

Map-a-THON

Granite Staters Drawing Fair Voting Maps



Analysis of Proposed Senate Election Law & Municipal Affairs NH Senate and Executive Council Maps

January 6, 2022

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What is this document?

- The majority and minority in the New Hampshire Senate Election Law & Municipal Affairs Committee have proposed 2020-2030 redistricting maps the NH Senate and NH Executive Council.
- There are four bills pending:
 - SB 240 Republican Senate map proposal
 - SB 241 Republican Executive Council map proposal
 - SB 253 Democratic Senate map proposal
 - SB 254 Democratic Executive Council map proposal.
- The Map-a-Thon Citizen Mapping Project's Mapping and Technical Team has analyzed these proposals, comparing their partisan lean, communities of interest, compactness, and other best practices.

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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 Winnepesaukee, the towns of Strafford and New Durham connected in an inaccessible point in the woods, and the 2010 flatorial 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 egislative 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

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.

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Takeaways on the NH Senate Proposals

- The 2010 NH Senate map was already gerrymandered for partisan advantage. Statewide vote totals in the 2020 election were 50-50 GOP and Democrat, but the seat split was 14 GOP vs 10 Democrat.
- The majority's 2020 map further gerrymanders to districts safer for the majority party, with a predicted 15 GOP vs 9 Democrat split.
- The minority's 2020 map is significantly more competitive (13 GOP vs 11 Democrat), and its districts, while competitive, give a slight advantage to the majority.
- The majority's 2020 map has some sprawling districts, one with towns lined up end-to-end from Hinsdale, in the extreme southwest corner of the state, to Bedford, in central NH.
- The minority's map has more compact districts, but also protects incumbent districts.
- Neither map prioritizes communities of interest.

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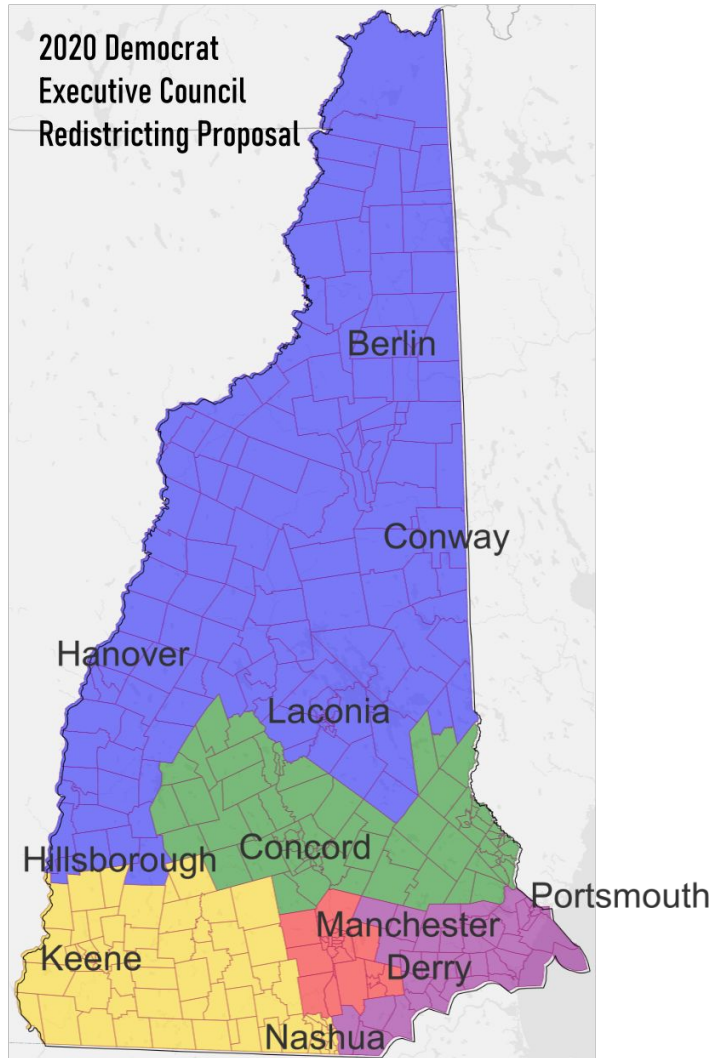


Takeaways on the Executive Council Proposals

- NH has five Executive Council districts. The 2010 NH Executive Council map was widely cited as gerrymandered, packing Democratic-leaning towns into the “dragon shaped” District #2, leaving the other districts more Republican and less competitive.
- The majority’s 2020 proposed map is identical to the gerrymandered 2010 map. It has one uncompetitive district and four districts that, while gerrymandered, are still somewhat competitive.
- The minority’s 2020 map has a slight 3-2 lean to the majority, but overall is a more competitive map.
- The majority’s 2020 map has one sprawling/not compact District #2, stretching from the Vermont border to the NH Seacoast.
- The minority’s map has an excellent compactness score, and does good job of retaining counties.

