchester their own district, a positive.

Coos: The amendment restored Berlin's dedicated House seat, and attached Kilkenny to another distinct. Both maps are similar, except the Map-a-Thon's recommended map give Carroll and Whitefield a single district while putting towns with more in common with Berlin in a floterial with Berlin.

Grafton: Did not change with the amendment The northern section of the Committee's map is reasonable with small compact districts. The southern section is where the committee's map has issues. It does not give Hanover or Canaan their own districts and creates a very large 10-town floterial district. The committee's map does have a lower deviation, but the Map-a-Thon map is a superior plan

Hillsborough- The amendment gives Manchester one additional representative to increase it from 32 to 33. However, Manchester's deviation would allow for as many as 36. Because Manchester updated is wards, the Senate had to realigned some of the rest of the county. Manchester is now aligned to give Republicans a better chance to win 6 seats rather than 4. Weare is now given its own district, which is an improvement, and the Senate amendment does have a lower deviation and smaller floterials.

Map-a-Thon
Granite Staters Drawing Fair Voting Maps

Summary of NH House District Findings by County

Merrimack - One minor change in amendment, swapping Ward 4 to ME-29, Ward 8 to ME-30 in Concord. The committee's map has 2 more violations than the Map-a-Thon recommendation. Hooksett and Bow get their own districts under the Map-a-Thon recommendation. The committee's map does have smaller more compact districts in the northwestern part of the county. But, the committee's map combines the Democrat-leaning town of Dunbarton with the Republican-leaning town of Hooksett, thus diluting the Democrat vote in Dunbarton and giving the Republicans an additional Republican leaning seat

Rockingham - Did not change with the amendment. The committee's map has 4 more violations than the Map-a-Thon's recommendation. The eastern part of the map is the same in both but the western section is very different. Chester, Fremont, Hampstead, and Plaistow all get their own districts under the Map-a-Thon recommendation. Deerfield also is put with Northwood and Nottingham, which aligns with testimony from residents of Deerfield at the public hearing.

Strafford - Did not change with the amendment. The committee's map breaks up both Dover and Rochester while also not giving Milton, Barrington, and Lee their own districts; although it does give Durham its own district. It's likely the district was constructed to help the incumbent win reelection in Barrington. Barrington is a swing town, and thus by combining it with the more Republican Strafford, it trades a fairer map for other towns with giving the Republican rep there a better chance of winning. The committee map has a slightly lower deviation.

Sullivan - Did not change with the amendment. Map-a-Thon is recommending the same map as the Committee. Sullivan County is very difficult to map with the current population numbers and although this map has issues, it is the best map available with +/- 5% deviation. While we reluctantly concur with the committee on this map, its construction raises best practice concerns. The Claremont & Croydon district is *technically*, although not *practically*, contiguous. Even more questionable is the floterial district encompassing Grantham & Plainfield (light blue) and the towns of Charlestown, Unity and Newport (green), crisscrossing between Claremont and Croydon.

Map-a-Thon Proposed Maps

Links to all maps in Dave's Redistricting (DRA) nationally-recognized, freely accessible mapping platform

County	Non-floterial Map	Floterial Map
Belknap	https://davesredistricting.org/join/c55b8d28-9002-435f-8ea9-40ceaf18c04b	https://davesredistricting.org/join/c87b727e-dbdb-44e7-8f58-c08822c1d1b2
Carroll	https://davesredistricting.org/join/15f6618d-f8c7-41d9-85a6-56cf08d482d2	https://davesredistricting.org/join/d1dc49d7-7f4e-4be5-adfa-d765c730ee64
Cheshire	https://davesredistricting.org/join/e66e58d6-3ab2-4e19-82ef-1a4dd9eea72a	https://davesredistricting.org/join/eb960d67-e81a-46f8-a031-e9e809beb71c
Coos	https://davesredistricting.org/join/9bdc010c-9211-4da8-8c31-a4f47695f528	https://davesredistricting.org/join/9667b894-021a-46bd-bebf-2e34ffd0404a
Grafton	https://davesredistricting.org/join/fc01e1ed-4bcd-4664-8eff-02c39045a57c	https://davesredistricting.org/join/cb2db4a0-5dd1-45c5-93c5-25849acbdc4b
Hillsborough	https://davesredistricting.org/join/ce84e3be-8bd5-45e9-b5c2-f0471c09af58	https://davesredistricting.org/join/67d8aa40-07f1-4e09-b316-1dd11b9e9e90
Merrimack	https://davesredistricting.org/join/da1f3af3-05dc-446d-bdf4-0faf0d333be7	https://davesredistricting.org/join/fb79e594-e214-4b84-a06f-3cfb76cb22eb
Rockingham	https://davesredistricting.org/join/91db89cc-872f-449d-bb52-b0bc45476fc9	https://davesredistricting.org/join/2bec5a67-2c8a-4a2a-a170-242c27e646ba
Strafford	https://davesredistricting.org/join/b39e6f9e-fe24-4ebf-99cc-408cd8a8f02a	https://davesredistricting.org/join/5536f565-ef3e-40f6-8dce-0d540daab858
Sullivan	https://davesredistricting.org/join/52b1aec9-25b6-452c-9cd8-95c7b80f7cad	https://davesredistricting.org/join/225f0ed9-333f-4f1a-9664-5e497b2b63a1

NH House HB50 Maps with Senate Amendments (Coos and Hillsborough)

Links to all maps in Dave's Redistricting (DRA) nationally-recognized, freely accessible mapping platform

County	Non-floterial Map	Floterial Map
Belknap	https://davesredistricting.org/join/ff7318f9-efe7-480f-b993-f73bab93bea6	https://davesredistricting.org/join/fd72905c-d85f-4c1e-86d8-5bd9ce6b2d62
Carroll	https://davesredistricting.org/join/dac0766e-a0ac-46ef-af23-9ab79a7cf475	https://davesredistricting.org/join/b663b1c9-8ecd-457b-b181-2316804c1105
Cheshire	https://davesredistricting.org/join/f5880396-309a-4f1b-85eb-420e88c0c0af	https://davesredistricting.org/join/18e07c1e-8b71-4557-bb1e-2f6ee2a6d39a
Coos	https://davesredistricting.org/join/be184cce-4a25-4e88-96b1-a1eda44e0ad7	https://davesredistricting.org/join/9c1e6cf2-f9a0-4393-9f25-7fb8c5991fb9
Grafton	https://davesredistricting.org/join/a5da803e-0b0b-449f-89b1-53637b19ed24	https://davesredistricting.org/join/321e94bc-445d-4b5b-a8ed-d836b6c15ea8
Hillsborough	https://davesredistricting.org/join/77791b49-b484-48b5-9aa2-634b0912e037	https://davesredistricting.org/join/660640c5-3ff4-4575-9df2-308a660bc6e7
Merrimack	https://davesredistricting.org/join/a6981844-ae5d-4d9a-a15b-856d992eeb36	https://davesredistricting.org/join/24e3442c-bf07-4951-ad10-73d4de2ba24a
Rockingham	https://davesredistricting.org/join/1ad29e58-722b-46d5-bbe8-c3a2de8fe5fd	https://davesredistricting.org/join/adc26f10-7d77-431c-90fe-9c740605caed
Strafford	https://davesredistricting.org/join/9a8946d4-50ff-4a86-a7b6-3cb8b26b1bc6	https://davesredistricting.org/join/7593454e-3fe7-452d-9685-6cc0a61aa868
Sullivan	https://davesredistricting.org/join/4c64cad4-2fdc-4a2f-8bad-ac54176d9edf	https://davesredistricting.org/join/05320cad-66ed-4ff8-a4e5-9aea6a750782

Map-a-Thon
Granite Staters Drawing Fair Voting Maps

Frequently Asked Questions

- **Why can't a redistricting satisfy all of the legal and other requirements?** It's a balancing act, since the objectives are not fully compatible with each other; for example, creating districts that both respect town and ward lines, and contain an equal number of residents.
- **Why are competitive districts better than ones with a predicted partisan lean?** In a competitive district, candidates must appeal to voters of both (or all) political parties, including independents. In districts with a clear partisan lean, candidates need only appeal to voters of their own party, as determined in the party primary elections.

Map-a-Thon
Granite Staters Drawing Fair Voting Maps

Actions You Can Take

- The NH House Election Law & Municipal Affairs Committee has a hearing on Monday, January 31, 1-4 pm at the NH State House. There may be additional amendments to the NH House maps. We are expecting an amendment to the Congressional map shortly, and there may be an additional hearing on the amendment.
- You may write or submit testimony to the committee using this email link.
- We also suggest contacting and/or sending your testimony to your own NH Senator: http://www.gencourt.state.nh.us/senate/members/senate_roster.aspx
- Contact your House representatives http://www.gencourt.state.nh.us/house/members/ who may see these bills a second time if amended by the Senate.

About the Map-a-Thon:
https://www.opendemocracynh.org/nh_map_a_thon

See this Report on the Web via Google Slides

Download our previously-released analysis reports on NH House, Congressional, NH Senate, and Executive Council maps:
https://www.opendemocracyaction.org/maps

EXHIBIT G

Map-a-Thon Proposed NH House Maps

Index

1. Summary of Proposed Maps
2. Map Comparison Summary
3. Belknap County Map
    3.1. Belknap County Map Districts
4. Carroll County Map
    4.1. Carroll County Map Districts
5. Cheshire County Map
    5.1. Cheshire County Map Districts
6. Coos County Map
    6.1. Coos County Map Districts
7. Grafton County Map
    7.1. Grafton County Map Districts
8. Hillsborough County Map
    8.1. Manchester Zoomed in Map
    8.2. Nashua Zoomed in Map
    8.3. Hillsborough County Map Districts
9. Merrimack County Map
    9.1. Concord Zoomed in Map
    9.2. Merrimack County Map Districts
10. Rockingham County Map
    10.1. Portsmouth Zoomed in Map
    10.2. Rockingham County Map Districts
11. Strafford County Map
    11.1. Dover/Rochester Zoomed in Map
    11.2. Strafford County Map Districts
12. Sullivan County Map
    12.1. Sullivan County Map Districts

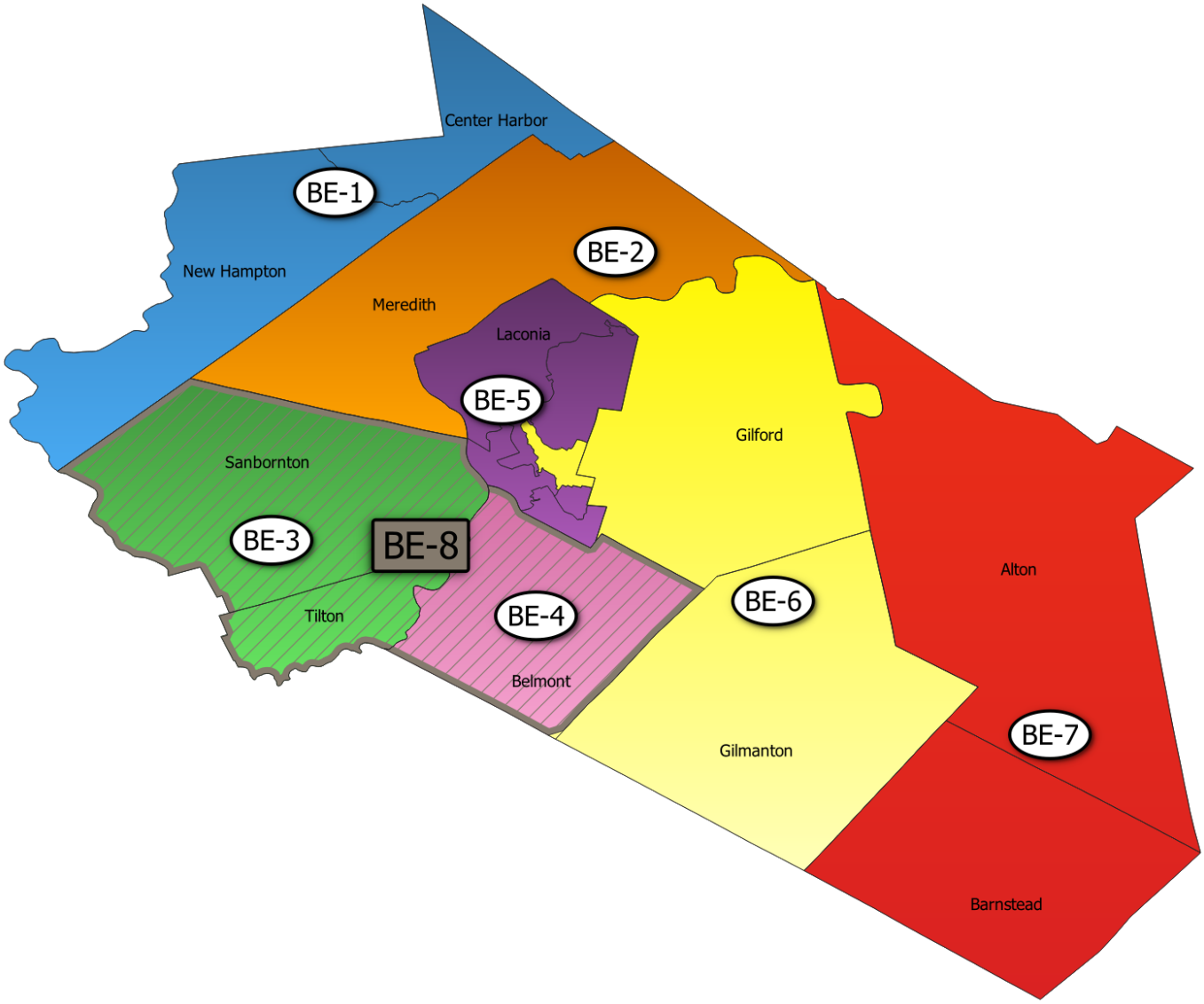
1. Summary of Proposed Maps

Map-a-Thon Proposed Maps Summary						
County	Population	# Reps	Min Dev	Max Dev	Deviation	Violations
Belknap	63,705	18	-3.28%	4.99%	8.27%	5
Carroll	50,107	15	-4.93%	1.54%	6.48%	3
Cheshire	76,458	22	-3.47%	4.15%	7.62%	3
Coos	31,268	9	-3.89%	4.80%	8.68%	0
Grafton	91,118	26	-4.87%	4.99%	9.86%	3
Hillsborough	422,937	123	-4.95%	4.54%	9.49%	4
Merrimack	153,808	45	-3.93%	4.64%	8.57%	5
Rockingham	314,176	91	-4.93%	4.86%	9.80%	11
Strafford	130,889	38	-4.57%	4.91%	9.48%	2
Sullivan	43,063	13	-4.88%	-1.16%	3.73%	5
Total	1,377,529	400	-4.95%	4.99%	9.94%	41

2. Map Comparison Summary

Enacted Maps vs. Map-a-Thon Proposed Maps Summary					
County	# Reps	Enacted Map Deviation	Proposed Map Deviation	Enacted Map Violations	Proposed Map Violations
Belknap	18	8.27%	8.27%	5	5
Carroll	15	6.48%	6.48%	3	3
Cheshire	22	9.81%	7.62%	5	3
Coos	9	8.74%	8.68%	0	0
Grafton	26	8.44%	9.86%	5	3
Hillsborough	123	9.75%	9.49%	6	4
Merrimack	45	9.22%	8.57%	7	5
Rockingham	91	9.80%	9.80%	13	11
Strafford	38	9.13%	9.48%	6	2
Sullivan	13	3.73%	3.73%	5	5
Total	400	10.13%	9.94%	55	41

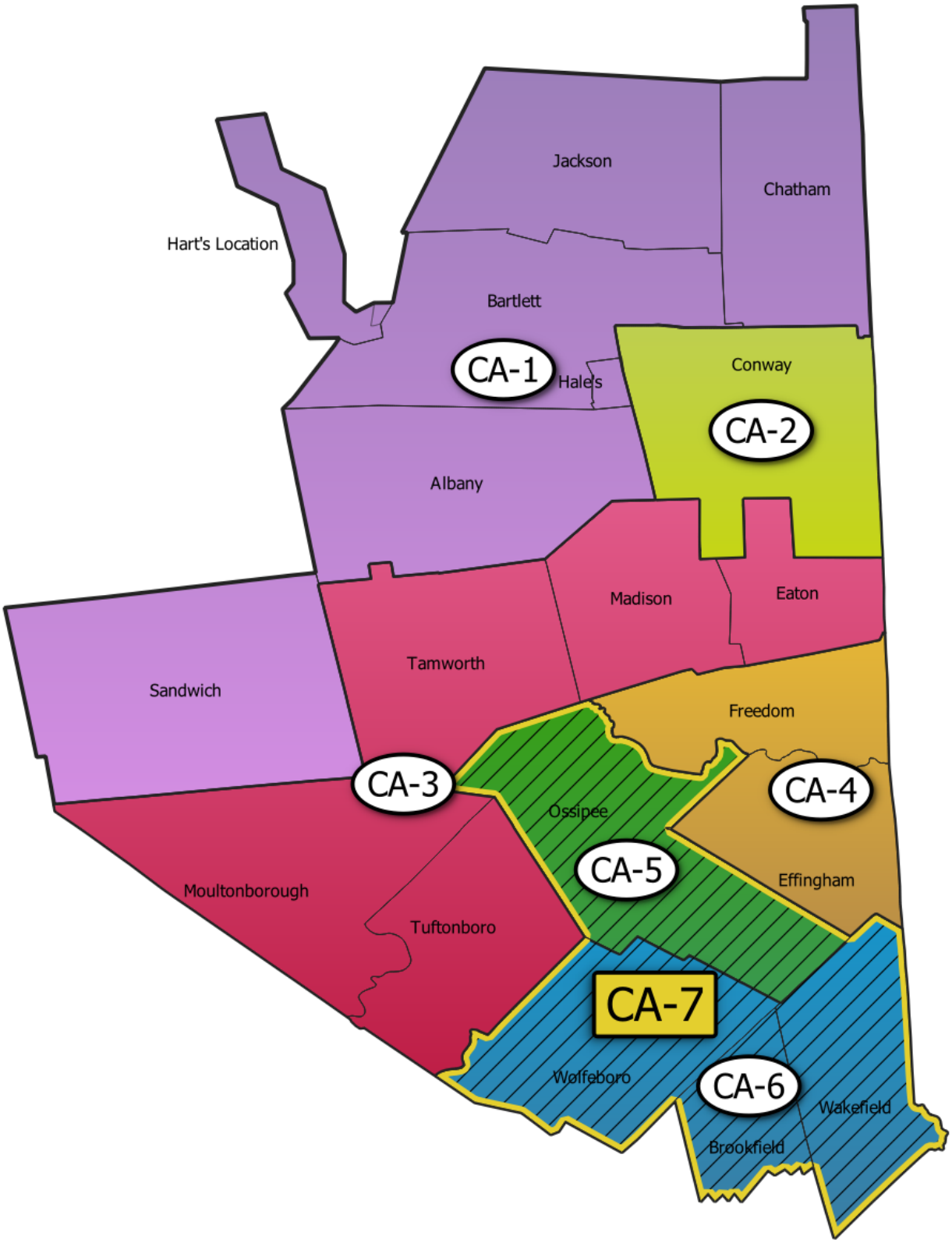
3. Belknap County Map



3.1. Belknap County Map Districts

Belknap County Enacted Map							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
BE-1	3,417	1			Center Harbor, New Hampton	-0.78%	
BE-2	6,662	2			Meredith	-3.28%	
BE-3	6,988	1	BE-8	2	Sanborton, Tilton	2.63%	Tilton
BE-4	7,314	1			Belmont	4.99%	
BE-5	14,117	4			Laconia Wards 1,3-6	2.48%	
BE-6	14,398	4			Gilford, Gilmanton, Laconia Ward 2	4.52%	Gilford, Gilmanton
BE-7	10,809	3			Alton, Barnstead	4.62%	Alton, Barnstead
Total	63,705	18				8.27%	5

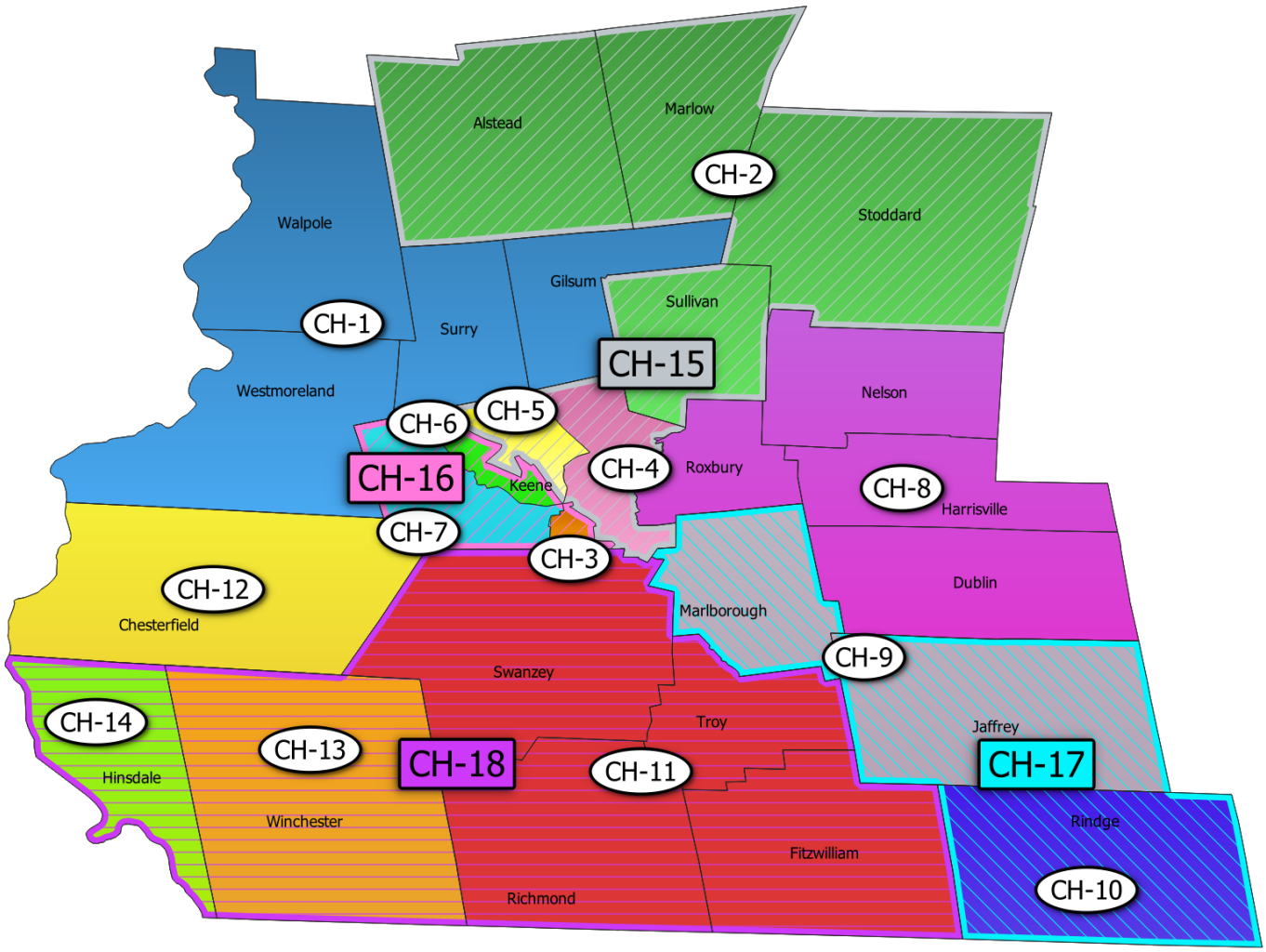
4. Carroll County Map



4.1. Carroll County Map Districts

Carroll County Proposed Map							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
CA-1	6,994	2			Chatham, Jackson, Bartlett, Hart's Location, Hales Location, Albany, Sandwich	1.54%	
CA-2	9,822	3			Conway	-4.93%	
CA-3	13,167	4			Tuftonboro, Moultonborough, Tamworth, Madison, Eaton	-4.42%	Moultonborough
CA-4	3,380	1			Freedom, Effingham	-1.85%	
CA-5	4,372	1	CA-7	1	Ossipee	0.67%	
CA-6	12,372	3			Wolfeboro, Brookfield, Wakefield	-3.91%	Wolfeboro, Wakefield
Total	50,107	15				6.48%	3

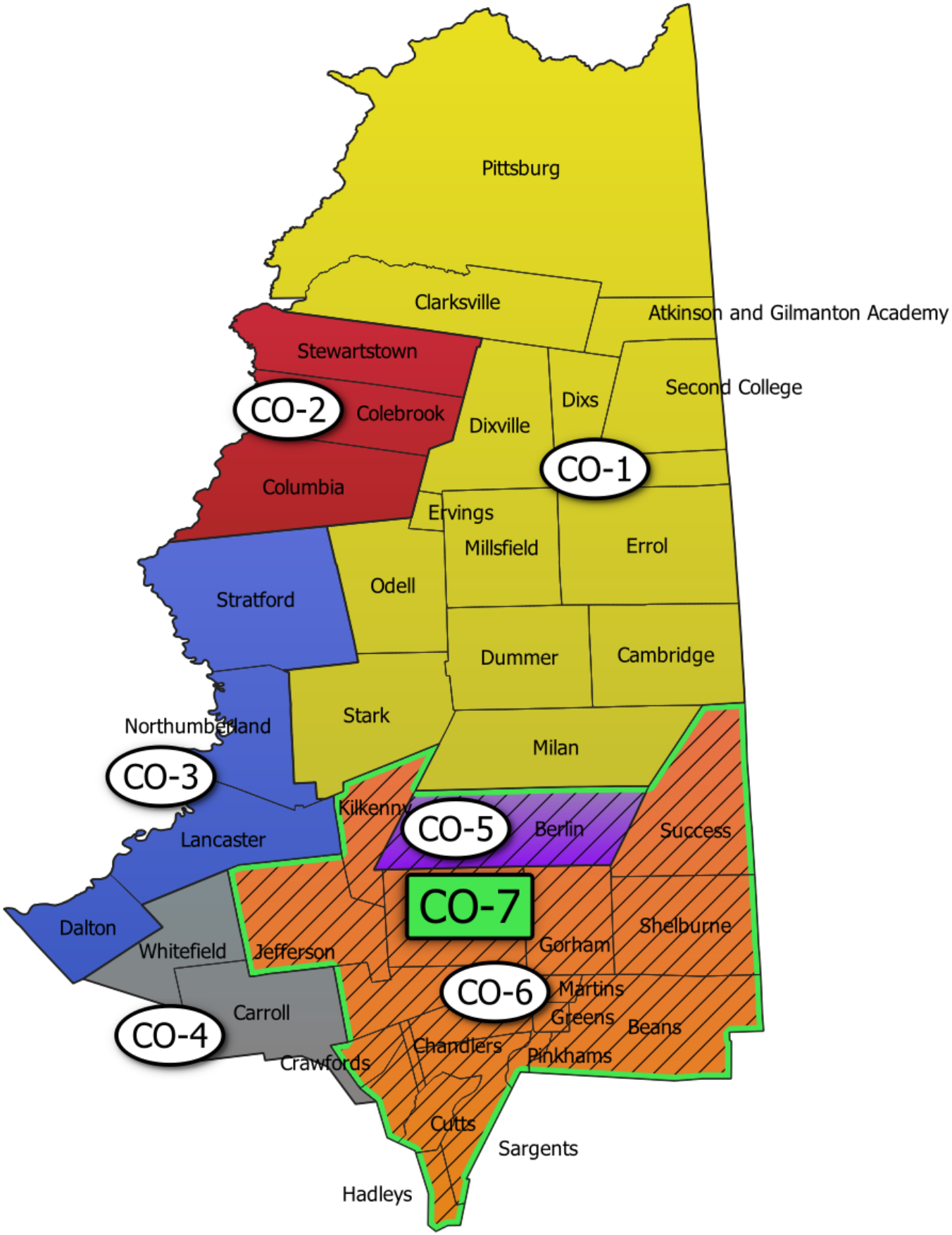
5. Cheshire County Map



5.1. Cheshire County Map Districts

Cheshire County Proposed Map							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
CH-1	6,911	2			Gilsum, Surry, Walpole, Westmoreland	0.34%	Walpole
CH-2	4,645	1	CH-15	1	Alstead, Marlow, Stoddard, Sullivan	0.83%	
CH-4	4,558	1			Keene Ward 2	-0.59%	
CH-5	4,550	1			Keene Ward 3	-0.72%	
CH-3	4,643	1	CH-16	1	Keene Ward 1	1.13%	
CH-6	4,620	1			Keene Ward 4	0.76%	
CH-7	4,676	1			Keene Ward 5	1.67%	
CH-8	3,365	1			Dublin, Harrisville, Nelson, Roxbury	-2.29%	
CH-9	7,416	1	CH-17	2	Jaffrey, Marlborough	4.15%	Jaffrey
CH-10	6,476	1			Rindge	-2.68%	
CH-11	12,948	3	CH-18	1	Fitzwilliam, Richmond, Swanzey, Troy	4.00%	Swanzey
CH-13	4,150	1			Winchester	0.66%	
CH-14	3,948	1			Hinsdale	-3.47%	
CH-12	3,552	1			Chesterfield	3.14%	
Total	76,458	22				7.62%	3

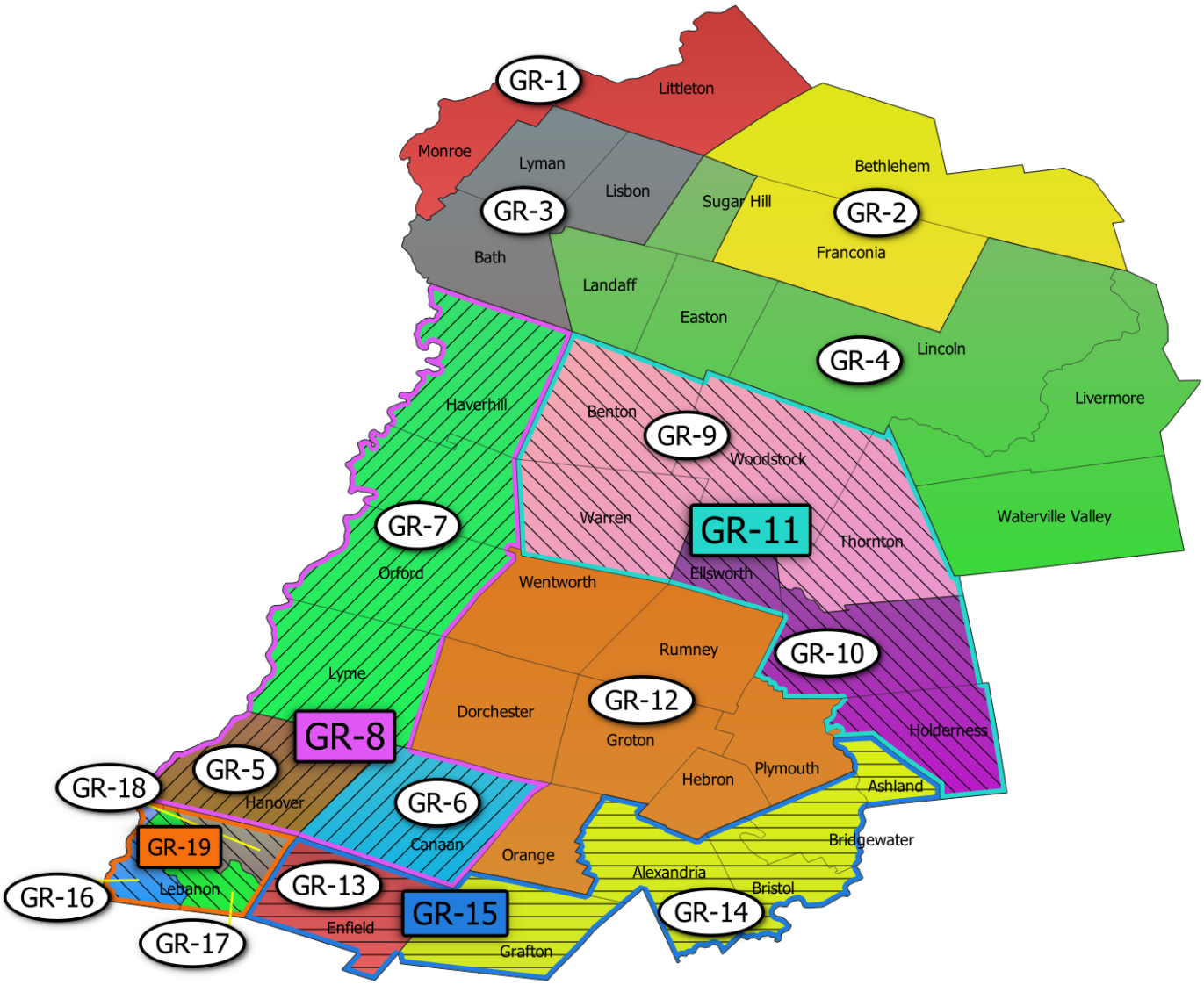
6. Coos County Map



6.1. Coos County Map Districts

Coos County Proposed Map							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
CO-1	3,609	1			Pittsburg, Clarksville, Dixville, Odell, Stark, Milan, Dummer, Cambridge, Millsfield, Errol, Wentworth Location, College Grant, Dixs Grant, Atkinson and Gilmanton Grant, Ervings Location	4.80%	
CO-2	3,556	1			Stewartstown, Colebrook, Columbia	3.26%	
CO-3	6,939	2			Stratford, Northumberland, Lancaster, Dalton	0.75%	
CO-4	3,310	1			Whitefield, Carroll	-3.89%	
CO-5	9,425	2	CO-7	1	Berlin	2.11%	
CO-6	4,429	1			Jefferson, Randolph, Gorham, Shelburne, Success, Kilkenny, Burbanks Grant, Crawfords Purchase, Beans Grant, Cutts Grant, Hadleys Purchase, Sargents Purchase, Thompson and Merserves Purchase, Martins Location, Greens Grant, Pinkhams Grant, Beans Purchase	-2.55%	
Total	31,268	9				8.68%	0

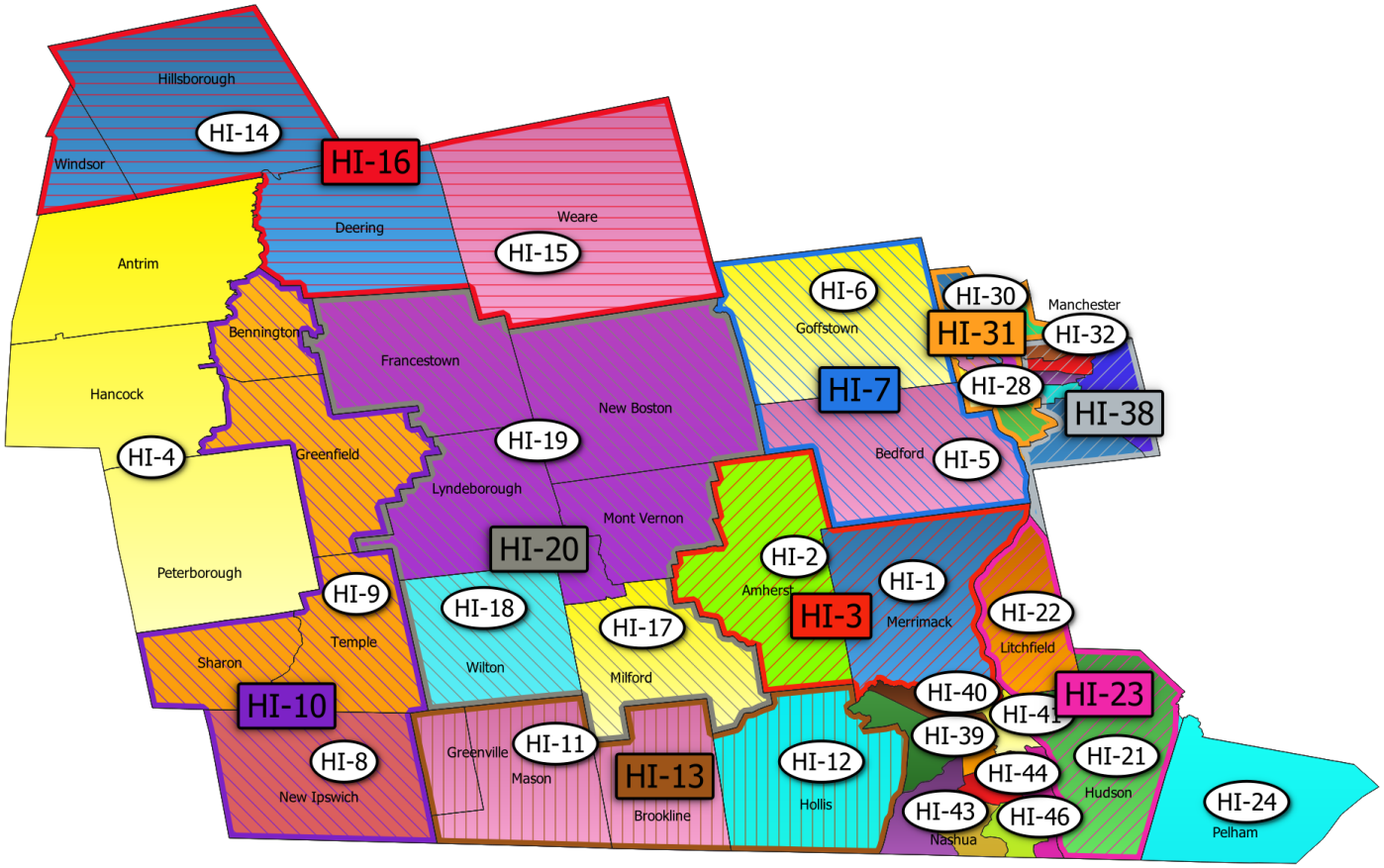
7. Grafton County Map



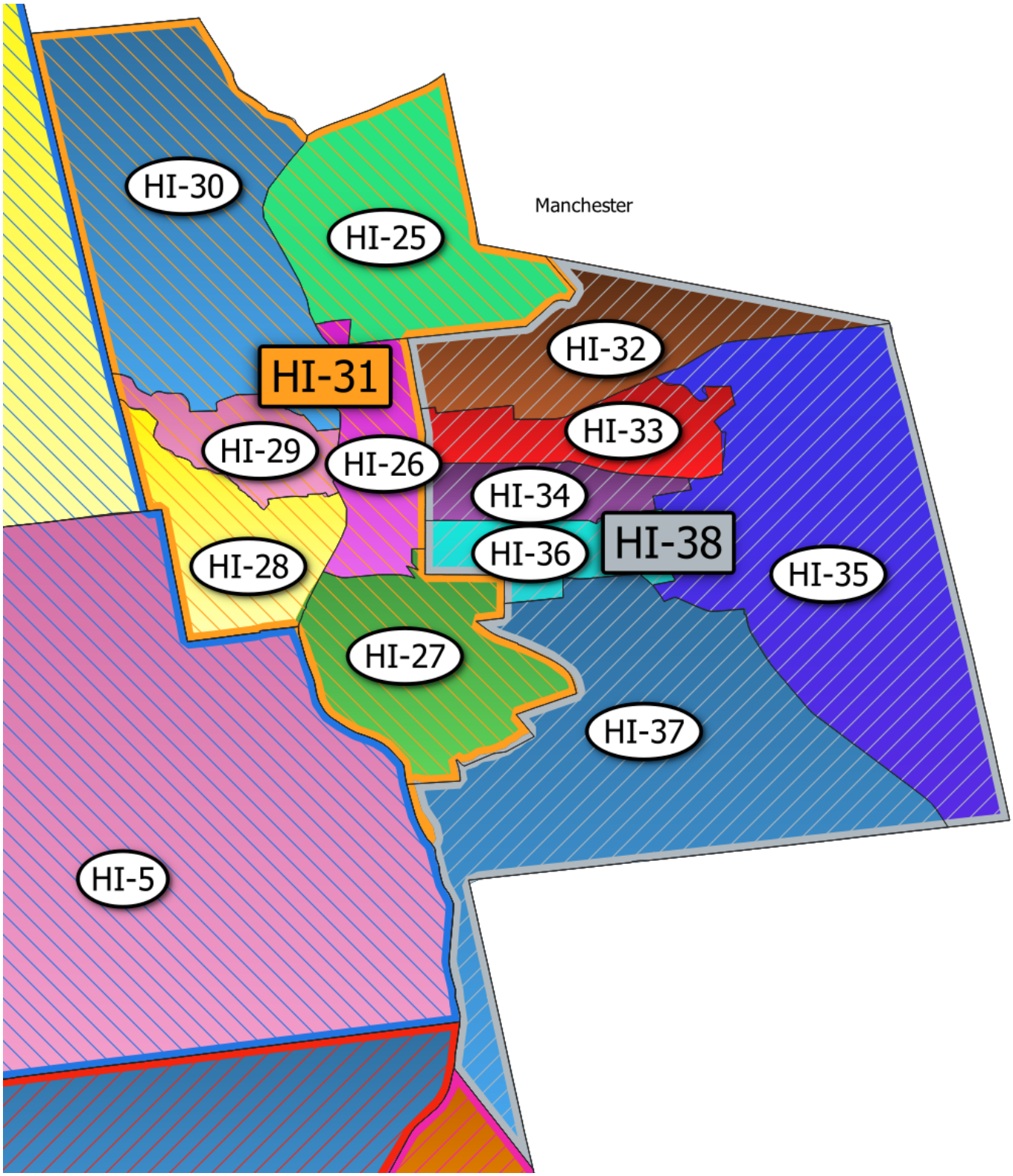
7.1. Grafton County Map Districts

Grafton County Proposed Map							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
GR-1	6,869	2			Littleton, Monroe	-0.27%	Littleton
GR-2	3,567	1			Bethlehem, Franconia	3.58%	
GR-3	3,283	1			Lyman, Lisbon, Bath	-4.67%	
GR-4	3,526	1			Sugar Hill, Landaff, Easton, Lincoln, Livermore, Waterville Valley	2.39%	
GR-5	11,870	3	GR-8	1	Hanover	-1.37%	
GR-6	3,794	1			Canaan	-4.87%	
GR-7	8,336	2			Haverhill, Piermont, Orford, Lyme	3.12%	Haverhill
GR-9	5,341	1	GR-11	1	Benton, Warren, Woodstock, Thornton	3.71%	
GR-10	5,440	1			Ellsworth, Campton, Holderness	4.99%	
GR-12	10,842	3			Wentworth, Rumney, Dorchester, Groton, Plymouth,Hebron, Orange	4.94%	Plymouth
GR-13	4,465	1	GR-15	1	Enfield	-1.75%	
GR-14	9,503	2			Grafton, Alexandria, Bristol, Bridgewater, Ashland	2.95%	
GR-16	4,762	1	GR-19	1	Lebanon Ward 1	3.70%	
GR-17	4,734	1			Lebanon Ward 2	3.24%	
GR-18	4,786	1			Lebanon Ward 3	4.09%	
Total	91,118	26				9.86%	3

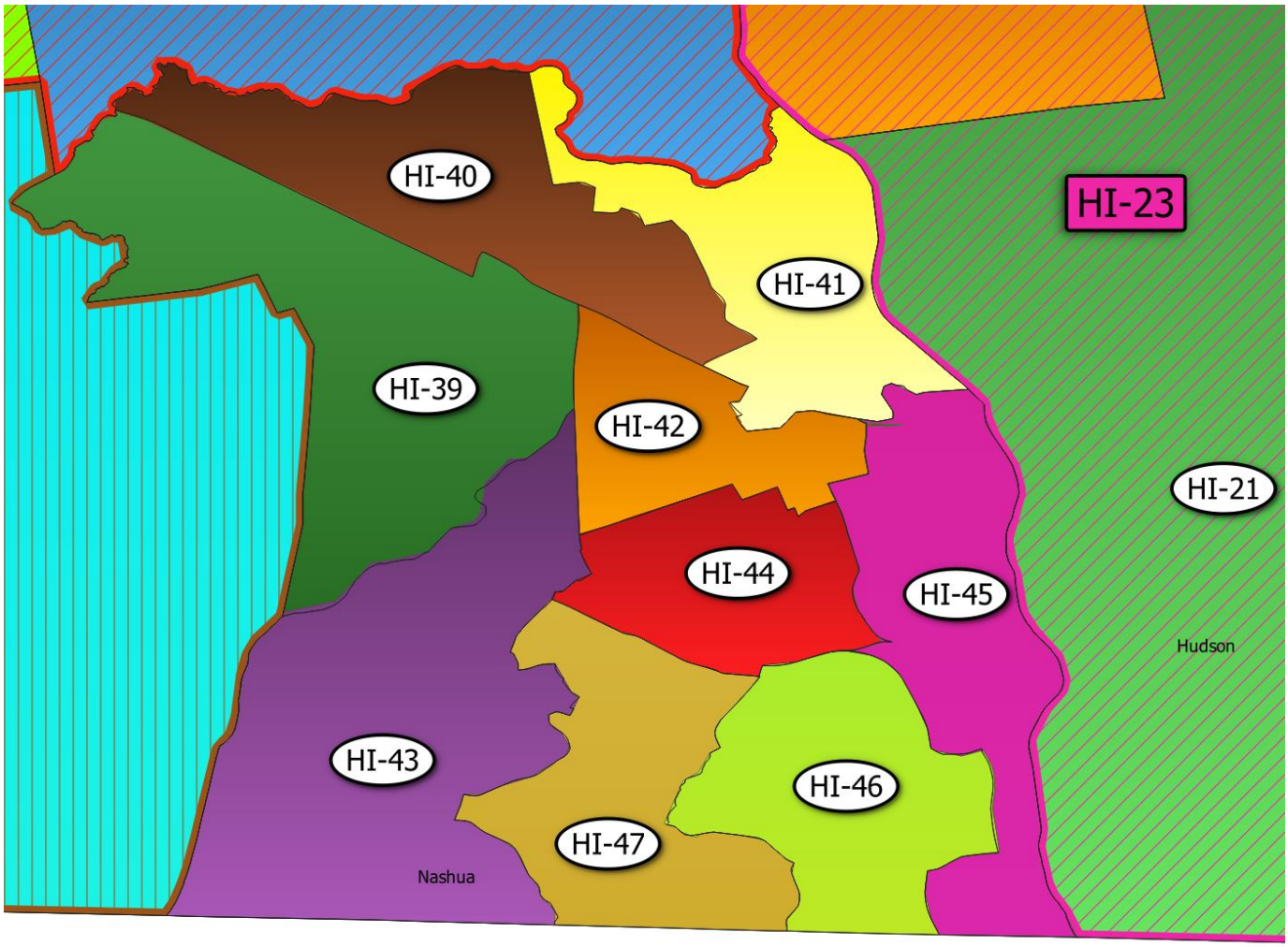
8. Hillsborough County Map



8.1. Manchester Zoomed in Map



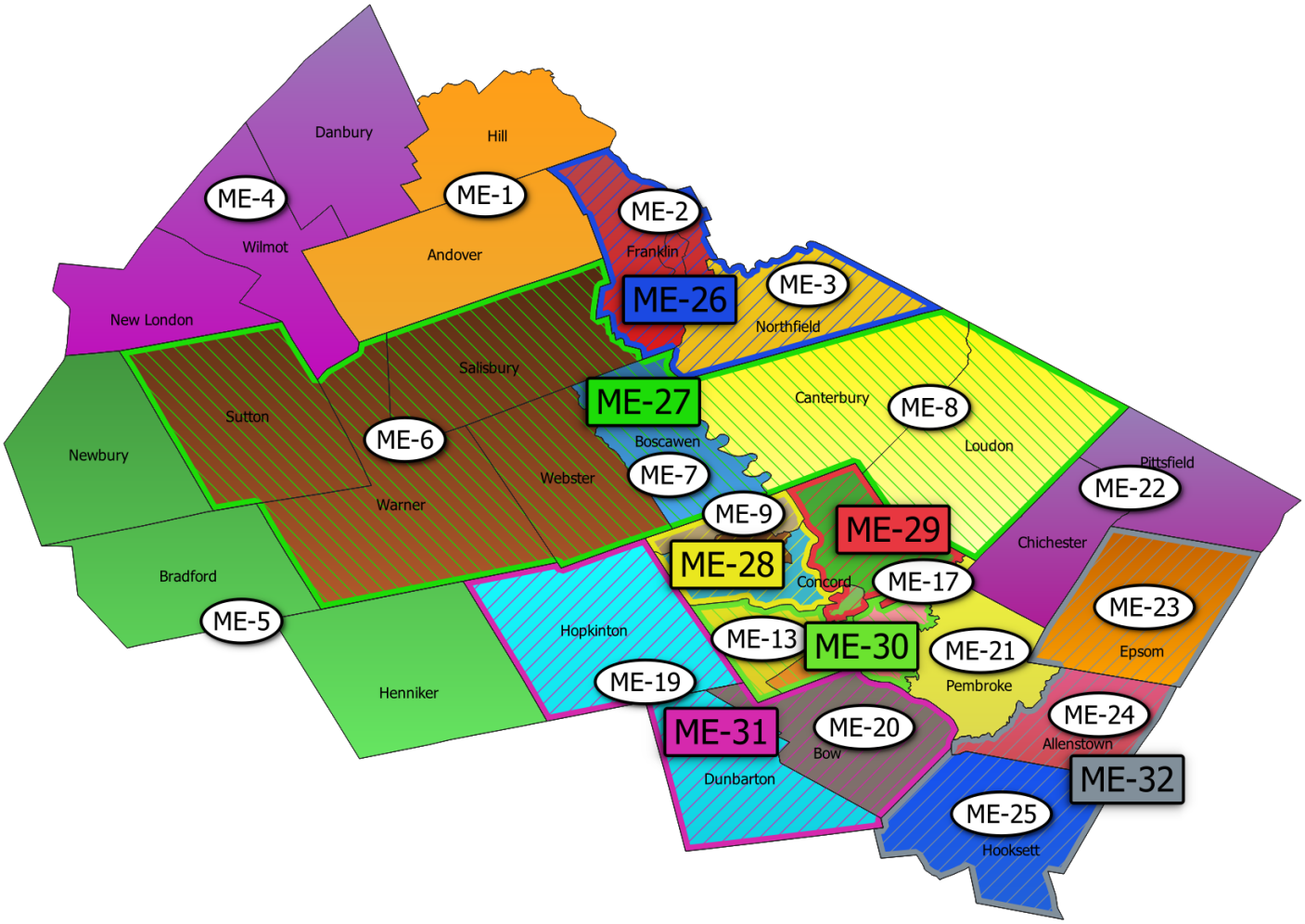
8.2. Nashua Zoomed in Map



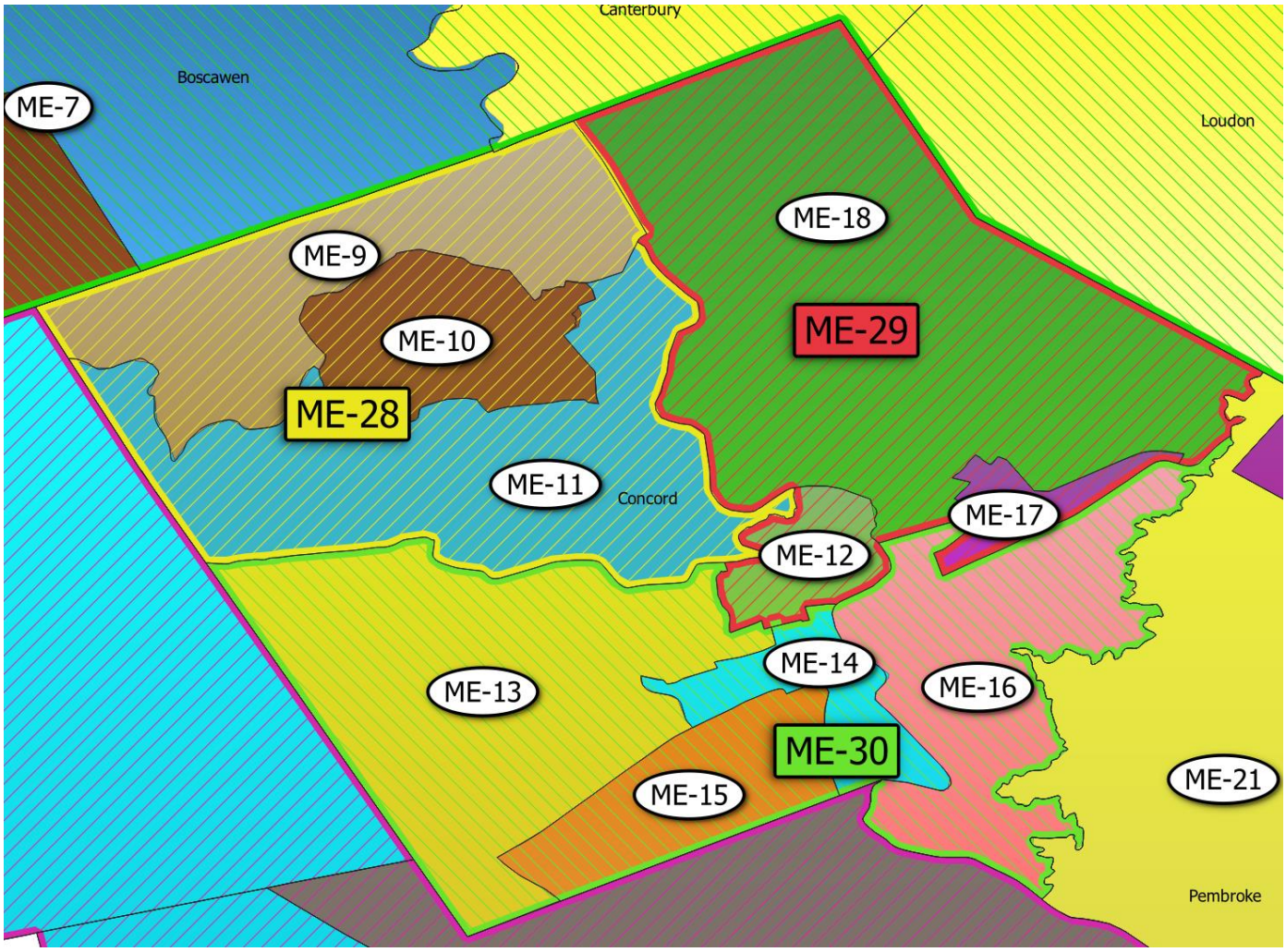
8.3. Hillsborough County Map Districts

Hillsborough County Proposed Map							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
HI-1	26,632	7	HI-3	1	Merrimack	0.51%	
HI-2	11,753	3			Amherst	3.22%	
HI-4	10,800	3			Antrim, Hancock, Peterborough	4.54%	Peterborough
HI-5	23,322	6	HI-7	1	Bedford	3.29%	
HI-6	18,577	5			Goffstown	-0.90%	
HI-8	5,204	1	HI-10	1	New Ipswich	-0.10%	
HI-9	4,949	1			Bennington, Greenfield, Sharon, Temple	-3.39%	
HI-11	9,061	2	HI-13	1	Brookline, Greenville, Mason	4.38%	Brookline
HI-12	8,342	2			Hollis	-2.30%	
HI-14	8,105	2	HI-16	1	Deering, Hillsborough, Windsor	-4.77%	Hillsborough
HI-15	9,092	2			Weare	4.41%	
HI-17	16,131	4	HI-20	1	Milford	4.01%	
HI-18	3,896	1			Wilton	0.87%	
HI-19	12,013	3			Francestown, Lyndeborough, Mont Vernon, New Boston	3.36%	New Boston
HI-21	25,394	6	HI-23	2	Hudson	-1.68%	
HI-22	8,478	2			Litchfield	-1.55%	
HI-24	14,222	4			Pelham	3.24%	
HI-25	9,696	2	HI-31	5	Manchester Ward 1	-0.80%	
HI-26	9,611	2			Manchester Ward 3	-1.41%	
HI-27	9,627	2			Manchester Ward 9	-1.30%	
HI-28	9,608	2			Manchester Ward 10	-1.43%	
HI-29	9,665	2			Manchester Ward 11	-1.02%	
HI-30	9,637	2			Manchester Ward 12	-1.22%	
HI-32	9,657	2	HI-38	5	Manchester Ward 2	-1.10%	
HI-33	9,643	2			Manchester Ward 4	-1.20%	
HI-34	9,631	2			Manchester Ward 5	-1.29%	
HI-35	9,603	2			Manchester Ward 6	-1.49%	
HI-36	9,644	2			Manchester Ward 7	-1.20%	
HI-37	9,622	2			Manchester Ward 8	-1.35%	
HI-39	10,119	3			Nashua Ward 1	-2.06%	
HI-40	10,348	3			Nashua Ward 2	0.16%	
HI-41	9,869	3			Nashua Ward 3	-4.48%	
HI-42	10,074	3			Nashua Ward 4	-2.49%	
HI-43	10,603	3			Nashua Ward 5	2.63%	
HI-44	9,853	3			Nashua Ward 6	-4.63%	
HI-45	9,820	3			Nashua Ward 7	-4.95%	
HI-46	10,267	3			Nashua Ward 8	-0.62%	
HI-47	10,369	3			Nashua Ward 9	0.36%	
Total	422,937		123			9.49%	4

9. Merrimack County Map



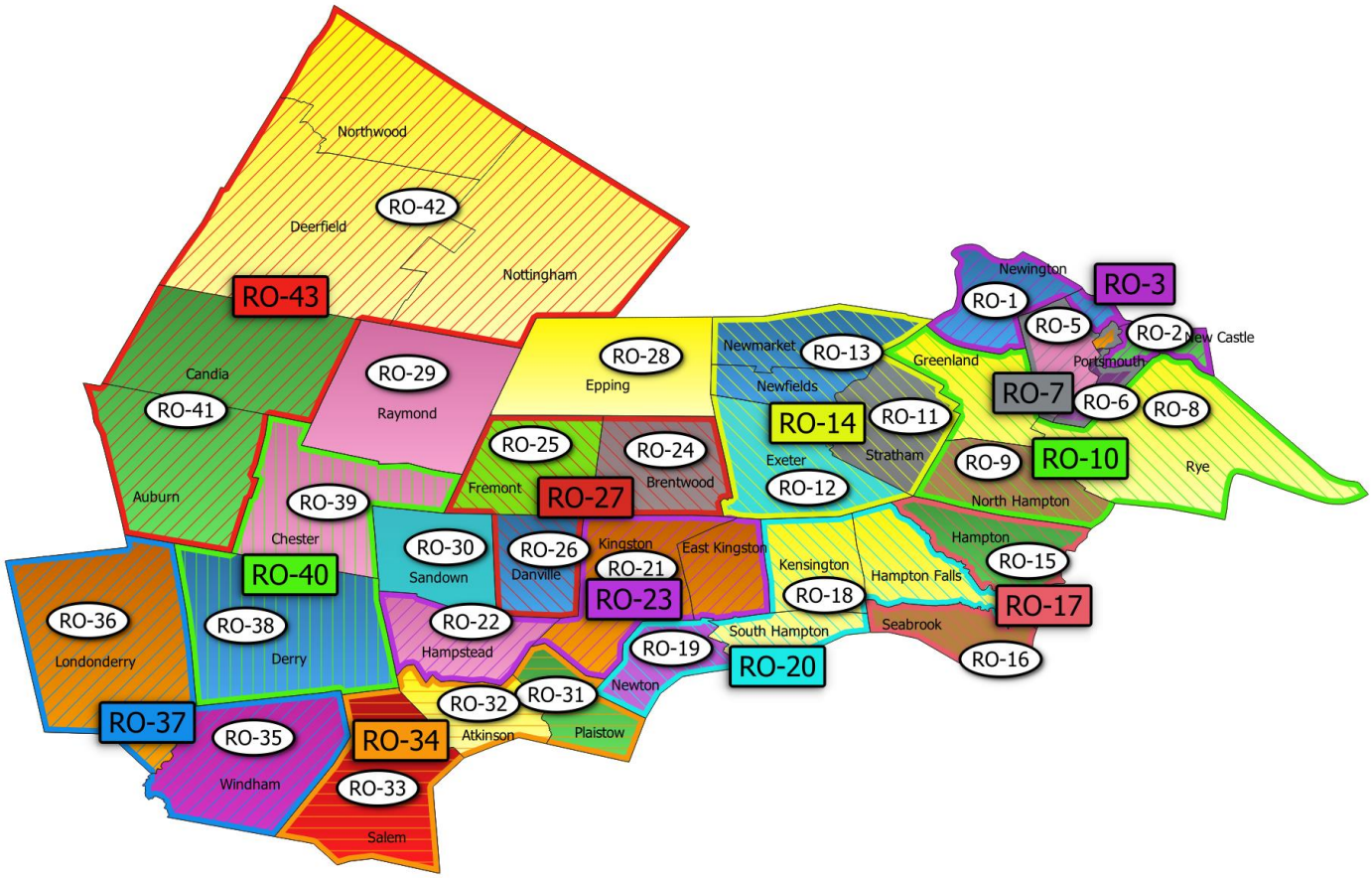
9.1. Concord Zoomed in Map



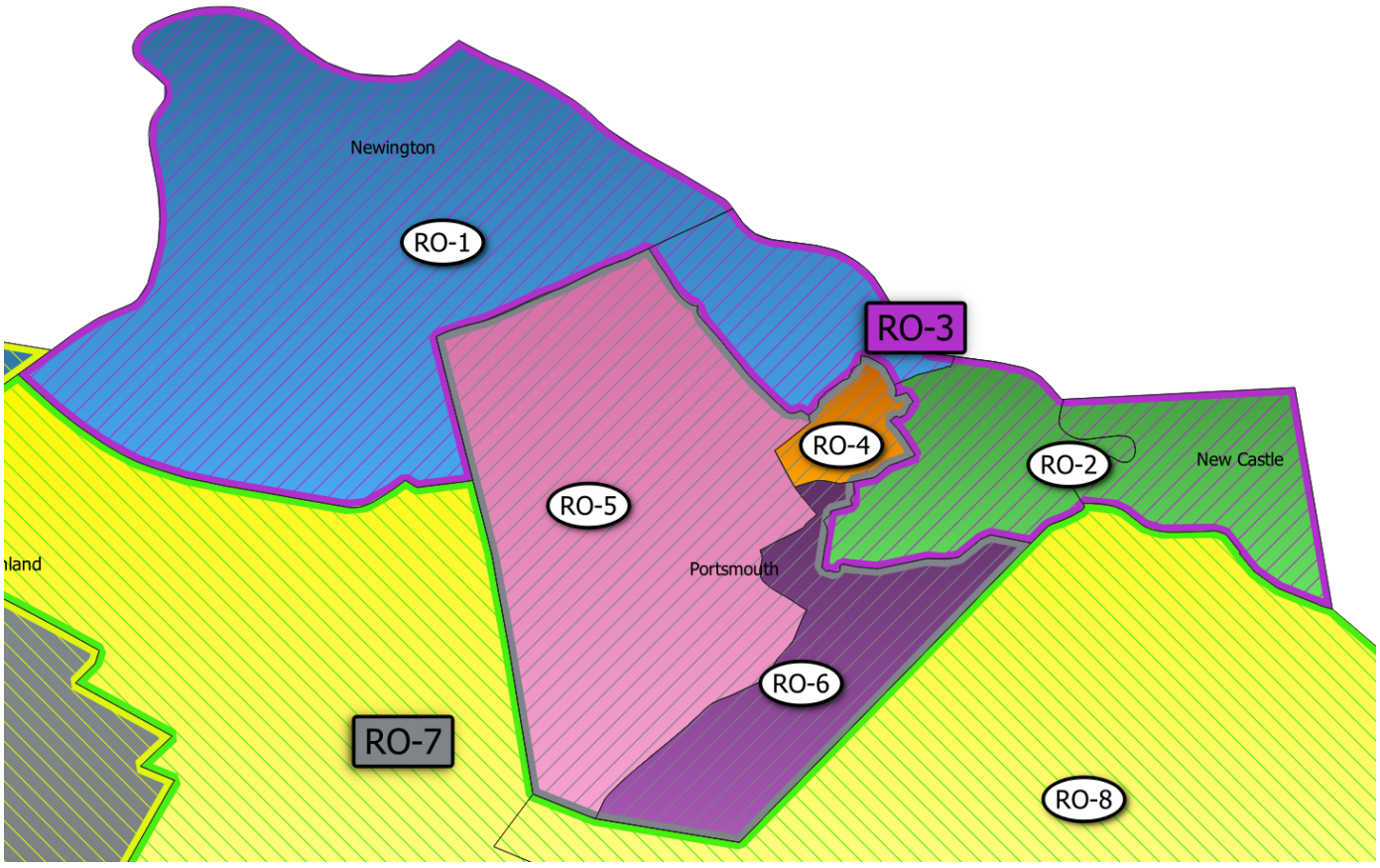
9.2. Merrimack County Map Districts

Merrimack County Proposed Map							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
ME-1	3,423	1			Andover, Hill	-0.60%	
ME-2	8,741	2	ME-26	1	Franklin Wards 1-3	-3.93%	
ME-3	4,872	1			Northfield	4.18%	
ME-4	7,057	2			Danbury, New London, Wilmot	2.46%	New London
ME-5	10,019	3			Bradford, Henniker, Newbury	-3.02%	Henniker
ME-6	8,250	2	ME-27	1	Salisbury, Sutton, Warner, Webster	-0.52%	
ME-7	3,998	1			Boscawen	-3.08%	
ME-8	7,965	2			Canterbury, Loudon	-3.39%	Loudon
ME-9	4,452	1	ME-28	1	Concord Ward 1	-2.73%	
ME-10	4,567	1			Concord Ward 2	-0.85%	
ME-11	4,512	1			Concord Ward 3	-1.75%	
ME-12	4,398	1	ME-29	1	Concord Ward 4	-3.92%	
ME-17	4,543	1			Concord Ward 9	-1.55%	
ME-18	4,421	1			Concord Ward 10	-3.54%	
ME-13	4,338	1	ME-30	1	Concord Ward 5	0.46%	
ME-14	4,231	1			Concord Ward 6	-1.53%	
ME-15	4,310	1			Concord Ward 7	-0.06%	
ME-16	4,204	1			Concord Ward 8	-2.03%	
ME-19	8,919	2	ME-31	1	Dunbarton, Hopkinton	2.77%	Hopkinton
ME-20	8,229	2			Bow	-3.64%	
ME-21	7,207	2			Pembroke	4.64%	
ME-22	6,740	2			Chichester, Pittsfield	-2.14%	Pittsfield
ME-23	4,834	1	ME-32	2	Epsom	0.55%	
ME-24	4,707	1			Allenstown	-1.36%	
ME-25	14,871	3			Hooksett	2.37%	
Total	153,808	45				8.57%	5

10. Rockingham County Map



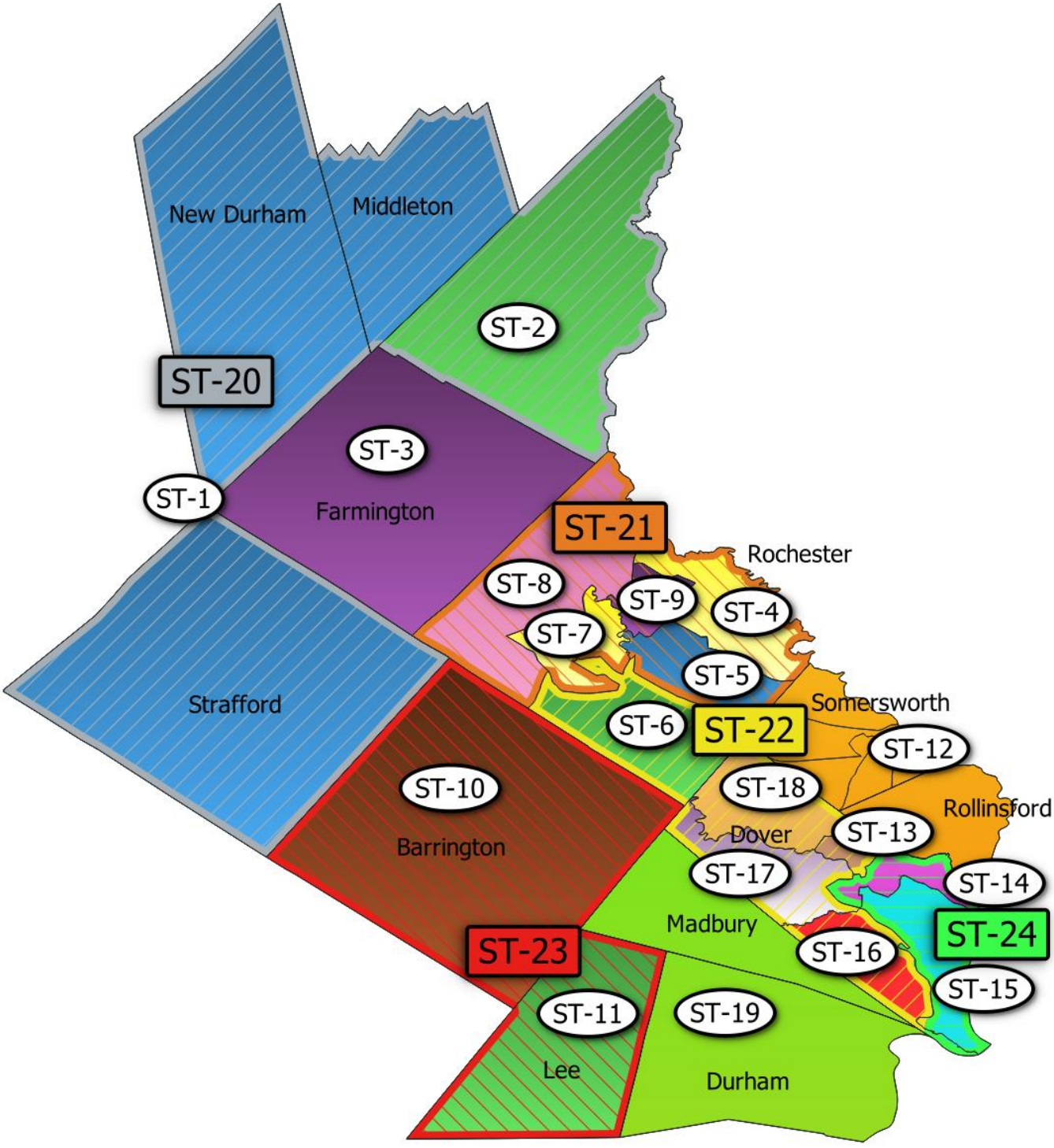
10.1. Portsmouth Zoomed in Map



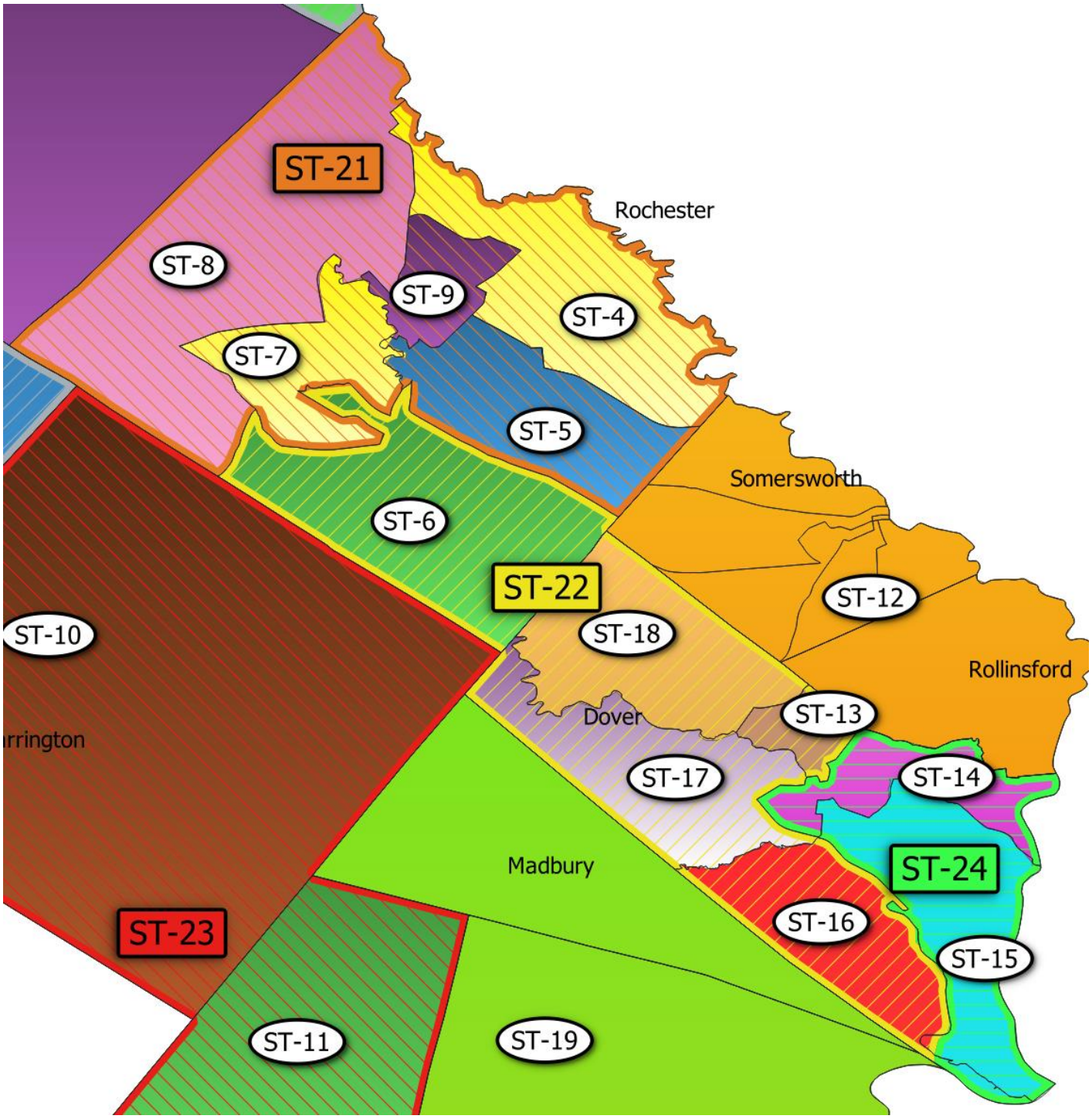
10.2. Rockingham County Map Districts

Rockingham County Proposed Map							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
RO-1	5,087	1	RO-3	1	Portsmouth Ward 1, Newington	-1.08%	Portsmouth Ward 1
RO-2	5,227	1			Portsmouth Ward 5, New Castle	0.73%	Portsmouth Ward 5
RO-4	4,549	1	RO-7	1	Portsmouth Ward 2	-1.29%	
RO-5	4,528	1			Portsmouth Ward 3	-1.63%	
RO-6	4,376	1			Portsmouth Ward 4	-4.12%	
RO-8	9,610	2	RO-10	1	Greenland, Rye	4.15%	Greenland, Rye
RO-9	4,538	1			North Hampton	-0.23%	
RO-11	7,669	2	RO-14	1	Stratham	0.33%	
RO-12	16,049	4			Newfields, Newmarket	4.50%	Newmarket
RO-13	11,199	3			Exeter	-2.07%	
RO-15	16,214	4	RO-17	1	Hampton	1.06%	
RO-16	8,401	2			Seabrook	4.19%	
RO-18	5,392	1	RO-20	1	Hampton Falls, Kensington, South Hampton	2.47%	
RO-19	4,820	1			Newton	-4.92%	
RO-21	8,643	2	RO-23	1	East Kingston, Kingston	0.79%	Kingston
RO-22	8,998	2			Hampstead	4.09%	
RO-24	4,490	1	RO-27	1	Brentwood	-1.92%	
RO-25	4,739	1			Fremont	2.12%	
RO-26	4,408	1			Danville	-3.27%	
RO-28	7,125	2			Epping	3.45%	
RO-29	10,684	3			Raymond	3.41%	
RO-30	6,548	2			Sandown	-4.93%	
RO-31	7,830	2	RO-34	1	Plaistow	4.58%	
RO-32	7,087	2			Atkinson	-4.62%	
RO-33	30,089	8			Salem	0.79%	
RO-35	15,817	4	RO-37	1	Windham	4.86%	
RO-36	25,826	7			Londonderry	-1.59%	
RO-38	34,317	7	RO-40	4	Derry	-4.83%	
RO-39	5,232	1			Chester	-0.65%	
RO-41	9,959	2	RO-43	2	Auburn, Candia	3.03%	Auburn, Candia
RO-42	14,725	3			Deerfield, Northwood, Nottingham	1.97%	Deerfield, Northwood, Nottingham
Total	309,089	90				9.80%	11

11. Strafford County Map



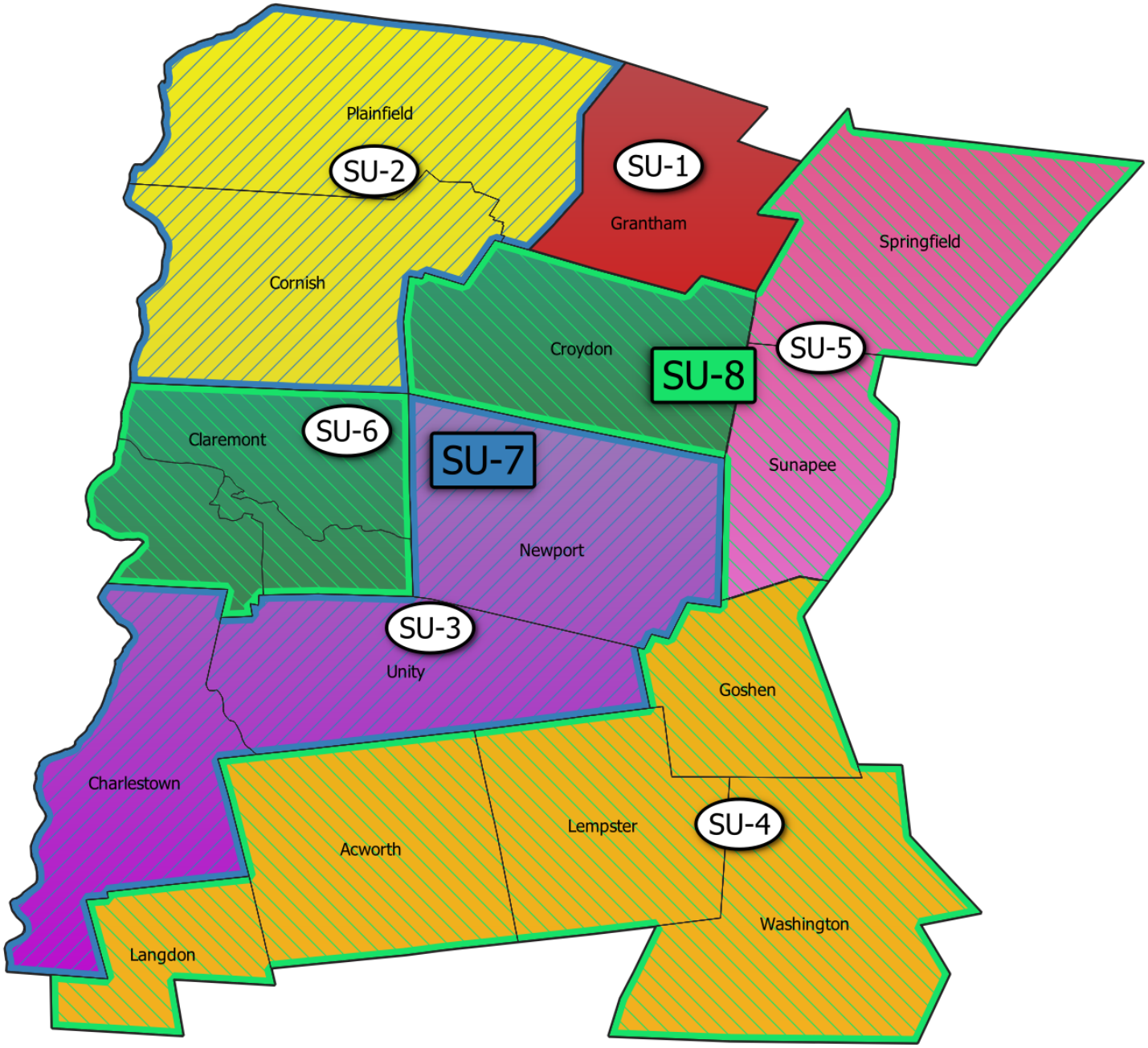
11.1. Dover/Rochester Zoomed in Map



11.2. Strafford County Map Districts

Strafford County Proposed Map							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
ST-1	8,746	2	ST-20	1	Middleton, New Durham, Strafford	-4.57%	Strafford
ST-2	4,482	1			Milton	-2.79%	
ST-3	6,722	2			Farmington	-2.40%	
ST-4	5,387	1	ST-21	3	Rochester Ward 1	-2.01%	
ST-5	5,388	1			Rochester Ward 2	-2.00%	
ST-7	5,498	1			Rochester Ward 4	-0.75%	
ST-8	5,419	1			Rochester Ward 5	-1.64%	
ST-9	5,410	1			Rochester Ward 6	-1.75%	
ST-6	5,390	1	ST-22	3	Rochester Ward 3	-1.70%	
ST-13	5,482	1			Dover Ward 1	-0.65%	
ST-16	5,439	1			Dover Ward 4	-1.14%	
ST-17	5,496	1			Dover Ward 5	-0.49%	
ST-18	5,501	1			Dover Ward 6	-0.43%	
ST-10	9,326	2	ST-23	1	Barrington	1.29%	
ST-11	4,520	1			Lee	-1.05%	
ST-12	14,452	4			Somersworth Wards 1-5, Rollinsford	4.91%	
ST-14	5,414	1	ST-24	1	Dover Ward 2	4.79%	
ST-15	5,409	1			Dover Ward 3	4.73%	
ST-19	17,408	5			Madbury, Durham	1.10%	Durham
Total	130,889	38				9.48%	2

12. Sullivan County Map



12.1. Sullivan County Map Districts

Sullivan County Enacted Map							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
SU-1	3,404	1			Grantham	-1.16%	
SU-2	4,075	1	SU-7	1	Cornish, Plainfield	-4.88%	
SU-3	12,623	3			Charlestown, Newport, Unity	-2.41%	Charlestown, Newport
SU-4	4,610	1	SU-8	2	Acworth, Goshen, Langdon, Lempster, Washington	-4.49%	
SU-5	4,601	1			Springfield, Sunapee	-4.62%	
SU-6	13,750	3			Claremont Wards 1-3, Croydon	-4.88%	Claremont Ward 1, Claremont Ward 2, Claremont Ward 3
Total	43,063	13				3.73%	5

EXHIBIT H

Enacted NH House Maps

HB 50 – FINAL VERSION

Source - https://www.gencourt.state.nh.us/bill_Status/pdf.aspx?id=33504&q=billVersion

Index

1. Summary of Enacted Maps
2. Map Comparison Summary
3. Belknap County Map
    3.1. Belknap County Map Districts
4. Carroll County Map
    4.1. Carroll County Map Districts
5. Cheshire County Map
    5.1. Cheshire County Map Districts
6. Coos County Map
    6.1. Coos County Map Districts
7. Grafton County Map
    7.1. Grafton County Map Districts
8. Hillsborough County Map
    8.1. Manchester Zoomed in Map
    8.2. Nashua Zoomed in Map
    8.3. Hillsborough County Map Districts
9. Merrimack County Map
    9.1. Concord Zoomed in Map
    9.2. Merrimack County Map Districts
10. Rockingham County Map
    10.1. Portsmouth Zoomed in Map
    10.2. Rockingham County Map Districts
11. Strafford County Map
    11.1. Dover/Rochester Zoomed in Map
    11.2. Strafford County Map Districts
12. Sullivan County Map
    12.1. Sullivan County Map Districts

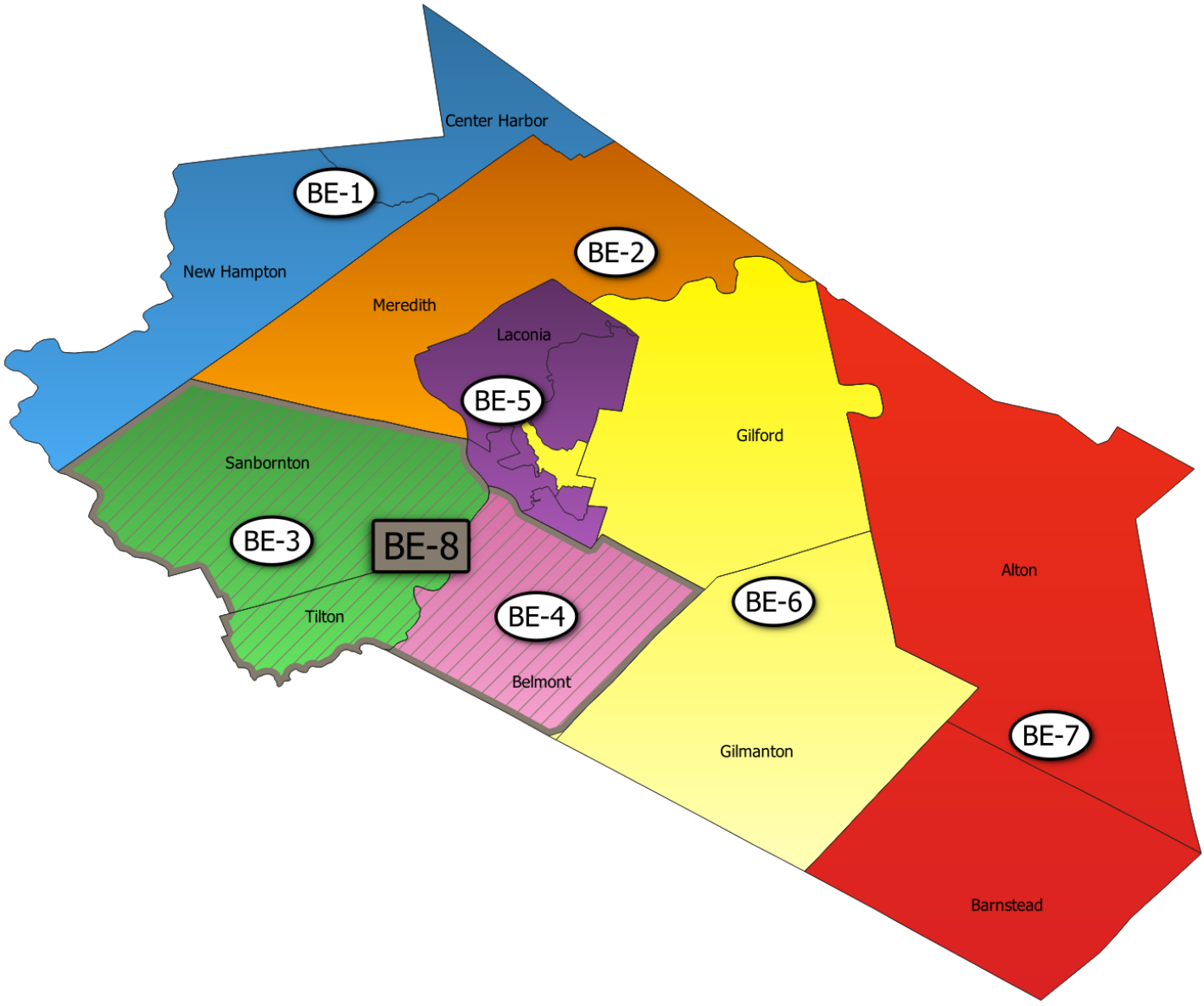
1. Summary of Enacted Maps

Enacted Maps Summary						
County	Population	# Reps	Min Dev	Max Dev	Deviation	Violations
Belknap	63,705	18	-3.28%	4.99%	8.27%	5
Carroll	50,107	15	-4.93%	1.54%	6.48%	3
Cheshire	76,458	22	-4.63%	5.18%	9.81%	5
Coos	31,268	9	-3.95%	4.80%	8.74%	0
Grafton	91,118	26	-3.91%	4.53%	8.44%	5
Hillsborough	422,937	123	-4.95%	4.80%	9.75%	6
Merrimack	153,808	45	-4.58%	4.64%	9.22%	7
Rockingham	314,176	91	-4.93%	4.86%	9.80%	13
Strafford	130,889	38	-4.17%	4.97%	9.13%	6
Sullivan	43,063	13	-4.88%	-1.16%	3.73%	5
Total	1,377,529	400	-4.95%	5.18%	10.13%	55

2. Map Comparison Summary

Enacted Maps vs. Map-a-Thon Proposed Maps Summary					
County	# Reps	Enacted Map Deviation	Proposed Map Deviation	Enacted Map Violations	Proposed Map Violations
Belknap	18	8.27%	8.27%	5	5
Carroll	15	6.48%	6.48%	3	3
Cheshire	22	9.81%	7.62%	5	3
Coos	9	8.74%	8.68%	0	0
Grafton	26	8.44%	9.86%	5	3
Hillsborough	123	9.75%	9.49%	6	4
Merrimack	45	9.22%	8.57%	7	5
Rockingham	91	9.80%	9.80%	13	11
Strafford	38	9.13%	9.48%	6	2
Sullivan	13	3.73%	3.73%	5	5
Total	400	10.13%	9.94%	55	41

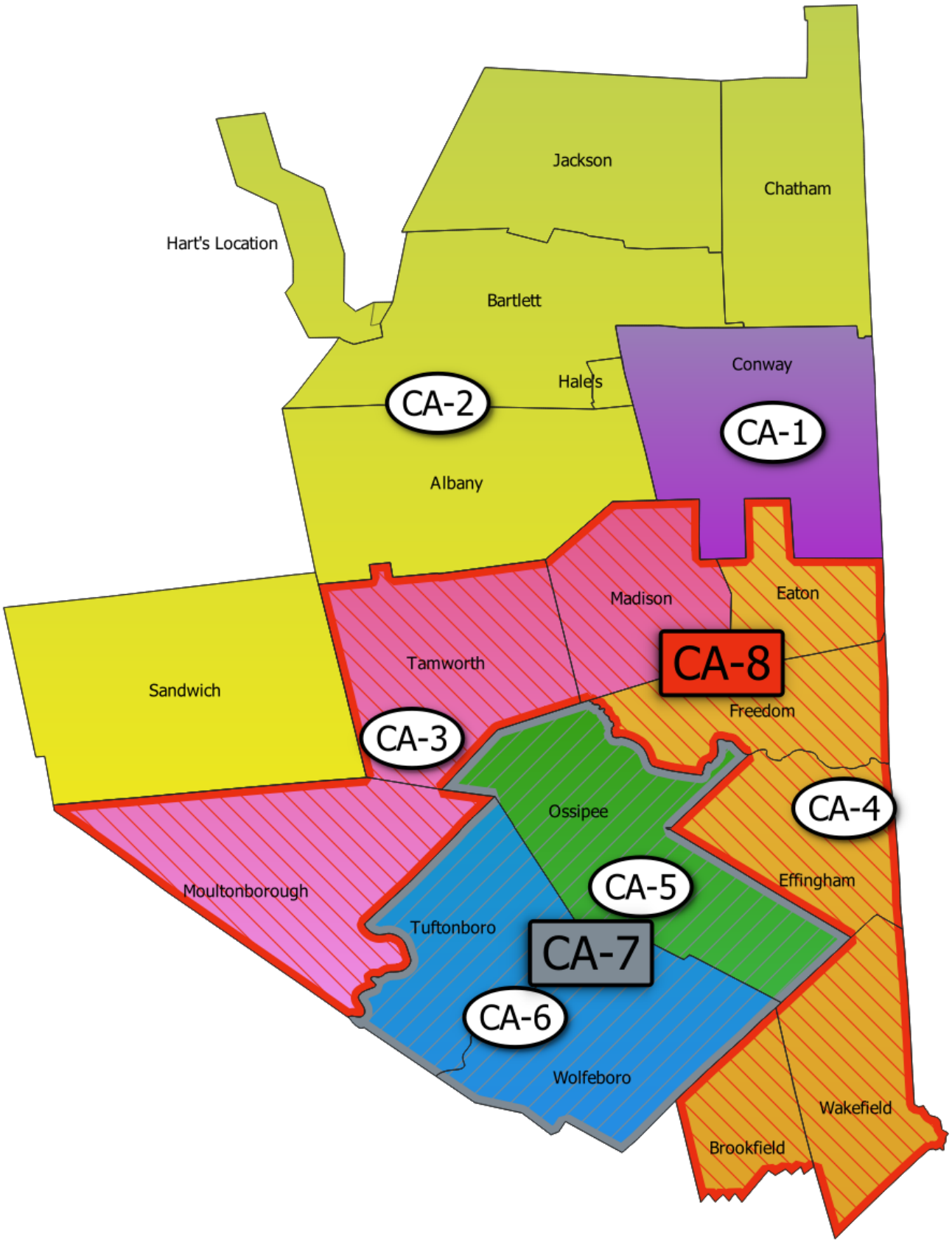
3. Belknap County Map



3.1. Belknap County Map Districts

Belknap County Enacted Map							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
BE-1	3,417	1			Center Harbor, New Hampton	-0.78%	
BE-2	6,662	2			Meredith	-3.28%	
BE-3	6,988	1	BE-8	2	Sanborton, Tilton	2.63%	Tilton
BE-4	7,314	1			Belmont	4.99%	
BE-5	14,117	4			Laconia Wards 1,3-6	2.48%	
BE-6	14,398	4			Gilford, Gilmanton, Laconia Ward 2	4.52%	Gilford, Gilmanton
BE-7	10,809	3			Alton, Barnstead	4.62%	Alton, Barnstead
Total	63,705	18				8.27%	5

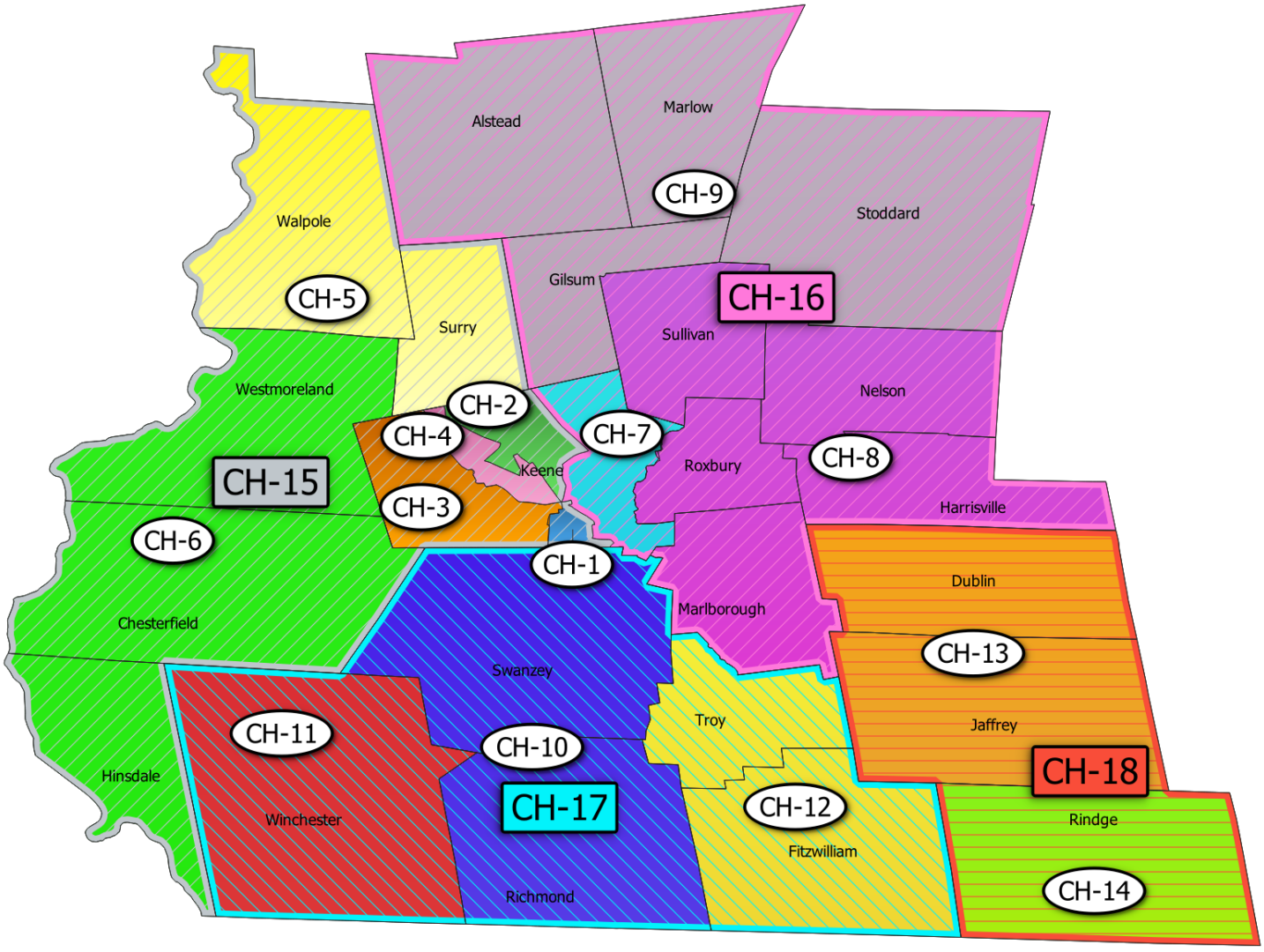
4. Carroll County Map



4.1. Carroll County Map Districts

Carroll County Enacted Map							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
CA-1	9,822	3			Conway	-4.93%	
CA-2	6,994	2			Albany, Bartlett, Chatham, Hale's Location, Hart's Location, Jackson, Sandwich	1.54%	
CA-3	10,295	2	CA-8	2	Madison, Moultonborough, Tamworth	-1.26%	Moultonborough
CA-4	9,741	2			Brookfield, Eaton, Effingham, Freedom, Wakefield	-4.84%	Wakefield
CA-5	4,372	1	CA-7	1	Ossipee	-4.54%	
CA-6	8,883	2			Tuftonboro, Wolfeboro	-3.40%	Wolfeboro
Total	50,107	15				6.48%	3

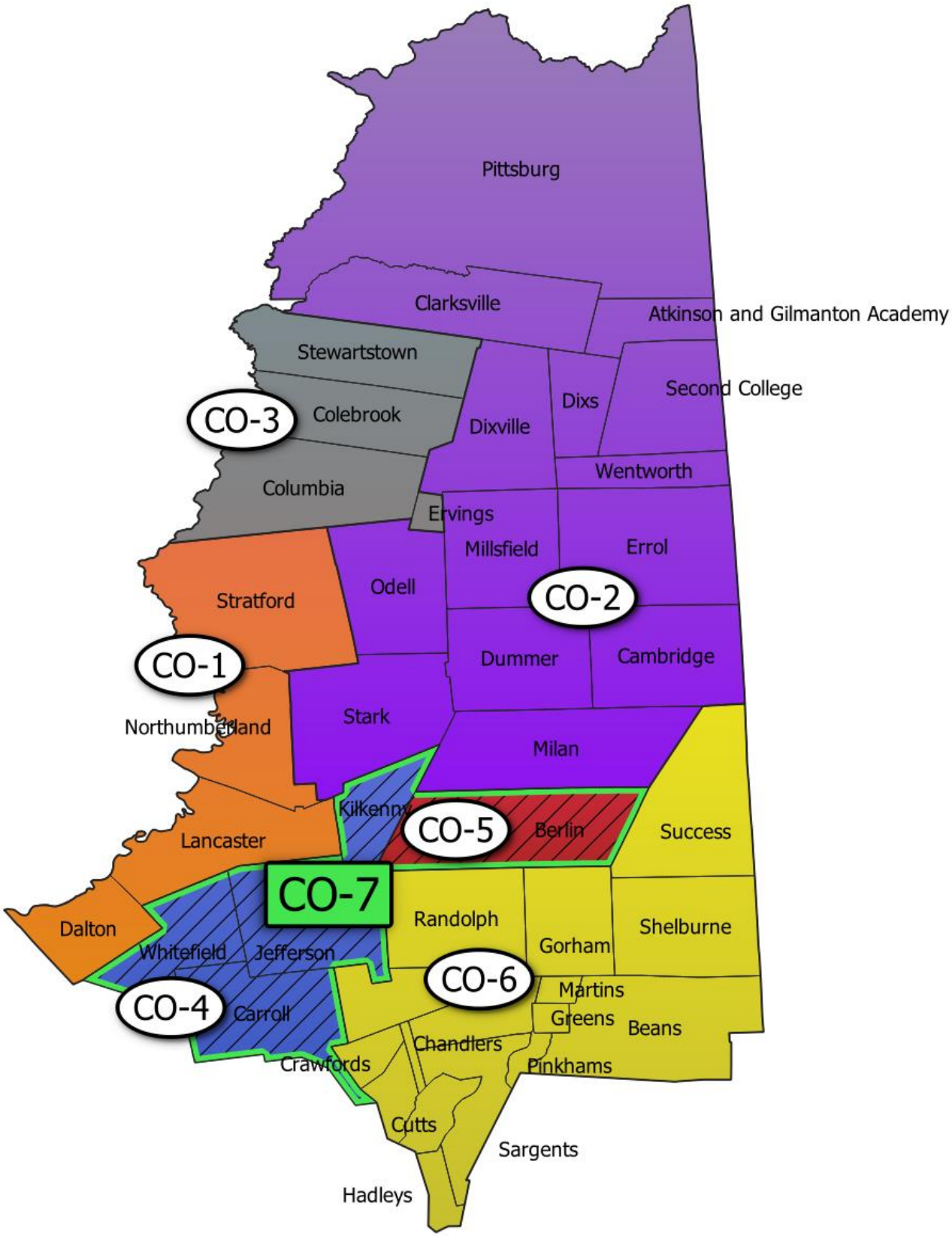
5. Cheshire County Map



5.1. Cheshire County Map Districts

Cheshire County Enacted Map							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
CH-1	4,643	1	CH-15	2	Keene Ward 1	4.61%	
CH-2	4,550	1			Keene Ward 3	2.97%	
CH-3	4,676	1			Keene Ward 5	5.18%	
CH-4	4,620	1			Keene Ward 4	4.20%	
CH-5	4,453	1			Surry, Walpole	1.25%	Walpole
CH-6	9,206	2			Chesterfield, Hinsdale, Westmoreland	3.91%	Chesterfield, Hinsdale
CH-7	4,558	1	CH-16	1	Keene Ward 2	-0.36%	
CH-8	4,587	1			Harrisville, Marlborough, Nelson, Roxbury, Sullivan	0.12%	
CH-9	4,739	1			Alstead, Gilsum, Marlow, Stoddard	2.59%	
CH-10	8,467	2	CH-17	1	Richmond, Swanzey	-1.47%	Swanzey
CH-11	4,150	1			Winchester	-3.03%	
CH-12	4,481	1			Fitzwilliam, Troy	3.10%	
CH-13	6,852	1	CH-18	2	Dublin, Jaffrey	-1.90%	Jaffrey
CH-14	6,476	1			Rindge	-4.63%	
Total	76,458	22				9.81%	5

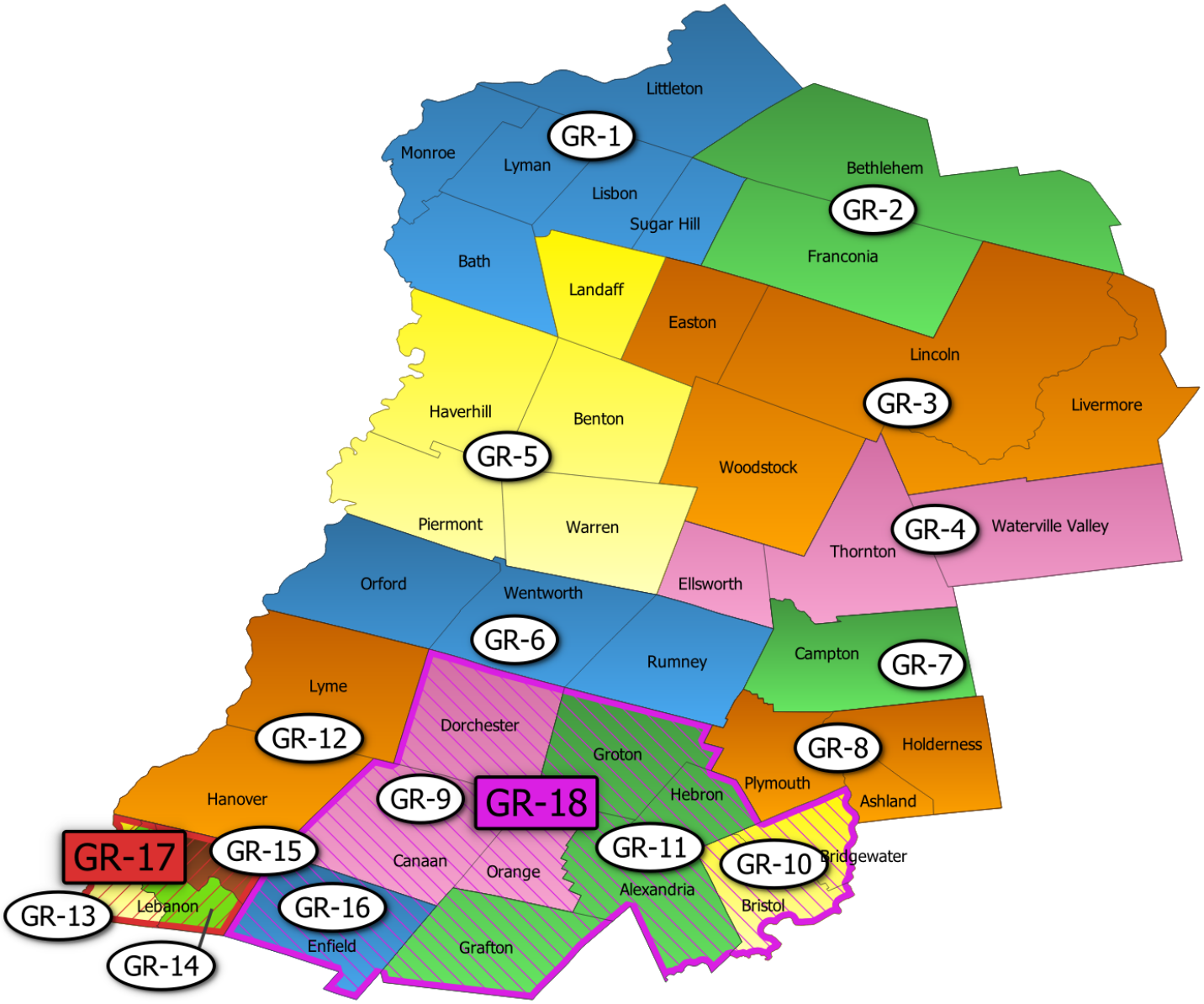
6. Coos County Map



6.1. Coos County Map Districts

Coos County Enacted Map							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
CO-1	6,939	2			Dalton, Lancaster, Northumberland, Stratford	0.75%	
CO-2	3,609	1			Atkinson & Gilmanton Academy Grant, Cambridge, Clarksville, Dix's Grant, Dixville, Dummer, Errol, Milan, Millsfield, Odell, Pittsburg, Second College Grant, Stark, Wentworth's Location	4.80%	
CO-3	3,556	1			Colebrook, Columbia, Erving's Location, Stewartstown	3.26%	
CO-4	4,353	1	CO-7	1	Carroll, Jefferson, Kilkenny, Whitefield	-3.95%	
CO-5	9,425	2			Berlin	1.96%	
CO-6	3,386	1			Bean's Grant, Bean's Purchase, Chandler's Purchase, Crawford's Purchase, Cutt's Grant, Gorham, Green's Grant, Hadley's Purchase, Low and Burbank's Grant, Martin's Location, Pinkham's Grant, Randolph, Sargent's Purchase, Shelburne, Success, Thompson and Meserve's Purchase	-1.68%	
Total	31,268	9				8.74%	0

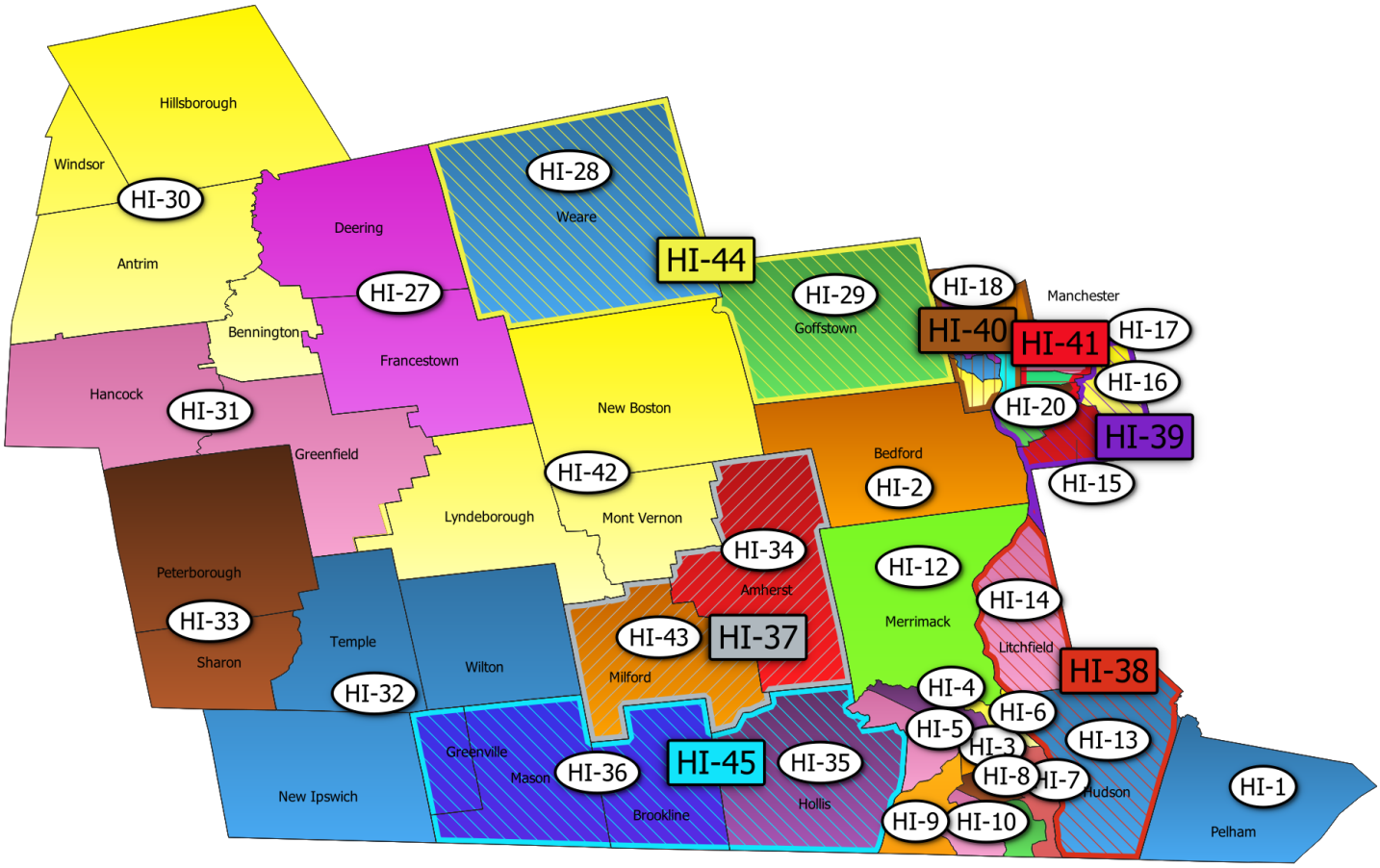
7. Grafton County Map



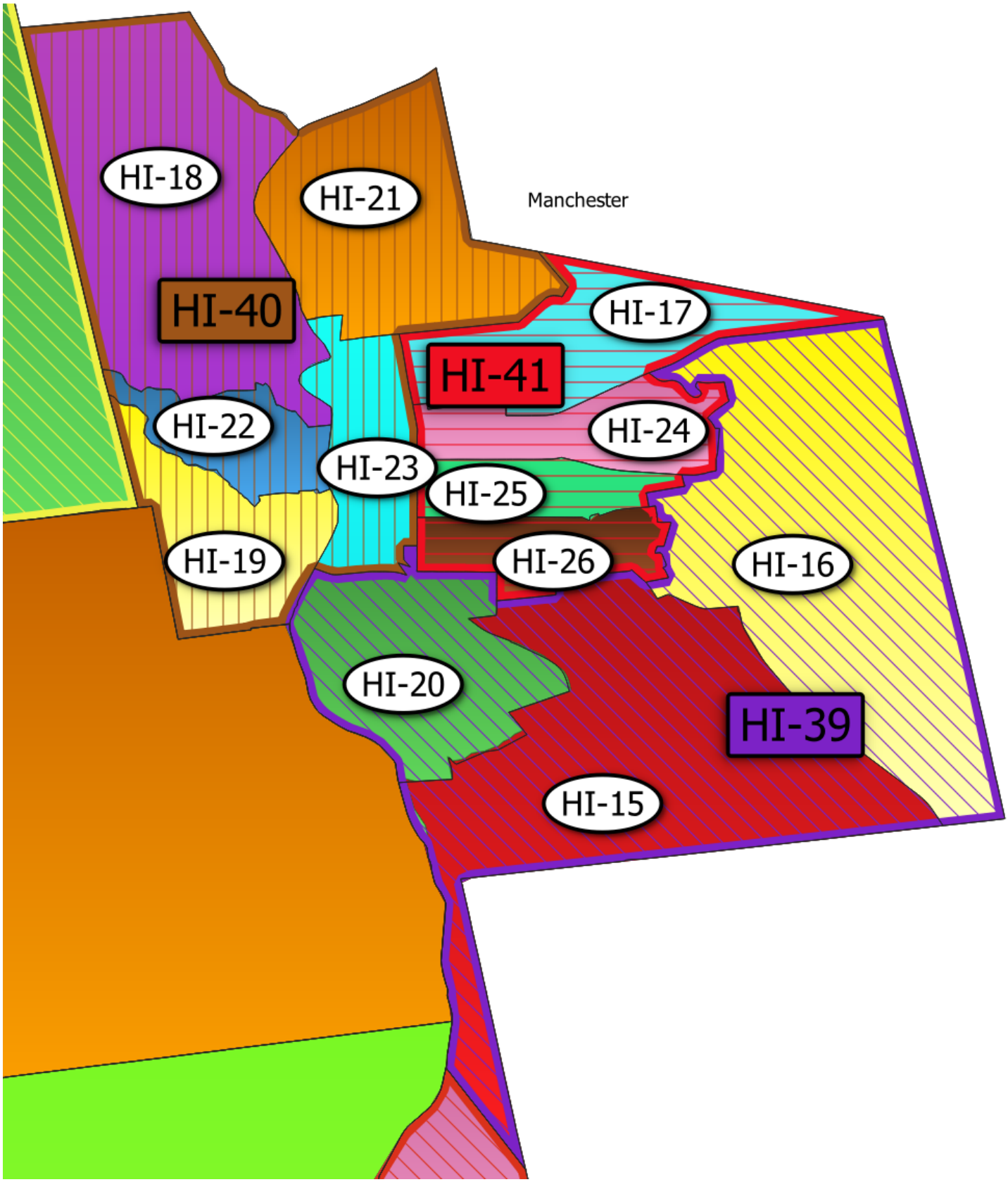
7.1. Grafton County Map Districts

Grafton County Enacted Map							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
GR-1	10,799	3			Bath, Lisbon, Littleton, Lyman, Monroe, Sugar Hill	4.53%	Littleton
GR-2	3,567	1			Bethlehem, Franconia	3.58%	
GR-3	3,359	1			Easton, Lincoln, Livermore, Woodstock	-2.46%	
GR-4	3,309	1			Ellsworth, Thorton, Waterville Valley	-3.91%	
GR-5	6,999	2			Benton, Haverhill, Landaff, Piermont, Warren	1.62%	Haverhill
GR-6	3,580	1			Orford, Rumney, Wentworth	3.95%	
GR-7	3,343	1			Campton	-2.93%	
GR-8	10,624	3			Ashland, Holderness, Plymouth	2.83%	Plymouth
GR-9	4,410	1	GR-18	1	Canaan, Dorchester, Orange	2.45%	Canaan
GR-10	4,404	1			Bridgewater, Bristol	2.33%	
GR-11	4,362	1			Alexandria, Grafton, Groton, Hebron	1.55%	
GR-16	4,465	1			Enfield	3.47%	
GR-12	13,615	4			Hanover, Lyme	-1.16%	Hanover
GR-13	4,762	1	GR-17	1	Lebanon Ward 1	3.70%	
GR-14	4,734	1			Lebanon Ward 2	3.24%	
GR-15	4,786	1			Lebanon Ward 3	4.09%	
Total	91,118	26				8.44%	5

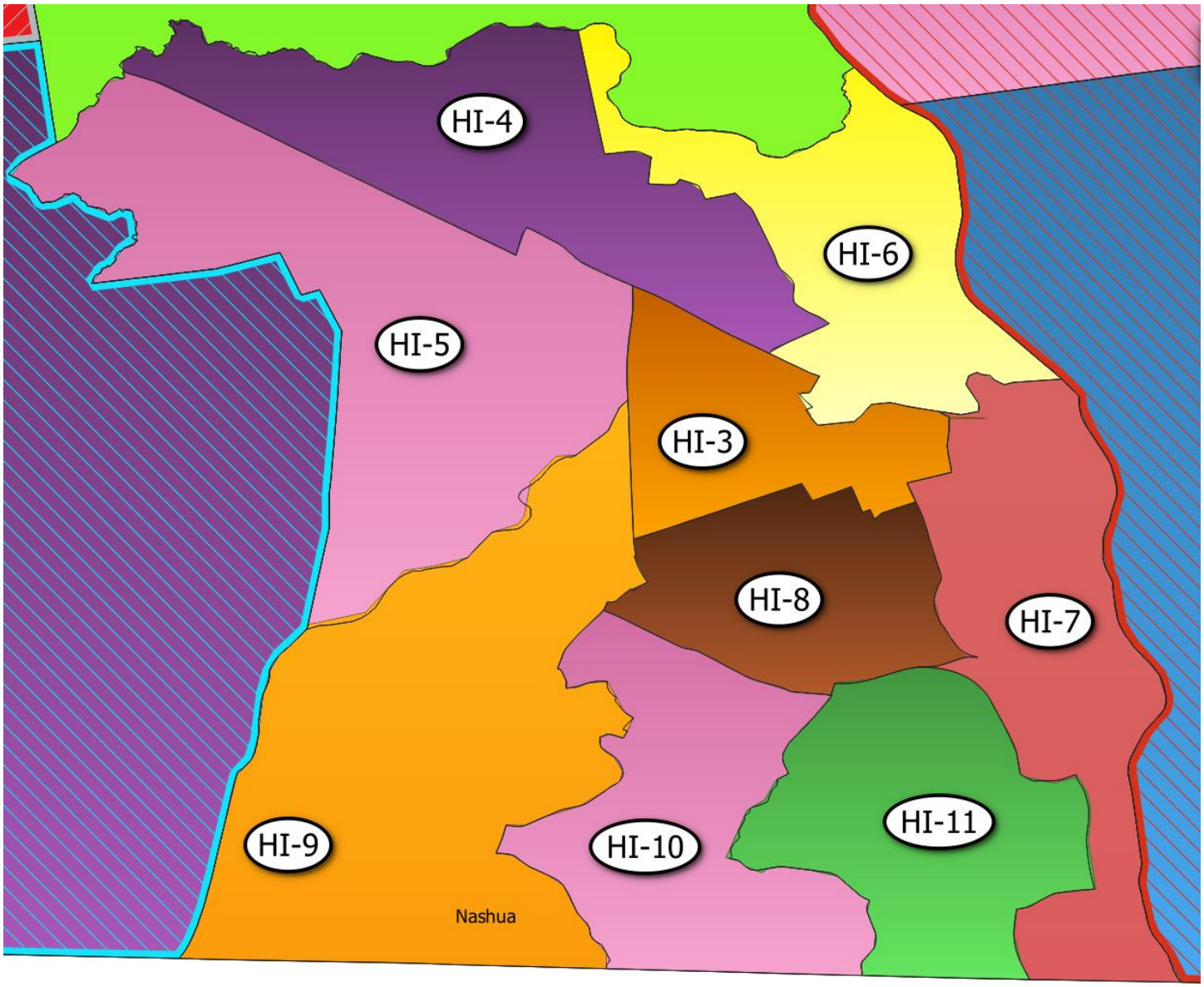
8. Hillsborough County Map



8.1. Manchester Zoomed in Map



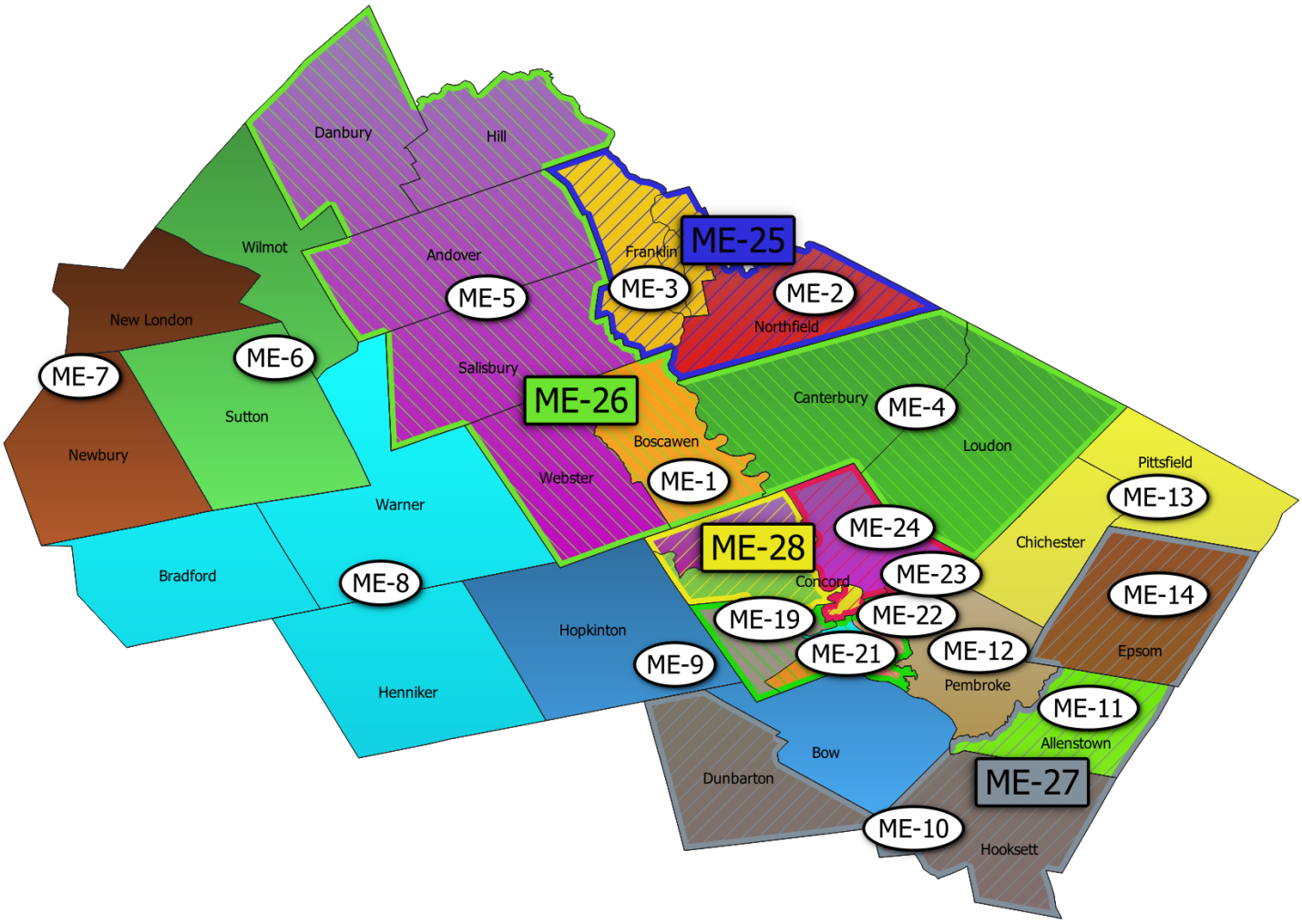
8.2. Nashua Zoomed in Map



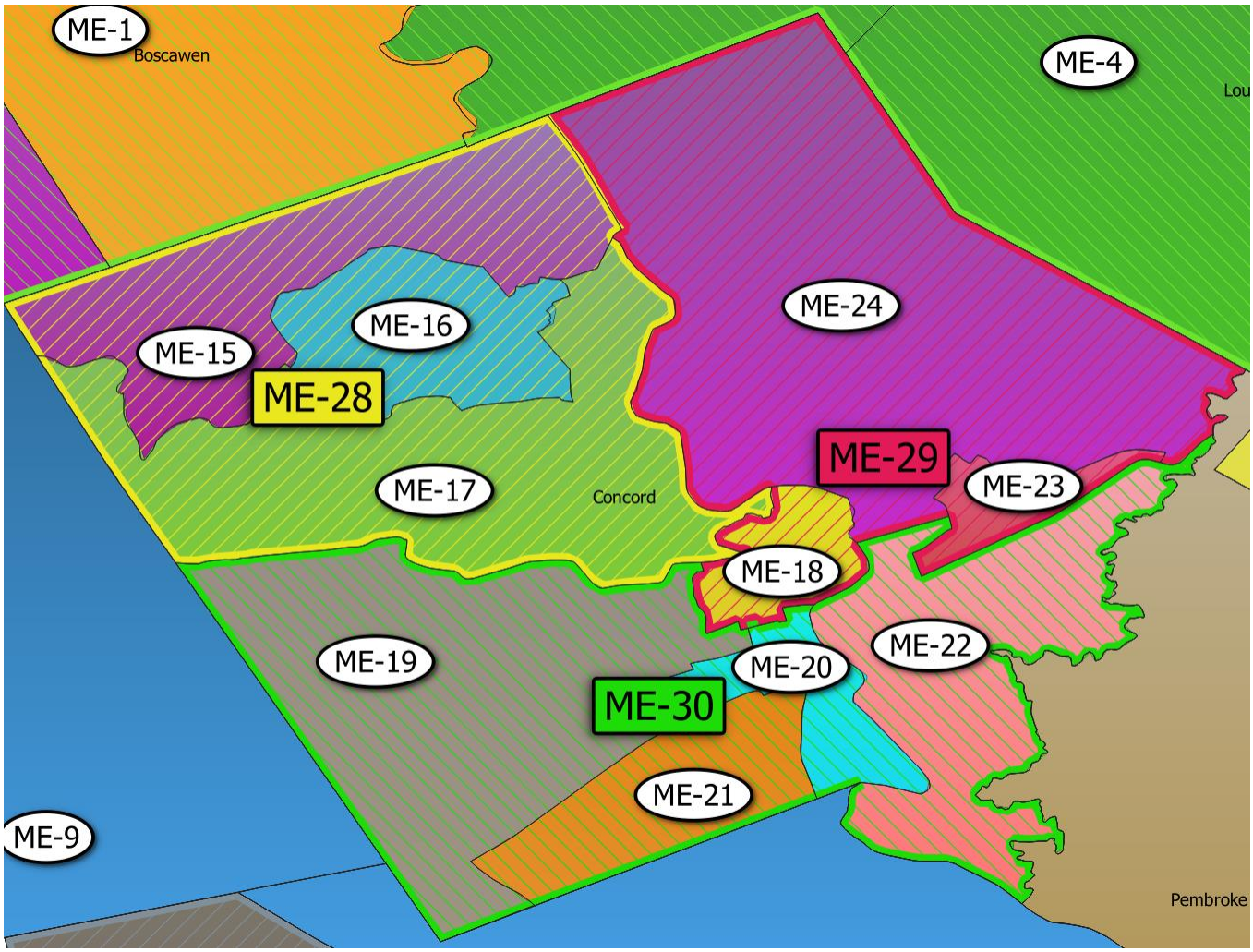
8.3. Hillsborough County Map Districts

Hillsborough County Enacted Map							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
HI-1	14,222	4			Pelham	3.24%	
HI-2	23,322	7			Bedford	-3.26%	
HI-3	10,074	3			Nashua Ward 4	-2.49%	
HI-4	10,348	3			Nashua Ward 2	0.16%	
HI-5	10,119	3			Nashua Ward 1	-2.06%	
HI-6	9,869	3			Nashua Ward 3	-4.48%	
HI-7	9,820	3			Nashua Ward 7	-4.95%	
HI-8	9,853	3			Nashua Ward 6	-4.63%	
HI-9	10,603	3			Nashua Ward 5	2.63%	
HI-10	10,369	3			Nashua Ward 9	0.36%	
HI-11	10,267	3			Nashua Ward 8	-0.62%	
HI-12	26,632	8			Merrimack	-3.33%	
HI-13	25,394	6	HI-38	2	Hudson	-1.68%	
HI-14	8,478	2			Litchfield	-1.55%	
HI-15	9,622	2	HI-39	2	Manchester Ward 8	4.76%	
HI-16	9,603	2			Manchester Ward 6	4.61%	
HI-20	9,627	2			Manchester Ward 9	4.80%	
HI-17	9,657	2	HI-41	3	Manchester Ward 2	1.93%	
HI-24	9,643	2			Manchester Ward 4	1.82%	
HI-25	9,631	2			Manchester Ward 5	1.73%	
HI-26	9,644	2			Manchester Ward 7	1.83%	
HI-18	9,637	2	HI-40	4	Manchester Ward 12	-0.04%	
HI-19	9,608	2			Manchester Ward 10	-0.26%	
HI-21	9,696	2			Manchester Ward 1	0.40%	
HI-22	9,665	2			Manchester Ward 11	0.17%	
HI-23	9,611	2			Manchester Ward 3	-0.23%	
HI-27	3,523	1			Deering, Francestown	2.30%	
HI-28	9,092	2	HI-44	2	Weare	-0.64%	
HI-29	18,577	4			Goffstown	0.96%	
HI-30	10,344	3			Antrim, Bennington, Hillsborough, Windsor	0.12%	Hillsborough
HI-31	3,447	1			Greenfield, Hancock	0.09%	
HI-32	10,482	3			New Ipswich, Temple, Wilton	1.46%	New Ipswich, Wilton
HI-33	6,777	2			Peterborough, Sharon	-1.61%	Peterborough
HI-34	11,753	3	HI-37	1	Amherst	-0.25%	
HI-43	16,131	4			Milford	2.31%	
HI-35	8,342	2	HI-45	1	Hollis	-2.30%	
HI-36	9,061	2			Brookline, Greenville, Mason	4.38%	Brookline
HI-42	10,394	3			Lyndeborough, Mont Vernon, New Boston	0.61%	New Boston
Total	422,937	123				9.75%	6

9. Merrimack County Map



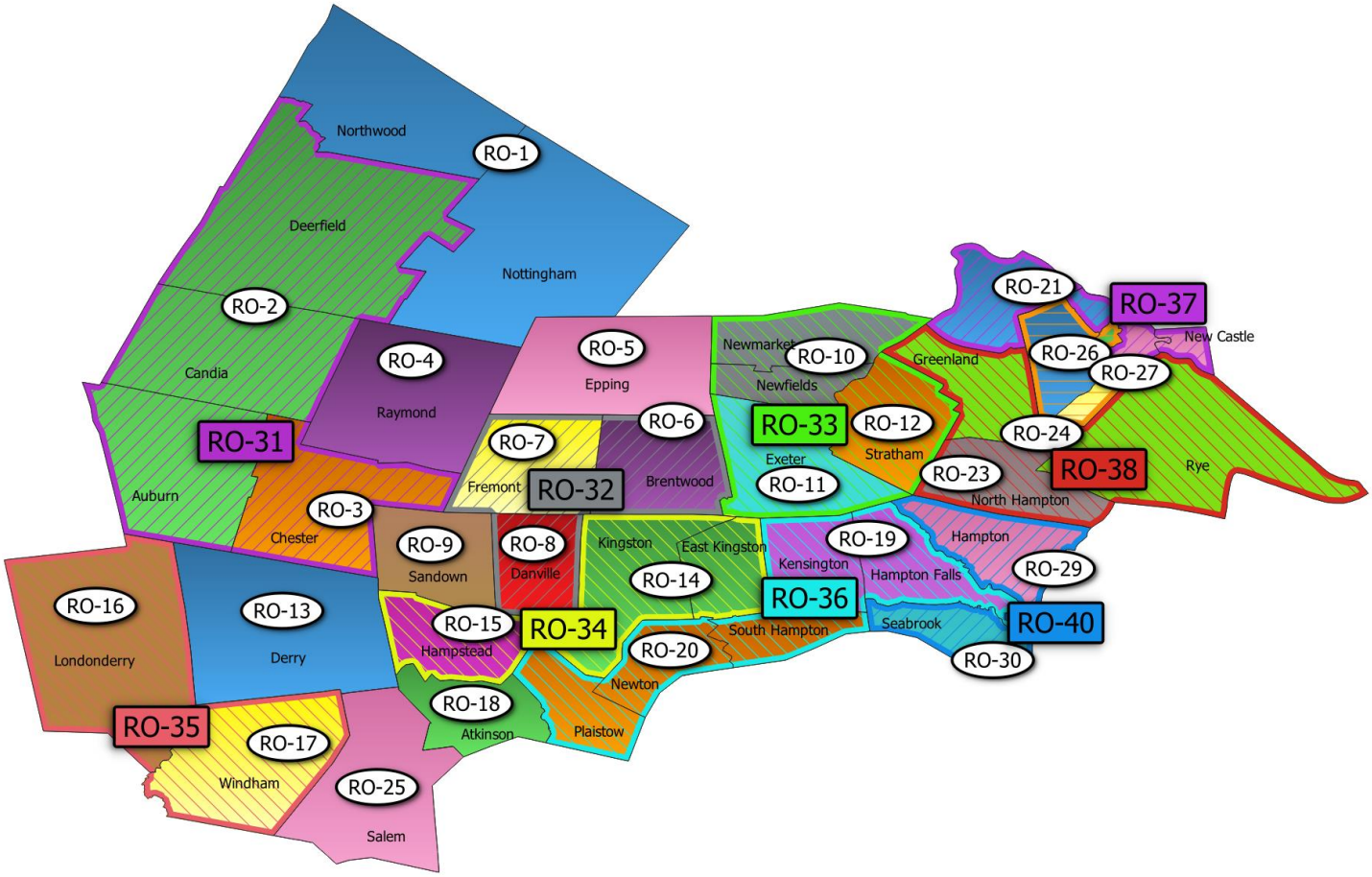
9.1. Concord Zoomed in Map



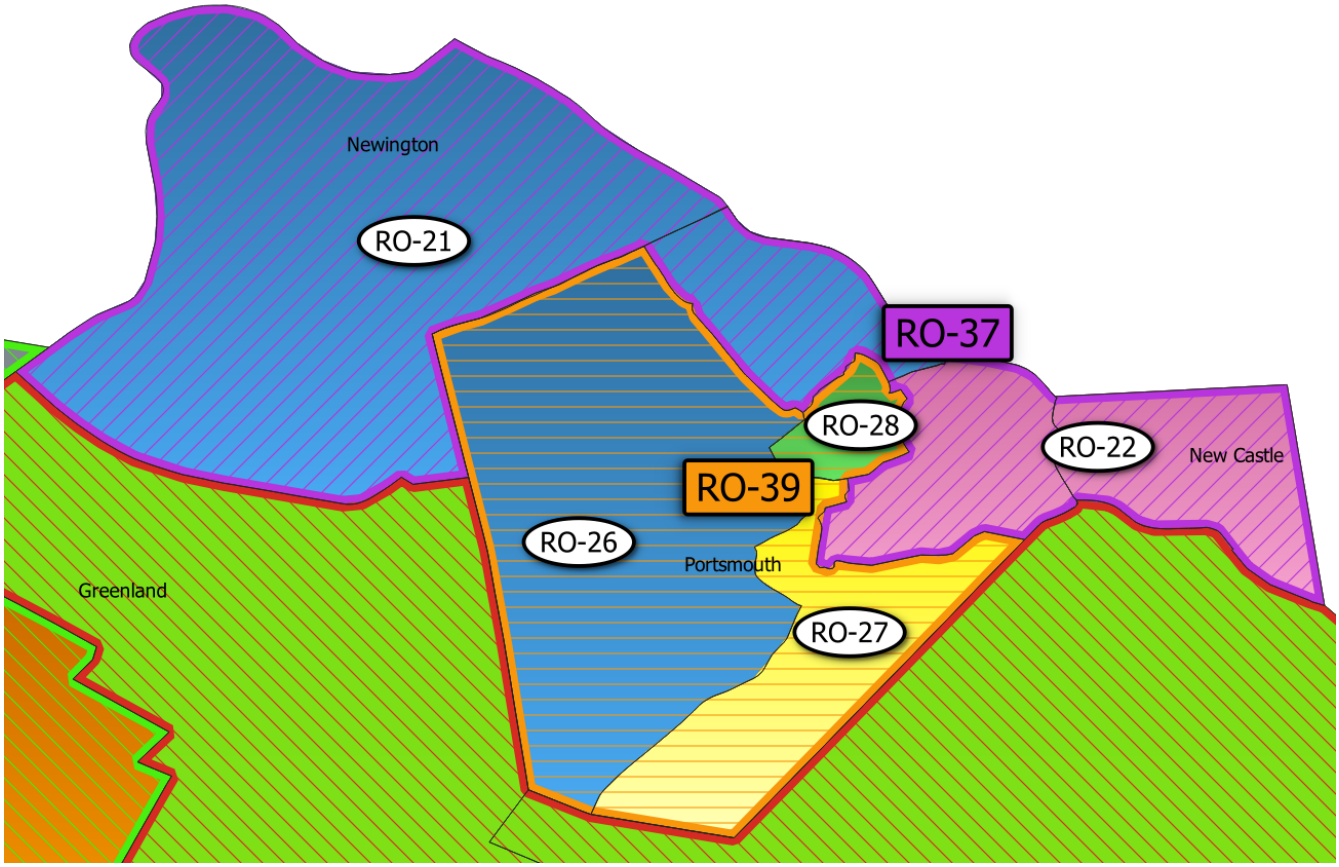
9.2. Merrimack County Map Districts

Merrimack County Enacted Map							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
ME-1	3,998	1	ME-26	1	Boscawen	-3.27%	
ME-4	7,965	2			Canterbury, Loudon	-3.58%	Loudon
ME-5	8,008	2			Andover, Danbury, Hill, Salisbury, Webster	-3.15%	
ME-2	4,872	1	ME-25	1	Northfield	4.18%	
ME-3	8,741	2			Franklin Wards 1-3	-3.93%	
ME-6	3,385	1			Sutton, Wilmot	-1.71%	
ME-7	6,572	2			New London, Newbury	-4.58%	New London
ME-8	10,784	3			Bradford, Henniker, Warner	4.38%	Henniker
ME-9	14,143	4			Bow, Hopkinton	2.67%	Bow, Hopkinton
ME-10	17,876	4	ME-27	2	Dunbarton, Hooksett	-2.14%	Hooksett
ME-11	4,707	1			Allenstown	1.74%	
ME-14	4,834	1			Epsom	3.77%	
ME-12	7,207	2			Pembroke	4.64%	
ME-13	6,740	2			Chichester, Pittsfield	-2.14%	Pittsfield
ME-15	4,452	1	ME-28	1	Concord Ward 1	-2.73%	
ME-16	4,567	1			Concord Ward 2	-0.85%	
ME-17	4,512	1			Concord Ward 3	-1.75%	
ME-18	4,398	1	ME-29	1	Concord Ward 4	-3.92%	
ME-23	4,543	1			Concord Ward 9	-1.55%	
ME-24	4,421	1			Concord Ward 10	-3.54%	
ME-19	4,338	1	ME-30	1	Concord Ward 5	0.46%	
ME-20	4,231	1			Concord Ward 6	-1.53%	
ME-21	4,310	1			Concord Ward 7	-0.06%	
ME-22	4,204	1			Concord Ward 8	-2.03%	
Total	153,808	45				9.22%	7

10. Rockingham County Map



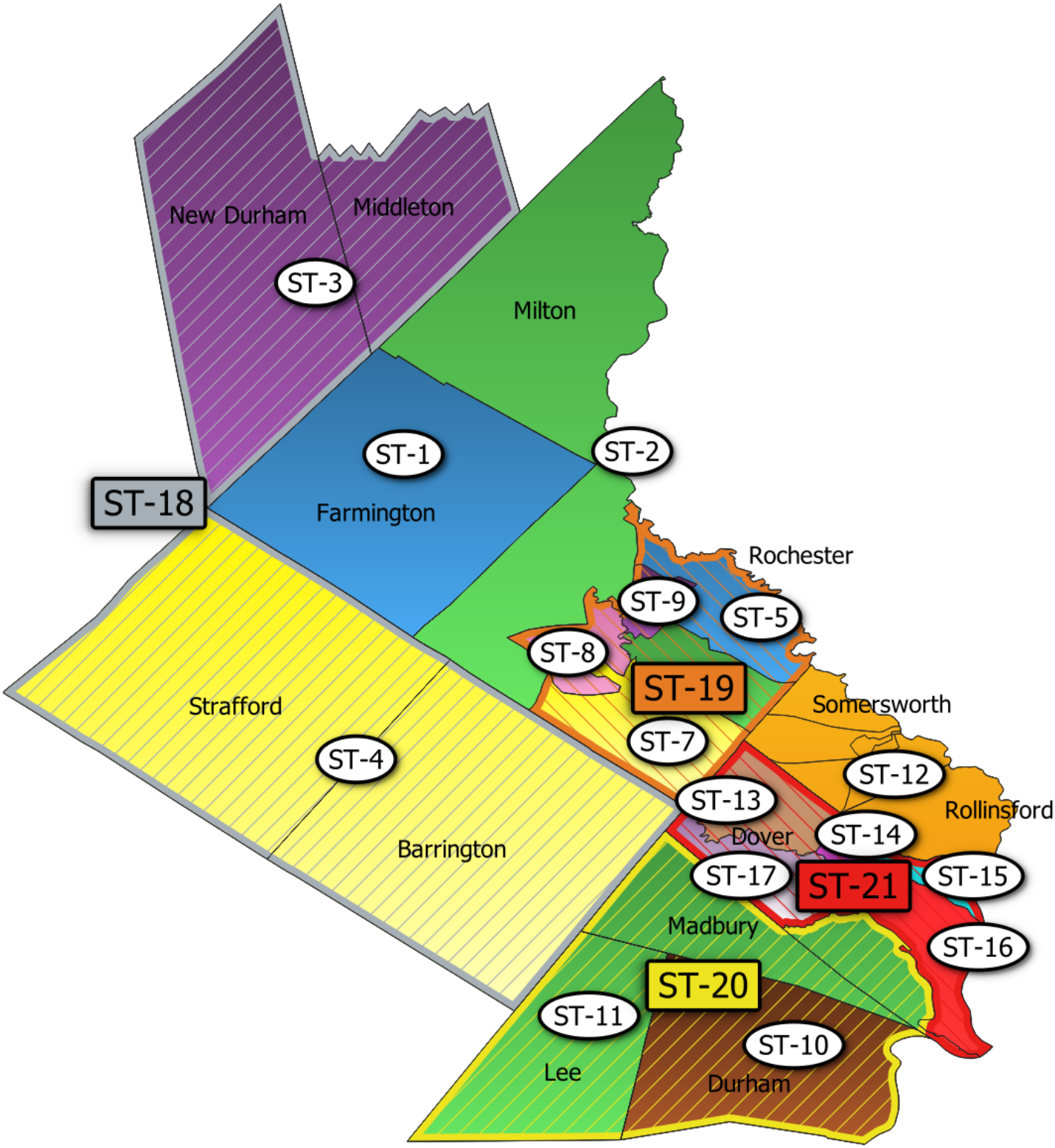
10.1. Portsmouth Zoomed in Map



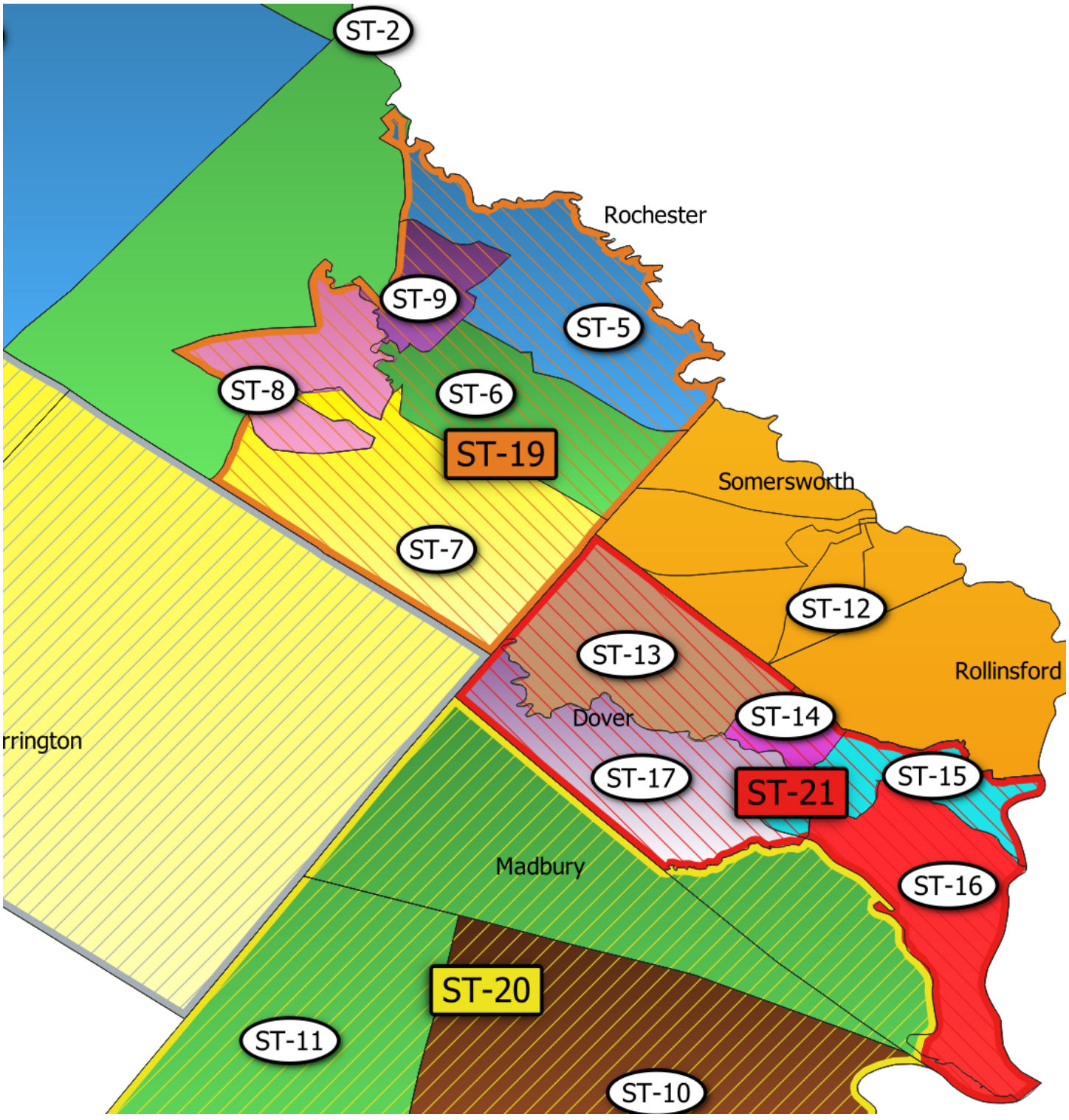
10.2. Rockingham County Map Districts

Rockingham County Enacted Map							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
RO-1	9,870	3			Northwood, Nottingham	-4.47%	Northwood, Nottingham
RO-2	14,814	3	RO-31	2	Auburn, Candia, Deerfield	-3.94%	Auburn, Candia, Deerfield
RO-3	5,232	1			Chester	-0.18%	
RO-4	10,684	3			Raymond	3.41%	
RO-5	7,125	2			Epping	3.45%	
RO-6	4,490	1	RO-32	1	Brentwood	-1.92%	
RO-7	4,739	1			Fremont	2.12%	
RO-8	4,408	1			Danville	-3.27%	
RO-9	6,548	2			Sandown	-4.93%	
RO-10	11,199	3	RO-33	1	Newfields, Newmarket	-2.07%	Newmarket
RO-11	16,049	4			Exeter	4.50%	
RO-12	7,669	2			Stratham	0.33%	
RO-13	34,317	10			Derry	-0.35%	
RO-14	8,643	2	RO-34	1	E. Kingston, Kingston	0.79%	Kingston
RO-15	8,998	2			Hampstead	4.09%	
RO-16	25,826	7	RO-35	1	Londonderry	-1.59%	
RO-17	15,817	4			Windham	4.86%	
RO-18	7,087	2			Atkinson	2.89%	
RO-19	4,498	1	RO-36	1	Hampton Falls, Kensington	4.55%	
RO-20	13,544	3			Newton, Plaistow, S. Hampton	4.86%	Newton, Plaistow
RO-21	5,087	1	RO-37	1	Newington, Portsmouth Ward 1	-1.08%	Portsmouth Ward 1
RO-22	5,227	1			New Castle, Portsmouth Ward 5	0.73%	Portsmouth Ward 5
RO-23	4,538	1	RO-38	1	N. Hampton	-0.23%	
RO-24	9,610	2			Greenland, Rye	4.15%	Greenland, Rye
RO-25	30,089	9			Salem	-2.92%	
RO-26	4,528	1	RO-39	1	Portsmouth Ward 3	-1.63%	
RO-27	4,376	1			Portsmouth Ward 4	-4.12%	
RO-28	4,549	1			Portsmouth Ward 2	-1.29%	
RO-29	16,214	4	RO-40	1	Hampton	1.06%	
RO-30	8,401	2			Seabrook	4.19%	
Total	314,176		91			9.80%	13

11. Strafford County Map



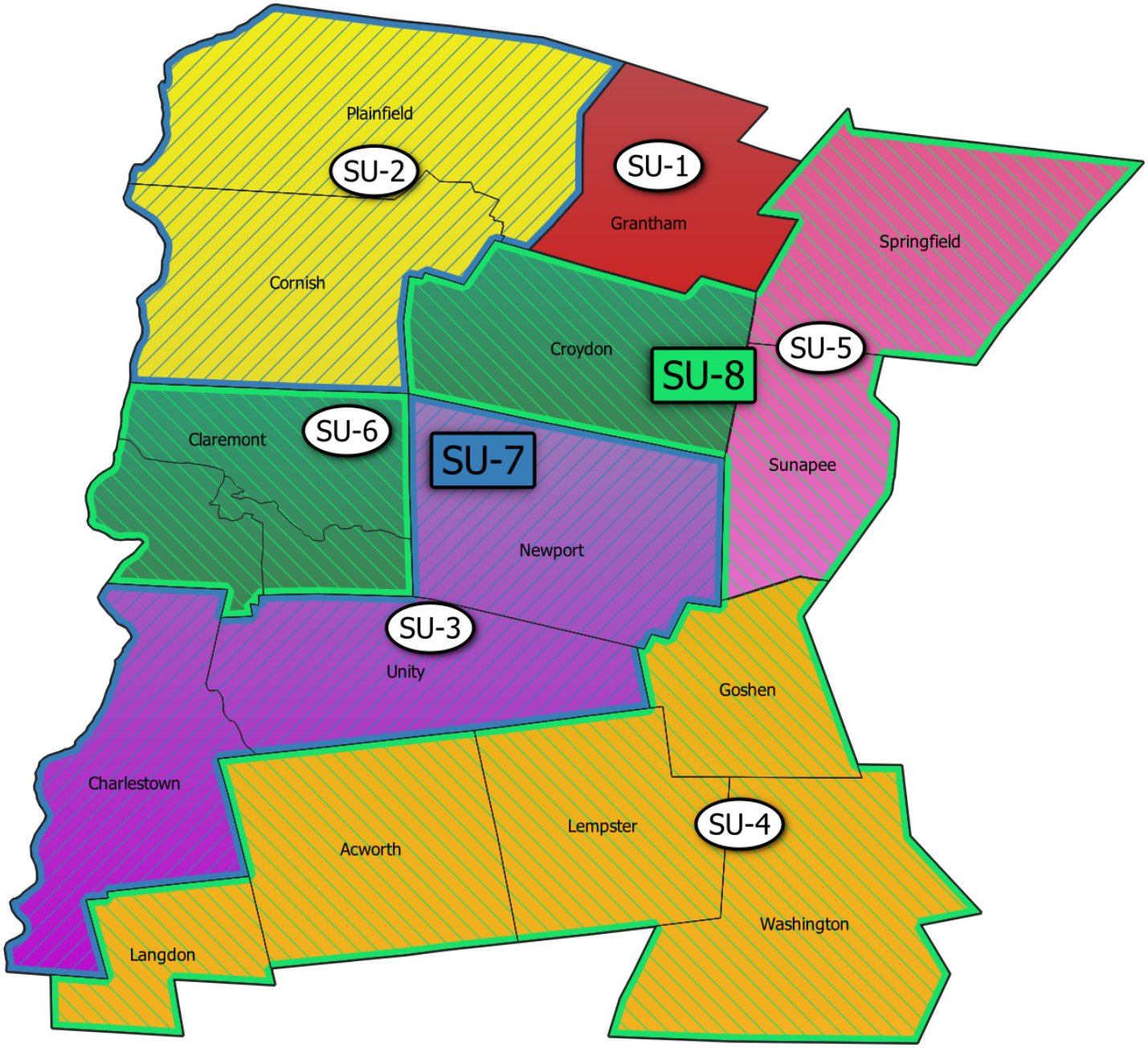
11.1. Dover/Rochester Zoomed in Map



11.2. Strafford County Map Districts

Strafford County Enacted Map							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
ST-1	6,722	2			Farmington	-2.40%	
ST-2	9,901	3			Milton, Rochester Ward 5	-4.17%	Milton, Rochester Ward 5
ST-3	4,516	1	ST-18	1	Middleton, New Durham	4.92%	
ST-4	13,556	3			Barrington, Strafford	4.97%	Barrington, Strafford
ST-5	5,387	1	ST-19	3	Rochester Ward 1	-2.05%	
ST-6	5,388	1			Rochester Ward 2	-2.04%	
ST-7	5,390	1			Rochester Ward 3	-2.01%	
ST-8	5,498	1			Rochester Ward 4	-0.79%	
ST-9	5,410	1			Rochester Ward 6	-1.79%	
ST-10	15,490	4	ST-20	1	Durham	-1.49%	
ST-11	11,877	3			Dover Ward 4, Lee, Madbury	0.43%	Dover Ward 4, Lee
ST-12	14,452	4			Rollinsford, Somersworth Wards 1-5	4.91%	
ST-13	5,501	1	ST-21	3	Dover Ward 6	-0.44%	
ST-14	5,482	1			Dover Ward 1	-0.66%	
ST-15	5,414	1			Dover Ward 2	-1.43%	
ST-16	5,409	1			Dover Ward 3	-1.49%	
ST-17	5,496	1			Dover Ward 5	-0.50%	
Total	130,889	38				9.13%	6

12. Sullivan County Map



12.1. Sullivan County Map Districts

Sullivan County Enacted Map							
District	Population	# Reps	F District	F Reps	Towns/Wards	% Deviation	Violations
SU-1	3,404	1			Grantham	-1.16%	
SU-2	4,075	1	SU-7	1	Cornish, Plainfield	-4.88%	
SU-3	12,623	3			Charlestown, Newport, Unity	-2.41%	Charlestown, Newport
SU-4	4,610	1	SU-8	2	Acworth, Goshen, Langdon, Lempster, Washington	-4.49%	
SU-5	4,601	1			Springfield, Sunapee	-4.62%	
SU-6	13,750	3			Claremont Wards 1-3, Croydon	-4.88%	Claremont Ward 1, Claremont Ward 2, Claremont Ward 3
Total	43,063	13				3.73%	5

STATE OF NEW HAMPSHIRE

STRAFFORD COUNTY SUPERIOR COURT

City of Dover et. al.

v.

David Scanlan, Secretary of State. al.

Docket No. 219-2022-CV-00224

Exhibit 2 (Plfs.' Mot. for Summ. Judgment)
State's Responses to Requests for Admission

THE STATE OF NEW HAMPSHIRE

STRAFFORD, SS SUPERIOR COURT

Docket No. 219-2022-CV-00224

City of Dover et al.

v.

David Scanlan, Secretary of State for New Hampshire et. al.

DEFENDANTS' RESPONSE TO PLAINTIFFS' FIRST REQUESTS FOR ADMISSIONS

The Defendants, by and through counsel, hereby respond to the Petitioners' First Requests For Admissions under Superior Court Rule 28.

OBJECTION TO DEFINITIONS AND INSTRUCTIONS[1]

The Defendants objects to the Plaintiffs' definition of "you," "your," and "State" as including "all elected and appointed officials, employees and agents." This definition is overly broad and unduly burdensome. The "State of New Hampshire," in its broadest sense, encompasses three branches of government made up of dozens of agencies, divisions, and other subparts, and acts through thousands of elected or appointed officials, employees, and other agents. It is neither feasible nor reasonable to expect discovery responses in this case, including responses to these requests for admissions, to encompass all information that may be within the possession of the state government as a whole or the personal knowledge of any state official, employee, or agent. This is especially true given that there is no temporal limit on the requests in question.

---

[1] Plaintiffs did not include definitions in their request for admissions. Defendants' answers will respond based on the common meaning of the terms used. Defendants' answers nevertheless incorporate by reference the Defendants' objections to the scope of the definitions given in the Plaintiffs' first set of interrogatories.

GENERAL OBJECTIONS

The Defendants incorporate the following General Objections into each and every individualized response contained herein, as set forth below, and into each and every amendment, supplement or modification to these responses hereafter provided to the specific interrogatories below. The Defendants do not waive any General Objection in response to any specific interrogatory.

1. The Defendants object to each interrogatory and document request to the extent it purports to require the disclosure or production of information subject to the attorney-client privilege, the work product doctrine, the executive privilege, the legislative privilege, the deliberative process privilege, or any other privilege or is otherwise immune from disclosure under the Superior Court Rules, the New Hampshire Rules of Evidence, or state law. Any inadvertent disclosure of information that is protected under the attorney-client privilege, the work product doctrine, the executive privilege, the legislative privilege, the deliberative process privilege, or any other privilege or is otherwise immune from disclosure under the Superior Court Rules, the New Hampshire Rules of Evidence, or state law shall not constitute a waiver of that privilege, immunity, or legal bar and shall not prevent the Defendants from objecting to discovery with respect to such information or use of such information in court. The Defendants will prepare an appropriate privilege log to the extent one is required in this case.

2. The Defendants object generally to each interrogatory to the extent that it seeks the production of information that is irrelevant to the issues germane to this matter and/or is overly broad, would subject the Defendants' offices to unreasonable,

oppressive, and undue burden and expense, and/or is not proportional to the needs of the case.

3. The Defendants object generally to each interrogatory insofar as it seeks to have the Defendant identify information or documents that are already in Plaintiffs' possession or are readily accessible to Plaintiffs or that the Plaintiffs may produce in this case.

4. The Defendants object generally to each interrogatory to the extent that they purport to seek information which is not within the knowledge, possession, custody, or control of the defendants, including but not limited to the knowledge of past legislatures and legislative committees.

5. The defendants object generally to each interrogatory to the extent that it calls for speculation and conjecture, opinion, or legal conclusions.

6. The Defendants object generally to each interrogatory to the extent that they are vague and/or ambiguous.

7. The Defendants object to each interrogatory to the extent that they assume certain legal conclusions or certain facts not established in this proceeding. The Defendants do not admit, adopt, or acquiesce in any factual or legal contention, characterization, or implication that is contained in these interrogatories.

8. The Defendants' objections and responses do not constitute an adoption of the Definitions or Instructions contained in the Plaintiffs' requests. The Defendants object to those Definitions and Instructions to the extent they: (i) are unclear, ambiguous, overbroad, unduly burdensome; (ii) are inconsistent with the ordinary and customary meaning of the words or phrases they purport to define; or (iii) purport to impose any

requirement or discovery obligations beyond those set forth in the Superior Court Rules or the pertinent case law.

9. The Defendants reserve all objections as to the relevance or admissibility of any responses provided herein and reserve the right to supplement or alter these responses as discovery continues.

REQUESTS FOR ADMISSION

1. Based on the 2020 federal census, population numbers showed 1,377,529 residents of New Hampshire

Response: Notwithstanding the above objections, and without waiving them, the Defendants admit the statement in this request.

2. Dividing that 1,377,529 population number by 400 House seats results in the ideal House district size, based on the 2020 census, to be 3,444 people.

Objections: The Defendants incorporate the above objection to the Plaintiffs' definitions and instructions as if fully set forth herein. The Defendants further object to this request as it seeks an admission or denial with respect to a question of law as to the Defendants' obligation to validate or confirm whether a jurisdiction was appropriately or inappropriately given a dedicated House district. *See In re New England Compounding Pharmacy, Inc. Prod. Liab. Litig.*, No. MDL 13-2419-RWZ, 2015 WL 13715291, at *2 (D. Mass. Sept. 8, 2015) ("[A] party may not seek an admission as to a pure conclusion of law."); *cf. TI Fed. Credit Union v. DelBonis*, 72 F.3d 921, 928 (1st Cir. 1995) ("[P]arties may not stipulate to legal conclusions to be reached by the court.").

Response: Notwithstanding the above objections, and without waiving them, the Defendants admit the 2020 census population for New Hampshire was 1,377,529 and that

the State House of Representatives has 400 seats. The Defendants otherwise deny this request for admission.

3. Laws 2022, 9:1 resulted in 55 New Hampshire towns and wards (in Cities), within a reasonable deviation from the ideal population, not receiving an individual (dedicated) House district.

Objections: The Defendants incorporate the above objection to the Plaintiffs' definitions and instructions as if fully set forth herein. The Defendants further object to this request as it seeks an admission or denial with respect to a question of law as to the Defendants' obligation to validate or confirm whether a jurisdiction was appropriately or inappropriately given a dedicated House district. *See In re New England Compounding Pharmacy, Inc. Prod. Liab. Litig.*, No. MDL 13-2419-RWZ, 2015 WL 13715291, at *2 (D. Mass. Sept. 8, 2015) ("[A] party may not seek an admission as to a pure conclusion of law."); *cf. TI Fed. Credit Union v. DelBonis*, 72 F.3d 921, 928 (1st Cir. 1995) ("[P]arties may not stipulate to legal conclusions to be reached by the court.").

Response: Because this request for admission calls for a conclusion of law, the Defendants deny this request for admission.

4. The populations of each of the towns and wards represented by Plaintiffs in this action were at or above a reasonable deviation from the ideal population based on the 2020 census (i.e., 10% more or less than the ideal population per House district of 3,444).

Objections: The Defendants incorporate the above objection to the Plaintiffs' definitions and instructions as if fully set forth herein. The Defendants further object to this request as it seeks an admission or denial with respect to a question of law as to the Defendants' obligation to validate or confirm whether a jurisdiction was appropriately or

inappropriately given a dedicated House district. *See In re New England Compounding Pharmacy, Inc. Prod. Liab. Litig.*, No. MDL 13-2419-RWZ, 2015 WL 13715291, at *2 (D. Mass. Sept. 8, 2015) ("[A] party may not seek an admission as to a pure conclusion of law."); *cf. TI Fed. Credit Union v. DelBonis*, 72 F.3d 921, 928 (1st Cir. 1995) ("[P]arties may not stipulate to legal conclusions to be reached by the court.").

Response: Because this request for admission calls for a conclusion of law, the Defendants deny this request for admission.

5. Over the course of the legislative process resulting in Laws 2022, 9:1, the Legislature received public input and feedback from various groups, including Map-a-Thon.

Objections: The Defendants incorporate the above objection to the Plaintiffs' definitions and instructions as if fully set forth herein. The Defendants further object to this request as it has no relevance to the complaints and questions that have been raised before this court. *See City of Manchester v. Secretary of State*, 163 N.H. 689, 705 (2012) (holding that the court's purpose is to assess "whether a particular plan passes constitutional muster, not whether a better plan could be crafted").

Response: Notwithstanding the above objections, and without waiving them, the Defendants admit that the legislative process includes public hearings, which are reflected in the legislative bill file. The Defendants otherwise lack sufficient knowledge or information to answer this request and denies it to the extent this request is inconsistent with or contradicted by the legislative bill file.

6. Exhibits D, E, and F to Affidavit appended to the Plaintiff's Complaint are true and accurate copies of the Map-a-Thon proposed legislative maps, and analysis,

submitted by Map-a-Thon to the House for the House's consideration during the 2022 redistricting process.

Objections: The Defendants incorporate the above objection to the Plaintiffs' definitions and instructions as if fully set forth herein.

Response: Notwithstanding the above objections, and without waiving them, the Plaintiffs' exhibits speak for themselves, the Defendants otherwise lack sufficient knowledge or information to answer. The Defendants therefore deny this request. By way of further response, the Defendants have provided the legislative bill file for Laws 2022, 9:1.

7. Exhibit G to Affidavit appended to the Plaintiff's Complaint is a true and accurate copy of a final set of updated, proposed Map-a-Thon maps based on federal census data and local redistricting that occurred in certain New Hampshire cities following those cities' receipt of the 2020 federal census data.

Objections: The Defendants incorporate the above objection to the Plaintiffs' definitions and instructions as if fully set forth herein.

Response: Notwithstanding the above objections, and without waiving them, the Plaintiffs' exhibits speak for themselves, and the Defendants lack sufficient knowledge or information to answer as to the truth or accuracy of an exhibit prepared by the plaintiff's expert. The Defendants otherwise deny this request.

8. Exhibit H to the Affidavit appended to Plaintiff's Complaint contains a true and accurate comparison of Laws 2022, 9:1 and the final proposed Map-a-Thon map:

Objections: The Defendants incorporate the above objection to the Plaintiffs' definitions and instructions as if fully set forth herein.

Response: Notwithstanding the above objections, and without waiving them, the Plaintiffs' exhibits speak for themselves, the Defendants otherwise lack sufficient knowledge or information to answer as to the truth or accuracy of a comparison that the Plaintiff's expert purportedly did between the effects of Laws 2022, 9:11 and Exhibit H to the affidavit appended to the Plaintiff's complaint. The Defendants therefore deny this request. By way of further response, the Defendants have provided the bill file for Laws 2022, 9:1.

9. The Map-a-Thon map provides for higher population in single-member House districts as compared to the enacted map:

Objections: The Defendants incorporate the above objection to the Plaintiffs' definitions and instructions as if fully set forth herein.

Response: Notwithstanding the above objections, and without waiving them, it is not clear what Plaintiffs mean by "provides for higher population in single member districts." The Defendants therefore deny this request.

10. The Legislature did not accept Map-a-Thon's maps (or any alternative proposed map) and ultimately enacted the Legislature's own map as Laws 2022, 9:1, the Governor signed House Bill 50 (2022) on March 23, 2022.

Objections: The Defendants incorporate the above objection to the Plaintiffs' definitions and instructions as if fully set forth herein. The Defendants further object to this request as it has no relevance to the complaints and questions that have been raised before this court. *See City of Manchester v. Secretary of State*, 163 N.H. 689, 705 (2012) (holding that the court's purpose is to assess "whether a particular plan passes constitutional muster, not whether a better plan could be crafted").

Response: Notwithstanding the above objections, and without waiving them, the Defendants admit that the legislature enacted Laws 2022, 9:1 which the Governor signed into law on March 23, 2022. The Defendants otherwise deny the remainder of this request.

11. Laws 2022, 9:1 enacted House districts with a 10.13% population deviation statewide based on the 2020 federal census.

Objections: The Defendants incorporate the above objection to the Plaintiffs' definitions and instructions as if fully set forth herein. The Defendants further object to this request as irrelevant as the 10% threshold is a threshold applicable to redistricting claims that have been brought under the United States Constitution. Plaintiffs in this matter have made no such claim, their complaints have been brought entirely under the New Hampshire State Constitution. *See City of Manchester v. Secretary of State*, 163 N.H. 689, 701 (2012). The Defendants further object to this request to the extent it seeks an admission or denial with respect to a question of law as to the Defendants' obligation to validate or confirm whether a jurisdiction was appropriately or inappropriately given a dedicated House district. *See In re New England Compounding Pharmacy, Inc. Prod. Liab. Litig.*, No. MDL 13-2419-RWZ, 2015 WL 13715291, at *2 (D. Mass. Sept. 8, 2015) ("[A] party may not seek an admission as to a pure conclusion of law."); *cf. TI Fed. Credit Union v. DelBonis*, 72 F.3d 921, 928 (1st Cir. 1995) ("[P]arties may not stipulate to legal conclusions to be reached by the court."). The Defendants further object to this request to the extent it implies that "perfect compliance with the Federal Constitution and Part II, Article 11" is possible and that *any* map that the legislature passed would not inherently have constitutional flaws. *See City of Manchester v. Secretary of State*, 163

N.H. 689, 706 (2012) (confirming that "perfect compliance with all of these [constitutional] mandates is impossible").

Response: Notwithstanding the above objections, and without waiving them, the Defendants admits the statement in this request.

12. The Map-a-Thon final proposed maps had a population deviation of 9.94% statewide based on the 2020 federal census and final redistricting undertaken by certain New Hampshire cities following those cities' receipt of the 2020 federal census data.

Objections: The Defendants incorporate the above objection to the Plaintiffs' definitions and instructions as if fully set forth herein. The Defendants further object to this request as irrelevant as the 10% threshold is a threshold applicable to redistricting claims that have been brought under the United States Constitution. Plaintiffs in this matter have made no such claim, their complaints have been brought entirely under the New Hampshire State Constitution. *See City of Manchester v. Secretary of State*, 163 N.H. 689, 701 (2012). The Defendants further object to this request to the extent it seeks an admission or denial with respect to a question of law as to the Defendants' obligation to validate or confirm whether a jurisdiction was appropriately or inappropriately given a dedicated House district. *See In re New England Compounding Pharmacy, Inc. Prod. Liab. Litig.*, No. MDL 13-2419-RWZ, 2015 WL 13715291, at *2 (D. Mass. Sept. 8, 2015) ("[A] party may not seek an admission as to a pure conclusion of law."); *cf. TI Fed. Credit Union v. DelBonis*, 72 F.3d 921, 928 (1st Cir. 1995) ("[P]arties may not stipulate to legal conclusions to be reached by the court."). The Defendants further object to this request to the extent it implies that "perfect compliance with the Federal Constitution and Part II, Article 11" is possible and that *any* map that the legislature passed would not

inherently have constitutional flaws. *See City of Manchester v. Secretary of State*, 163 N.H. 689, 706 (2012) (confirming that "perfect compliance with all of these [constitutional] mandates is impossible").

Response: Notwithstanding the above objections, and without waiving them, the Plaintiffs' exhibits speak for themselves, the Defendants otherwise lack sufficient knowledge or information to admit or deny the truth or accuracy of the calculations performed by the creators of Exhibit H and therefore deny this request. By way of further response, the Defendants have provided the bill file for Laws 2022, 9:1.

Respectfully submitted as to any answers,

Date: 10/19/2023

By: _____
David Scanlan
New Hampshire Secretary of State

Respectfully submitted as to any objections,

STATE OF NEW HAMPSHIRE
By their attorney,

JOHN M. FORMELLA,
ATTORNEY GENERAL

Date: 10/19/23

By: _____
Matthew Conley, Bar # 268032
Assistant Attorney General
New Hampshire Dept. of Justice
33 Capitol Street
Concord, NH 03301
(603) 271-6765
matthew.g.conley@doj.nh.gov

STATE OF NEW HAMPSHIRE

STRAFFORD COUNTY SUPERIOR COURT

City of Dover et. al.

v.

David Scanlan, Secretary of State. al.

Docket No. 219-2022-CV-00224

Exhibit 3 (Plfs.' Mot. for Summ. Judgment)
Supplemental Affidavit of David Andrews

STATE OF NEW HAMPSHIRE

STRAFFORD COUNTY SUPERIOR COURT

City of Dover et. al.

v.

David Scanlan, Secretary of State for New Hampshire et. al.

Docket No. 219-2022-CV-00224

SUPPLEMENTAL AFFIDAVIT OF DAVID ANDREWS

I, David Andrews, hereby testify and declare under penalty of perjury as follows:

1. I make this affidavit based on my personal knowledge in support of the Motion for Summary Judgment being filed by the Plaintiffs in the above-captioned matter.

2. This Affidavit supplements my previous affidavit dated May 3, 2022, which was attached to the Complaint in the above matter.

3. During the legislative process that preceded the enactment of Laws 2022, ch. 9 (RSA 662:5), Map-a-Thon submitted proposed House of Representatives ("House") redistricting maps to the legislature. Map-a-Thon's final proposal provided the following fifteen towns and wards, which do not have their own district of one or more representative seats under Laws 2022, 9, with such a dedicated House district: Barrington, Bow, Canaan, Chesterfield, Dover Ward 4, Hanover, Hinsdale, Hooksett, Milton, New Ipswich, Newton, Lee, Plaistow, Rochester Ward 5, and Wilton ("Affected Towns/Wards").

4. Map-a-Thon's final proposed House districts/maps show that a net of 14 additional towns/wards could have received a dedicated House seat while complying with all other redistricting criteria. A true and accurate copy of a narrative list of Map-a-Thon's districts expressed textually by County, similar to how Laws 2022, ch. 9 was drafted, is attached to this affidavit as Exhibit A.

5. In addition, Map-a-Thon's final proposed House districts/maps provide for a higher overall population in single-seat House districts as compared to Laws 2022, ch. 9 (RSA 662:5). That is, the enacted House districts in Laws 2022, ch. 9 provide for 97 single member districts representing a population of 843,536. The final Map-a-Thon proposed House districts/maps provide for 110 single member districts representing a population of 917,053.

I swear and declare under penalty of perjury that the foregoing is true and correct.

David Andrews

STATE OF NEW HAMPSHIRE

COUNTY OF Strafford

On January 8 2024, the above named David Andrews personally appeared before me and declared, and made oath, that the foregoing statements are true and accurate.

Justice of the Peace/Notary Public

My commission expires: 6/16/2026

PATRICIA A. MONIELLO
STATE OF
-MY-
COMMISSION
EXPIRES
JUNE 16, 2026
NEW HAMPSHIRE
NOTARY PUBLIC

STATE OF NEW HAMPSHIRE

STRAFFORD COUNTY SUPERIOR COURT

City of Dover et. al.

v.

David Scanlan, Secretary of State. al.

Docket No. 219-2022-CV-00224

Exhibit A to Supp. Aff.,
Map-a-Thon's New Hampshire House
Districts Expressed Narratively

I. Belknap County

District No. 1	Center Harbor	
	New Hampton	1
District No. 2	Meredith	2
District No. 3	Sanbornton	
	Tilton	1
District No. 4	Belmont	1
District No. 5	Laconia Ward 1	
	Laconia Ward 3	
	Laconia Ward 4	
	Laconia Ward 5	
	Laconia Ward 6	4
District No. 6	Gilford	
	Gilmanton	
	Laconia Ward 2	4
District No. 7	Alton	
	Barnstead	3
District No. 8	Belmont	
	Sanbornton	
	Tilton	2

II. Carroll County

District No. 1	Albany	
	Bartlett	
	Chatham	
	Hale’s Location	
	Hart’s Location	
	Jackson	
	Sandwich	2
District No. 2	Conway	3

District No. 3	Eaton	
	Madison	
	Moultonborough	
	Tamworth	
	Tuftonboro	4
District No. 4	Effingham	
	Freedom	1
District No. 5	Ossipee	1
District No. 6	Brookfield	
	Wakefield	
	Wolfeboro	3
District No. 7		
	Brookfield	
	Ossipee	
	Wakefield	
	Wolfeboro	1

III. Cheshire County

District No. 1	Gilsum	
	Surry	
	Walpole	
	Westmoreland	2
District No. 2	Alstead	
	Marlow	
	Stoddard	
	Sullivan	1
District No. 3	Keene Ward 1	1
District No. 4	Keene Ward 2	1
District No. 5	Keene Ward 3	1

District No. 6	Keene Ward 4	1
District No. 7	Keene Ward 5	1
District No. 8	Dublin	
	Harrisville	
	Nelson	
	Roxbury	1
District No. 9	Jaffrey	
	Marlborough	1
District No. 10	Rindge	1
District No. 11	Fitzwilliam	
	Richmond	
	Swanzey	
	Troy	3
District No. 12	Chesterfield	1
District No. 13	Winchester	1
District No. 14	Hinsdale	1
District No. 15	Alstead	
	Keene Ward 2	
	Keene Ward 3	
	Marlow	
	Stoddard	
	Sullivan	1
District No. 16	Keene Ward 1	
	Keene Ward 4	
	Keene Ward 5	1
District No. 17	Jaffrey	
	Marlborough	
	Rindge	2
District No. 18	Fitzwilliam	

	Hinsdale	
	Richmond	
	Swanzey	
	Troy	
	Winchester	1

IV. Coos County

District No. 1	Atkinson & Gilmanton Academy Grant	
	Cambridge	
	Clarksville	
	Dix's Grant	
	Dixville	
	Dummer	
	Errol	
	Erving's Location	
	Milan	
	Millsfield	
	Odell	
	Pittsburg	
	Second College Grant	
	Stark	
	Wentworth Location	1
District No. 2	Colebrook	
	Columbia	
	Stewartstown	1
District No. 3	Dalton	
	Lancaster	
	Northumberland	
	Stratford	2
District No. 4	Carroll	

	Whitefield	1
District No. 5	Berlin	2
District No. 6	Bean’s Purchase	
	Burbank’s Grant	
	Gorham	
	Jefferson	
	Randolph	
	Shelburne	
	Success	
	Kilkenny	
	Crawfords Purchase	
	Beans Grant	
	Cutts Grant	
	Hadleys Purchase	
	Sargents Purchase	
	Thompson and Merserves Purchase	
	Martins Location	
	Greens Grant	
	Pinkham’s Grant	1
District No. 7	Berlin	
	Bean’s Purchase	
	Burbank’s Grant	
	Gorham	
	Jefferson	
	Randolph	
	Shelburne	
	Success	
	Kilkenny	
	Crawfords Purchase	

	Beans Grant	
	Cutts Grant	
	Hadleys Purchase	
	Sargents Purchase	
	Thompson and Merserves Purchase	
	Martins Location	
	Greens Grant	
	Pinkham's Grant	1

V. Grafton County

District No. 1		
	Littleton	
	Monroe	2
District No. 2		
	Bethlehem	
	Franconia	1
District No. 3		
	Bath	
	Lisbon	
	Lyman	1
District No. 4		
	Easton	
	Landaff	
	Lincoln	
	Livermore	
	Sugar Hill	
	Waterville Valley	1
District No. 5		
	Hanover	3
District No. 6		

	Canaan	1
District No. 7		
	Haverhill	
	Lyme	
	Orford	
	Piermont	2
District No. 8		
	Canaan	
	Hanover	
	Haverhill	
	Lyme	
	Orford	
	Piermont	1
District No. 9		
	Benton	
	Thornton	
	Warren	
	Woodstock	1
District No. 10		
	Campton	
	Ellsworth	
	Holderness	1
District No. 11		
	Benton	
	Campton	
	Ellsworth	
	Holderness	
	Thornton	
	Warren	

	Woodstock	1
District No. 12		
	Dorchester	
	Groton	
	Hebron	
	Orange	
	Plymouth	
	Rumney	
	Wentworth	3
District No. 13		
	Enfield	1
District No. 14		
	Alexandria	
	Ashland	
	Bridgewater	
	Bristol	
	Grafton	2
District No. 15		
	Alexandria	
	Ashland	
	Bridgewater	
	Bristol	
	Enfield	
	Grafton	1
District No. 16		
	Lebanon Ward 1	1
District No. 17		
	Lebanon Ward 2	1
District No. 18		

	Lebanon Ward 3	1
District No. 19		
	Lebanon Ward 1	
	Lebanon Ward 2	
	Lebanon Ward 3	1

VI. Hillsborough County

District No. 1		
	Merrimack	7
District No. 2		
	Amherst	3
District No. 3		
	Amherst	
	Merrimack	1
District No. 4		
	Antrim	
	Hancock	
	Peterborough	3
District No. 5		
	Bedford	6
District No. 6		
	Goffstown	5
District No. 7		
	Bedford	
	Goffstown	1
District No. 8		
	New Ipswich	1
District No. 9		
	Bennington	

	Greenfield	
	Sharon	
	Temple	1
District No. 10		
	Bennington	
	Greenfield	
	New Ipswich	
	Sharon	
	Temple	1
District No. 11		
	Brookline	
	Greenville	
	Mason	2
District No. 12		
	Hollis	2
District No. 13		
	Brookline	
	Greenville	
	Hollis	
	Mason	1
District No. 14		
	Deering	
	Hillsborough	
	Windsor	2
District No. 15		
	Weare	2
District No. 16		
	Deering	
	Hillsborough	

	Weare	
	Windsor	1
District No. 17		
	Milford	4
District No. 18		
	Wilton	1
District No. 19		
	Francestown	
	Lyndeborough	
	Mont Vernon	
	New Boston	3
District No. 20		
	Francestown	
	Lyndeborough	
	Milford	
	Mont Vernon	
	New Boston	
	Wilton	1
District No. 21		
	Hudson	6
District No. 22		
	Litchfield	2
District No. 23		
	Hudson	
	Litchfield	2
District No. 24		
	Pelham	4
District No. 25		
	Manchester Ward 1	2

District No. 26		
	Manchester Ward 3	2
District No. 27		
	Manchester Ward 9	2
District No. 28		
	Manchester Ward 10	2
District No. 29		
	Manchester Ward 11	2
District No. 30		
	Manchester Ward 12	2
District No. 31		
	Manchester Ward 1	
	Manchester Ward 3	
	Manchester Ward 9	
	Manchester Ward 10	
	Manchester Ward 11	
	Manchester Ward 12	5
District No. 32		
	Manchester Ward 2	2
District No. 33		
	Manchester Ward 4	2
District No. 34		
	Manchester Ward 5	2
District No. 35		
	Manchester Ward 6	2
District No. 36		
	Manchester Ward 7	2
District No. 37		

	Manchester Ward 8	2
District No. 38		
	Manchester Ward 2	
	Manchester Ward 4	
	Manchester Ward 5	
	Manchester Ward 6	
	Manchester Ward 7	
	Manchester Ward 8	5
District No. 39		
	Nashua Ward 1	3
District No. 40		
	Nashua Ward 2	3
District No. 41		
	Nashua Ward 3	3
District No. 42		
	Nashua Ward 4	3
District No. 43		
	Nashua Ward 5	3
District No. 44		
	Nashua Ward 6	3
District No. 45		
	Nashua Ward 7	3
District No. 46		
	Nashua Ward 8	3
District No. 47		
	Nashua Ward 9	3

VII. Merrimack County

District No. 1		
	Andover	
	Hill	1
District No. 2		
	Franklin Ward 1	
	Franklin Ward 2	
	Franklin Ward 3	2
District No. 3		
	Northfield	1
District No. 4		
	Danbury	
	New London	
	Wilmot	2
District No. 5		
	Bradford	
	Henniker	
	Newbury	3
District No. 6		
	Salisbury	
	Sutton	
	Warner	
	Webster	2
District No. 7		
	Boscawen	1
District No. 8		
	Canterbury	
	Loudon	2
District No. 9		
	Concord Ward 1	1

District No. 10		
	Concord Ward 2	1
District No. 11		
	Concord Ward 3	1
District No. 12		
	Concord Ward 4	1
District No. 13		
	Concord Ward 5	1
District No. 14		
	Concord Ward 6	1
District No. 15		
	Concord Ward 7	1
District No. 16		
	Concord Ward 8	1
District No. 17		
	Concord Ward 9	1
District No. 18		
	Concord Ward 10	1
District No. 19		
	Dunbarton	
	Hopkinton	2
District No. 20		
	Bow	2
District No. 21		
	Pembroke	2
District No. 22		
	Chichester	
	Pittsfield	2
District No. 23		

	Epsom	1
District No. 24		
	Allenstown	1
District No. 25		
	Hooksett	3
District No. 26		
	Franklin Ward 1	
	Franklin Ward 2	
	Franklin Ward 3	
	Northfield	1
District No. 27		
	Boscawen	
	Canterbury	
	Loudon	
	Salisbury	
	Sutton	
	Warner	
	Webster	1
District No. 28		
	Concord Ward 1	
	Concord Ward 2	
	Concord Ward 3	1
District No. 29		
	Concord Ward 4	
	Concord Ward 9	
	Concord Ward 10	1
District No. 30		
	Concord Ward 5	
	Concord Ward 6	

	Concord Ward 7	
	Concord Ward 8	1
District No. 31		
	Bow	
	Dunbarton	
	Hopkinton	1
District No. 32		
	Allenstown	
	Epsom	
	Hooksett	2

VIII. Rockingham County

District No. 1		
	Newington	
	Portsmouth Ward 1	1
District No. 2		
	New Castle	
	Portsmouth Ward 5	1
District No. 3		
	New Castle	
	Newington	
	Portsmouth Ward 1	
	Portsmouth Ward 5	1
District No. 4		
	Portsmouth Ward 2	1
District No. 5		
	Portsmouth Ward 3	1
District No. 6		
	Portsmouth Ward 4	1

District No. 7		
	Portsmouth Ward 2	
	Portsmouth Ward 3	
	Portsmouth Ward 4	1
District No. 8		
	Greenland	
	Rye	2
District No. 9		
	North Hampton	1
District No. 10		
	Greenland	
	North Hampton	
	Rye	1
District No. 11		
	Stratham	2
District No. 12		
	Newfields	
	Newmarket	4
District No. 13		
	Exeter	3
District No. 14		
	Exeter	
	Newfields	
	Newmarket	
	Stratham	1
District No. 15		
	Hampton	4
District No. 16		
	Seabrook	2

District No. 17		
	Hampton	
	Seabrook	1
District No. 18		
	Hampton Falls	
	Kensington	
	South Hampton	1
District No. 19		
	Newton	1
District No. 20		
	Hampton Falls	
	Kensington	
	Newton	
	South Hampton	1
District No. 21		
	East Kingston	
	Kingston	2
District No. 22		
	Hampstead	2
District No. 23		
	East Kingston	
	Hampstead	
	Kingston	1
District No. 24		
	Brentwood	1
District No. 25		
	Fremont	1
District No. 26		
	Danville	1

District No. 27		
	Brentwood	
	Danville	
	Fremont	1
District No. 28		
	Epping	2
District No. 29		
	Raymond	3
District No. 30		
	Sandown	2
District No. 31		
	Plaistow	2
District No. 32		
	Atkinson	2
District No. 33		
	Salem	8
District No. 34		
	Atkinson	
	Plaistow	
	Salem	1
District No. 35		
	Windham	4
District No. 36		
	Londonderry	7
District No. 37		
	Londonderry	
	Windham	1
District No. 38		
	Derry	7

District No. 39		
	Chester	1
District No. 40		
	Chester	
	Derry	4
District No. 41		
	Auburn	
	Candia	2
District No. 42		
	Deerfield	
	Northwood	
	Nottingham	3
District No. 43		
	Auburn	
	Candia	
	Deerfield	
	Northwood	
	Nottingham	2

IX. Strafford County

District No. 1		
	Middleton	
	New Durham	
	Strafford	2
District No. 2		
	Milton	1
District No. 3		
	Farmington	2
District No. 4		

	Rochester Ward 1	1
District No. 5		
	Rochester Ward 2	1
District No. 6		
	Rochester Ward 3	1
District No. 7		
	Rochester Ward 4	1
District No. 8		
	Rochester Ward 5	1
District No. 9		
	Rochester Ward 6	1
District No. 10		
	Barrington	2
District No. 11		
	Lee	1
District No. 12		
	Rollinsford	
	Somersworth Ward 1	
	Somersworth Ward 2	
	Somersworth Ward 3	
	Somersworth Ward 4	
	Somersworth Ward 5	4
District No. 13		
	Dover Ward 1	1
District No. 14		
	Dover Ward 2	1
District No. 15		
	Dover Ward 3	1
District No. 16		

	Dover Ward 4	1
District No. 17		
	Dover Ward 5	1
District No. 18		
	Dover Ward 6	1
District No. 19		
	Durham	
	Madbury	5
District No. 20		
	Middleton	
	Milton	
	New Durham	
	Strafford	1
District No. 21		
	Rochester Ward 1	
	Rochester Ward 2	
	Rochester Ward 4	
	Rochester Ward 5	
	Rochester Ward 6	3
District No. 22		
	Dover Ward 1	
	Dover Ward 4	
	Dover Ward 5	
	Dover Ward 6	
	Rochester Ward 3	3
District No. 23		
	Barrington	
	Lee	1

District No. 24		
	Dover Ward 2	
	Dover Ward 3	1

X. Sullivan County

District No. 1		
	Grantham	1
District No. 2		
	Cornish	
	Plainfield	1
District No. 3		
	Charlestown	
	Newport	
	Unity	3
District No. 4		
	Acworth	
	Goshen	
	Langdon	
	Lempster	
	Washington	1
District No. 5		
	Springfield	
	Sunapee	1
District No. 6		
	Claremont Ward 1	
	Claremont Ward 2	
	Claremont Ward 3	
	Croydon	3
District No. 7		

	Charlestown	
	Cornish	
	Newport	
	Plainfield	
	Unity	1
District No. 8		
	Acworth	
	Claremont Ward 1	
	Claremont Ward 2	
	Claremont Ward 3	
	Croydon	
	Goshen	
	Langdon	
	Lempster	
	Springfield	
	Sunapee	
	Washington	2

STATE OF NEW HAMPSHIRE

STRAFFORD COUNTY SUPERIOR COURT

City of Dover et. al.

v.

David Scanlan, Secretary of State. al.

Docket No. 219-2022-CV-00224

Exhibit 4 (Plfs.' Mot. for Summ. Judgment)
State's Responses to Interrogatories

THE STATE OF NEW HAMPSHIRE

STRAFFORD, SS SUPERIOR COURT

Docket No. 219-2022-CV-00224

The City of Dover et. al.

v.

David Scanlan, Secretary of State for New Hampshire et. al.

DEFENDANTS' RESPONSE TO PLAINTIFFS' FIRST SET OF INTERROGATORIES TO DEFENDANT

The Defendants, by and through counsel, hereby respond to the Plaintiffs' First Requests For Interrogatories under Superior Court Rule 23.

GENERAL OBJECTIONS

The Defendants incorporate the following General Objections into each and every individualized response contained herein, as set forth below, and into each and every amendment, supplement or modification to these responses hereafter provided to the specific interrogatories below. The Defendants do not waive any General Objection in response to any specific interrogatory.

1. The Defendants object to the Plaintiffs' definition of "you," "your," and "State" as including "all elected and appointed officials, employees and agents." This definition is overly broad and unduly burdensome. The "State of New Hampshire," in its broadest sense, encompasses three branches of government made up of dozens of agencies, divisions, and other subparts, and acts through thousands of elected or appointed officials, employees, and other agents. It is neither feasible nor reasonable to expect discovery responses in this case, including responses to these requests for admissions, to encompass all information that may be within the

possession of the state government as a whole or the personal knowledge of any state official, employee, or agent. This is especially true given that there is no temporal limit on the requests in question.

2. The Defendants object to each interrogatory and document request to the extent it purports to require the disclosure or production of information subject to the attorney-client privilege, the work product doctrine, the executive privilege, the legislative privilege, the deliberative process privilege, or any other privilege or is otherwise immune from disclosure under the Superior Court Rules, the New Hampshire Rules of Evidence, or state law. Any inadvertent disclosure of information that is protected under the attorney-client privilege, the work product doctrine, the executive privilege, the legislative privilege, the deliberative process privilege, or any other privilege or is otherwise immune from disclosure under the Superior Court Rules, the New Hampshire Rules of Evidence, or state law shall not constitute a waiver of that privilege, immunity, or legal bar and shall not prevent the Defendants from objecting to discovery with respect to such information or use of such information in court. The Defendants will prepare an appropriate privilege log to the extent one is required in this case.

3. The Defendants object generally to each interrogatory to the extent that it seeks the production of information that is irrelevant to the issues germane to this matter and/or is overly broad, would subject the defendants' offices to unreasonable, oppressive, and undue burden and expense, and/or is not proportional to the needs of the case.

4. The Defendants object generally to each interrogatory insofar as it seeks to have the Defendants identify information or documents that are already in plaintiffs' possession or are readily accessible to plaintiffs or that the plaintiffs may produce in this case.

5. The Defendants object generally to each interrogatory to the extent that they purport to seek information which is not within the knowledge, possession, custody, or control of

the Defendants, including but not limited to the knowledge of past legislatures and legislative committees.

6. The Defendants object generally to each interrogatory to the extent that it calls for speculation and conjecture, opinion, or legal conclusions.

7. The Defendants object generally to each interrogatory to the extent that they are vague and/or ambiguous.

8. The Defendants object to each interrogatory to the extent that they assume certain legal conclusions or certain facts not established in this proceeding. The Defendants do not admit, adopt, or acquiesce in any factual or legal contention, characterization, or implication that is contained in these interrogatories.

9. The Defendants' objections and responses do not constitute an adoption of the Definitions or Instructions contained in the plaintiffs' requests. The Defendants object to those Definitions and Instructions to the extent they: (i) are unclear, ambiguous, overbroad, unduly burdensome; (ii) are inconsistent with the ordinary and customary meaning of the words or phrases they purport to define; or (iii) purport to impose any requirement or discovery obligations beyond those set forth in the Superior Court Rules or the pertinent case law.

10. The Defendants reserve all objections as to the relevance or admissibility of any responses provided herein and reserve the right to supplement or alter these responses as discovery continues.

INTERROGATORIES

1. Do you dispute that New Hampshire Laws 2022, Chapter 9, repealed and reenacted N.H. RSA 662:5 to accomplish the most recent redistricting of the New Hampshire House of Representatives ("House") according to the 2020 federal census and, in doing so, failed to provide a dedicated House district to a total of fifty-five (55) New Hampshire towns and wards, each of which otherwise met the population and deviation requirements of Part II, Article 11 by being within a reasonable deviation from the ideal population for a

representative House seat according to the 2020 federal census, as indicated in the Affidavit of David Andrews and attachment G to same accompanying the Complaint? If you dispute the foregoing, please indicate the basis and extent of any dispute.

Answer: New Hampshire Laws 2022, Chapter 9, repealed and reenacted N.H. RSA 662:5 to accomplish the most recent redistricting of the House. The Defendants otherwise lack sufficient knowledge or information to answer. By way of further answer, the meaning of "reasonable deviation from the ideal population for one or more representative seats" as presented in Part II, Art. 11 of the New Hampshire Constitution is a question of law.

2. With respect to the total number of towns and wards who were within a reasonable deviation from the ideal population for a representative House seat according to the 2020 federal census but were not provided a dedicated House district by Laws 2022, Chapter 9, please identify and state each and every basis upon which the State or its legislature in fact concluded, or could constitutionally have concluded, that the aforesaid failure to provide a dedicated House district to each affected toward and ward (within Laws 2022, Chapter 9) complied with all requirements of Part II, Article 11 of the State Constitution. For each asserted basis, please identify and provide any documents, including but not limited to any form of legislative history, any quantitative or qualitative analysis or comparison of any kind (by the legislature, any subcommittee of the New Hampshire Senate and/or House, any State employee, any State consultant, and/or any Executive Branch employee), or any other document or information establishing and/or supporting the asserted basis.

Answer: The defendants lack sufficient knowledge or information to identify every basis on which the legislature made a decision in enacting Laws 2022, Chapter 9. The Defendants are providing the legislative bill file for Laws 2022, Chapter 9 in response to this interrogatory. The contents of the bill file speak for themselves. Any responsive information that is otherwise in the possession of the legislature would be privileged, including but not limited to operation of legislative privilege. The Defendants further object to this interrogatory as it calls for conclusions of law regarding the constitutionality of a statute.

3. Please identify each and every basis upon which the State or its legislature rejected or opted not to enact (or in any way adopt, in whole or in part) any and all of the proposed House redistricting maps provided by the Map-a-Thon Coalition during the 2022 to 2023 legislative session. For each asserted basis, please identify and provide any documents, including but not limited to any form of legislative history, any quantitative or qualitative analysis or comparison of any kind (by the legislature, any subcommittee of the New Hampshire Senate or House, any State employee, any State consultant, and/or any Executive Branch employee), or any other document or information establishing and/or supporting the asserted basis.

Answer: The Defendants lack sufficient knowledge or information to identify every basis on which the legislature made a decision in enacting Laws 2022, Chapter 9. The Defendants are providing the legislative bill file for Laws 2022, Chapter 9 in response to this interrogatory. The contents of the bill file speak for themselves. Any responsive information that is otherwise in the possession of the legislature would be privileged, including but not limited to operation of legislative privilege. The Defendants further object to this interrogatory as it calls for conclusions of law regarding the constitutionality of a statute.

VERIFICATION

I, David Scanlan, am the New Hampshire Secretary of State. The factual matters stated in the foregoing Interrogatory Responses are provided on behalf of the State of New Hampshire, the New Hampshire Secretary of State, and myself in my official capacity and are not necessarily within my personal knowledge or within the personal knowledge of any single individual. Based on reasonable inquiry of staff within the New Hampshire Department of State, I am informed and believe, and based on such information and belief hereby verify, under penalty of perjury, that the factual statements in the foregoing Interrogatory Responses are true and correct to the best of my knowledge, information, and belief.

Date: 10/19/2023

STATE OF NEW HAMPSHIRE

COUNTY OF Merrimack

Personally appeared before me the above-named David Scanlan on this 19th day of October, 2023 and made oath that the foregoing statements by him are true and correct to the best of his knowledge and belief.

KALEY M. DION
MY COMMISSION EXPIRES 1/23/24
NOTARY PUBLIC
NEW HAMPSHIRE

Notary Public/Justice of the Peace

Respectfully submitted,

STATE OF NEW HAMPSHIRE, *et al.*

By their attorney,

JOHN M. FORMELLA,
ATTORNEY GENERAL

Date: 10/19/23

By: _____

Matthew Conley, Bar # 268032
Assistant Attorney General
New Hampshire Dept. of Justice
33 Capitol Street
Concord, NH 03301
(603) 271-6765
matthew.g.conley@doj.nh.gov

STATE OF NEW HAMPSHIRE

STRAFFORD COUNTY SUPERIOR COURT

City of Dover et. al.

v.

David Scanlan, Secretary of State. al.

Docket No. 219-2022-CV-00224

Exhibit 5 (Plfs.' Mot. for Summ. Judgment)
Brief of Attorney General

THE STATE OF NEW HAMPSHIRE

SUPREME COURT

Docket No. 2012-0338

City of Manchester, *et al.*
v.
William M. Gardner, in his official capacity as Secretary of State of the State of New Hampshire

---

City of Concord
v.
William M. Gardner, in his official capacity as Secretary of State of the State of New Hampshire

---

Hon. Mary Jane Wallner, *et al.*
v.
William M. Gardner, in his official capacity as Secretary of State of the State of New Hampshire

---

Town of Gilford, *et al.*
v.
William M. Gardner, in his official capacity as Secretary of State of the State of New Hampshire

---

Hon. Marshall E. Quandt, *et al.*
v.
William M. Gardner, in his official capacity as Secretary of State of New Hampshire

---

Interlocutory Transfer Pursuant to Rule 9

BRIEF FOR THE ATTORNEY GENERAL

MICHAEL A. DELANEY
ATTORNEY GENERAL

Anne M. Edwards [Bar #6826]
Associate Attorney General
Stephen G. LaBonte [Bar #16178]
Assistant Attorney General
NH Department of Justice
33 Capitol Street
Concord, NH 03301-6397
(603) 271-3658

May 23, 2012

TABLE OF CONTENTS

TABLE OF AUTHORITIES ii

ISSUES PRESENTED 1

STATEMENT OF THE CASE 2

STATEMENT OF THE FACTS 3

SUMMARY OF THE ARGUMENT 4

ARGUMENT 5

I. RSA 662:5 (2012) IS CONSTITUTIONAL PURSUANT TO THE UNITED STATES AND NEW HAMPSHIRE CONSTITUTIONS 5

II. THE PROVISIONS OF RSA 662:5 (2012) ARE SEVERABLE BY COUNTY 9

TABLE OF AUTHORITIES

Cases

Below v. Gardner, 148 N.H. 1, 8 (2002) 5, 6

Brown v. Thomson, 462 U.S. 835 (1983) 7, 8

Gray v. Sanders, 372 U.S. 368 (1963) 5

Maryland Committee for Fair Representation v. Tawes, 377 U.S. 656 (1964) 5

N.H. Assoc. of Counties v. State of New Hampshire, 158 N.H. 284 (2009) 5

Petition of Below, 151 N.H. 135 (2004) 5, 6

Reynolds v. Simms, 377 U.S. 533 (1964) 6

Warburton v. Thomas, 136 N.H. 383 (1992) 5

Constitutional Provisions

New Hampshire Constitution Part II, Article 9 ..... 6, 7

New Hampshire Constitution Part II, Article 11 ..... 4, 6, 7

Statutes

RSA 662:5 ..... Passim

RSA 662:5 (2012) ..... Passim

Rules

Supreme Court Rule 9 2

Supreme Court Rule 31 2

ISSUES PRESENTED

A. Whether RSA 662:5 is unconstitutional under the Federal or State Constitutions?

B. If part of RSA 662:5 is determined to be unconstitutional, whether that part is severable from the remaining parts of the statute?

STATEMENT OF THE CASE

This matter comes before this Court by interlocutory transfer without a ruling pursuant to Supreme Court Rule 9. On March 28, 2012, the New Hampshire Legislature enacted RSA 662:5 (2012) defining the state representative districts for the upcoming 2012 general election. As a result, five separate actions have been filed and consolidated against Secretary of State William M. Gardner, in his official capacity, challenging the constitutionality of the statute. The actions seek a declaratory judgment and injunctive relief enjoining the Secretary of State from implementing the statute as currently enacted. [1]

[1] The Secretary of State is a named party to this action solely in his official capacity. He takes no specific position with respect to the constitutionality of RSA 662:5 (2012). As these actions challenge the constitutionality of a state law, the Attorney General is defending that law under his common law authority and Supreme Court Rule 31.

STATEMENT OF THE FACTS

The Attorney General incorporates the Agreed Statement of Facts appearing in section II of the Interlocutory Transfer Statement.

SUMMARY OF THE ARGUMENT

One voter, one vote is the primary rule with regard to satisfying the constitutional mandate of substantial equality with respect to state legislative representation for all citizens. The Legislature is the governing body best situated to enact a state legislative apportionment plan based on equality. The Legislature may use single member, multi-member and floterial districts in order to see that each person's vote is as near equal as possible.

The New Hampshire Constitution provides that the House of Representatives be founded on equality and maintains no less than three hundred and seventy-five or no more than four hundred representative seats. The state Constitution further provides that towns and wards with populations within a reasonable deviation of the ideal population be apportioned their own districts with one or more representatives. In drafting RSA 662:5, the Legislature adopted a ten percent deviation guideline as established by federal common law apportioning individual districts to the various towns and wards.

In 2006, Part II, Article 11 of the New Hampshire Constitution was amended with the purpose to provide as many single town districts as possible, while not allowing any town to be represented by a floterial district. As currently enacted, RSA 662:5 (2012) provides for two hundred and four house districts, whereas the previously enacted statute provided one hundred and three house districts. The Legislature maintained the constitutionally required number of representative seats and assured that the boundaries of the towns, wards and unincorporated places were preserved and contiguous. The Legislature balanced all of the constitutional and common law requirements in enacting RSA 662:5. Presuming the statute is constitutional and considering all of the agreed upon facts, Petitioners have failed to meet their burden of proof and RSA 662:5should be held to be constitutional.

ARGUMENT

I. RSA 662:5 (2012) IS CONSTITUTIONAL PURSUANT TO THE UNITED STATES AND NEW HAMPSHIRE CONSTITUTIONS.

RSA 662:5 (2012) is constitutional under the United States and New Hampshire Constitutions. RSA 662:5 is presumed constitutional and it will not be declared invalid except upon inescapable grounds. *See N.H. Assoc. of Counties v. State of New Hampshire,* 158 N.H. 284, 288 (2009). This Court will not hold a statute to be unconstitutional unless a clear and substantial conflict exists between it and the Constitution. *Id.* Further, it is this Court's role to interpret the Constitution and resolve the disputes arising under it. *Petition of Below*, 151 N.H. 135, 139 (2004). The Court is the final arbiter of the state's constitutional disputes. *Id.* When interpreting a constitutional provision, the Court looks to its purpose and intent, giving the words in question the meaning they must be presumed to have had to the electorate when the vote was cast. *Id.* The Court reviews the history of the Constitution and its amendments thereby making it the Court's "duty ...to place itself as nearly as possible in the situation of the parties at the time the instrument was made, [so] that it may gather their intention from the language used, viewed in light of the surrounding circumstances." *Id., quoting Warburton v. Thomas*, 136 N.H. 383, 387 (1992). "In reviewing a state legislative reapportionment case, this Court must of necessity consider the challenged scheme as a whole in determining whether the ... state apportionment plan, in its entirety meets ... constitutional requisites." *Maryland Committee for Fair Representation v. Tawes*, 377 U.S. 656, 673 (1964).

"[T]here can be room but for a single constitutional rule – one voter, one vote." *Below v. Gardner*, 148 N.H. 1, 8 (2002) (*citing Gray v. Sanders*, 372 U.S. 368, 382 (1963). "The equal protection clauses of the New Hampshire and Federal Constitutions 'demand no less than

substantially equal state legislative representation for all citizens, of all places as well as all races." *Petition of Below*, 151 N.H. 135, 136 (2004). "'Reapportionment is primarily a matter of legislative consideration in determination.' (Citation omitted). A state legislature is by far the best situated to identify and then reconcile traditional state policies with the constitutionally mandated framework of substantial population equality." *Below v. Gardner,* 148 N.H. 1, 5 (2002); *see also* New Hampshire Constitution Part II, Article 9-a. Therefore, the Legislature is constitutionally required to apportion legislative districts so that each person's vote is as near equal as possible. *See Below*, 148 N.H. at 8. The Legislature "need not achieve absolute equality with respect to ...legislative districts." *Id.* Single member, multimember and floterial districts may be used to accomplish the overriding objection of substantial equality of the population among the various districts, so that the vote of any citizen is approximately equal in weight to that of any other citizen. *See Reynolds v. Simms*, 377 U.S. 533, 579 (1964).

The New Hampshire Constitution Part II, Article 9 provides in part that:

> the legislature of this State, a House of Representatives ... founded on equality, and the representation therein shall be as equal as circumstances will admit. The whole number of representatives to be chosen from the towns, wards, places, and representative districts thereof established hereunder, shall be not less than three hundred seventy-five or more than four hundred.

The New Hampshire Constitution Part II, Article 11 further provides that:

> [w]hen the population of any time or ward, according to the last federal census, is within a reasonable deviation from the ideal population for one or more representative seats, the town or ward shall have its own district of one or more representative seats. The apportionment shall not deny any other town or ward of membership in one non floterial representative district. When any town, ward, or unincorporated places has fewer than the number of inhabitants necessary to entitle it to one representative, the legislature shall form those towns, wards, or unincorporated places into representative

> districts which contain a sufficient number of inhabitants to entitle each district so formed to one or more representatives for the entire district. In forming the districts, the boundaries of towns, wards, and unincorporated places shall be preserved and contiguous. The excess number of inhabitants of a district may be added to the excess of inhabitants of other districts to form at-large or floterial districts, conforming to acceptable deviations.

In 2006, Part II, Article 11 of the New Hampshire Constitution was amended with the purpose to provide as many single town districts as possible while not allowing any town to be represented solely in a floterial district. Record at CHR-000579. In order to accomplish this, the amendment provided every town or ward, within a reasonable deviation of the ideal population, the respective number of representative seats based on its actual population, provided it would not deny another town or ward membership in one non-floterial district. Record at CHR-000581, 000513-14. As currently enacted, RSA 662:5 (2012) provides for 204 House districts. Interlocutory Transfer Statement, ¶ 61. As previously enacted, RSA 662:5 provided for 103 House districts. *See* Appendix to the Interlocutory Transfer Statement, pp. 100-106. In forming the 204 new districts, the boundaries of towns, wards, and unincorporated places were preserved and remained contiguous. *Id.,* pp. 69-87.

When reviewing the constitutional history of the 2006 amendment, the Court must consider the phrase *reasonable deviation* used in the amended language in light of the constitutional mandate of equality provided by the United States Constitution Fourteenth Amendment and the New Hampshire Constitution Part II, Article 9. Considering the language above, a town or ward is only granted its own representative district under Part II, Article 11 of the New Hampshire Constitution if its actual population falls within a reasonable deviation of the ideal population. It has been established "as a general matter that an apportionment plan with a maximum population deviation under 10% falls within [a] category of minor deviations." *Brown*

v. Thomson, 462 U.S. 835, 842 (1983). "A plan with larger disparities in population, however, creates a *prima facie* case of discrimination and therefore must be justified. *Id.* at 842-43. Along with the constitutional mandate of one person, one vote, the Legislature must maintain the constitutionally required number of representative seats and assure that the boundaries of the towns, wards and unincorporated places are preserved and contiguous unless otherwise requested by the town, ward, or place. *See* N.H. Const. Pt. II, Art. 9 and 11.

As currently enacted, RSA 662:5 (2012) provides for 400 representative seats. *See* Record at CHR-000943. The 2010 decennial census identifies New Hampshire as having a population of 1,316,470, resulting in, as the Legislature calculated, the ideal population per representative seat being 3,291. Interlocutory Transfer Statement, ¶ 56. In constructing RSA 662:5 (2012), the House Special Committee on Redistricting ("the Committee") considered its obligation to conform to both the United States and New Hampshire Constitutions. *See* Record at 000005. The Committee endeavored to preserve the one person, one vote requirement of the Federal Constitution, while implementing the single town/ward districting system prescribed by Part II, Art. 11 of the State Constitution. *See Id.* The Committee undertook this task by using the less than 10% deviation guideline as established by federal common law. *See Id.*; *see also Brown v. Thomson*, 462 U.S. 835, 842 (1983). As currently enacted, RSA 662:5 (2012), satisfies the federal common law guideline with a statewide range of deviation of 9.9%. Interlocutory Transfer Statement, ¶ 56. As a result, RSA 662:5 (2012) is constitutional and the petitions requesting that it be declared unconstitutional should be denied.

II. THE PROVISIONS OF RSA 662:5 (2012) ARE SEVERABLE BY COUNTY.

Regarding severability, if any provisions of RSA 662:5 (2012) are determined to be unconstitutional, those provisions are severable by county. With respect to this issue, the Attorney General concurs with the arguments in the House's brief.

CONCLUSION

The Legislature balanced all of the constitutional and common law requirements in enacting RSA 662:5 (2012). Presuming the statute is constitutional and considering all of the agreed upon facts, Petitioners have failed to meet their burden of proof and their petitions should be denied. Based on the arguments presented in this brief, the Attorney General respectfully requests that this honorable Court affirm the presumption of constitutionality and find RSA 662:5 (2012) constitutional.

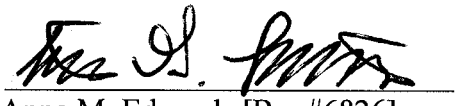
ORAL ARGUMENT

The Attorney General yields his time for oral argument to the Intervenor.

Respectfully submitted,

MICHAEL A. DELANEY
ATTORNEY GENERAL

By his attorneys,

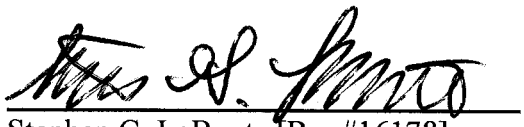
By: 

Anne M. Edwards [Bar #6826]
Associate Attorney General
Stephen G. LaBonte [Bar #16178]
Assistant Attorney General
NH Department of Justice
33 Capitol Street
Concord, NH 03301-6397
(603) 271-3658

Date: May 23, 2012

CERTIFICATION

I hereby certify that two (2) copies of the foregoing were mailed this day, postage prepaid, to: Thomas J. Donovan, Esquire, Richard J. Lehmann, Esquire, David A. Vicinanzo, Esquire/Anthony J. Galdieri, Esquire, Peter V. Millham, Esquire, Danielle L. Pacik, Esquire, Martin P. Honigberg, Esquire/Jay Surdukowski, Esquire, Tony F. Soltani, Esquire/Jason B. Dennis, Esquire, and Allan Krans, Esquire.



Stephen G. LaBonte [Bar #16178]
Assistant Attorney General

Dated: May 23, 2012