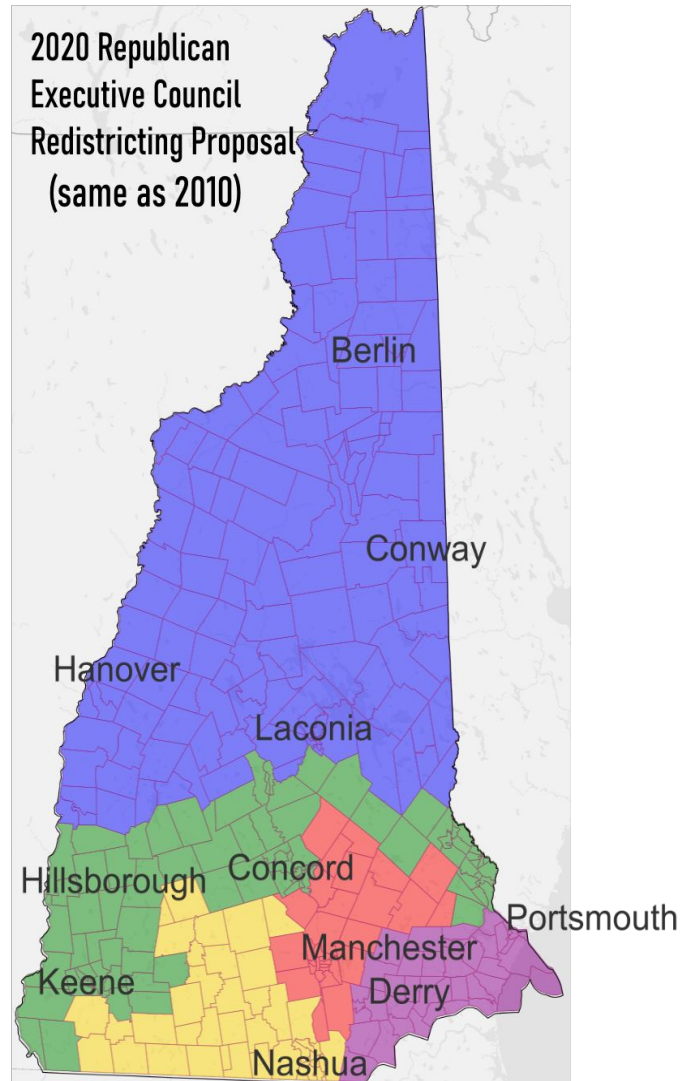
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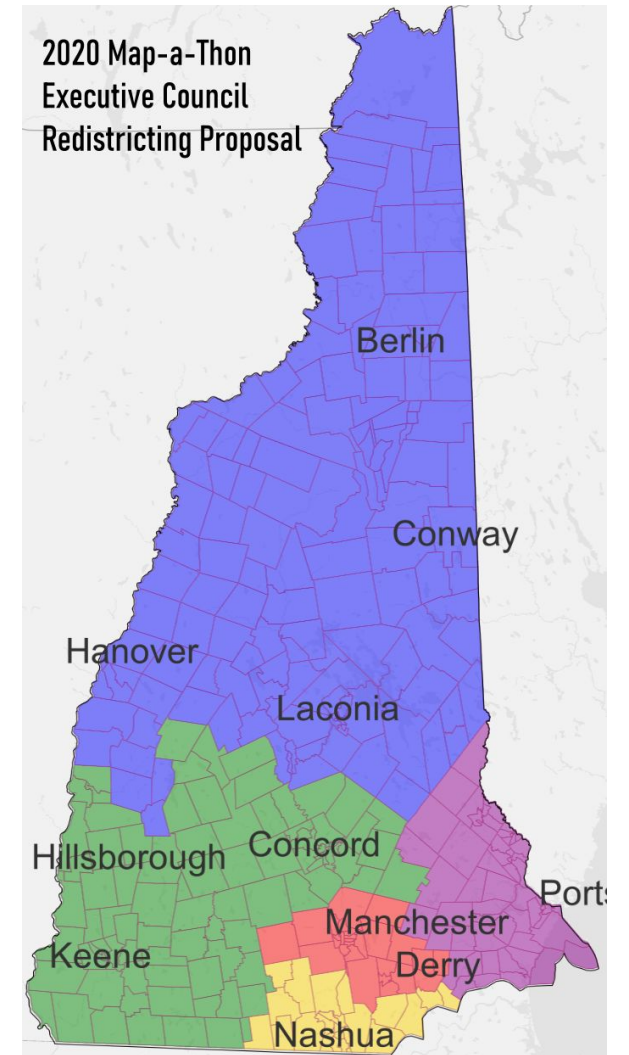
2020 NH Executive Council Map - Democrat Proposal

[Link to map on DRA mapping software](#)



2020 NH Executive Council Map - Republican Proposal

[Link to map on DRA mapping software](#)



2020 NH Executive Council Map - Map-a-Thon Proposal

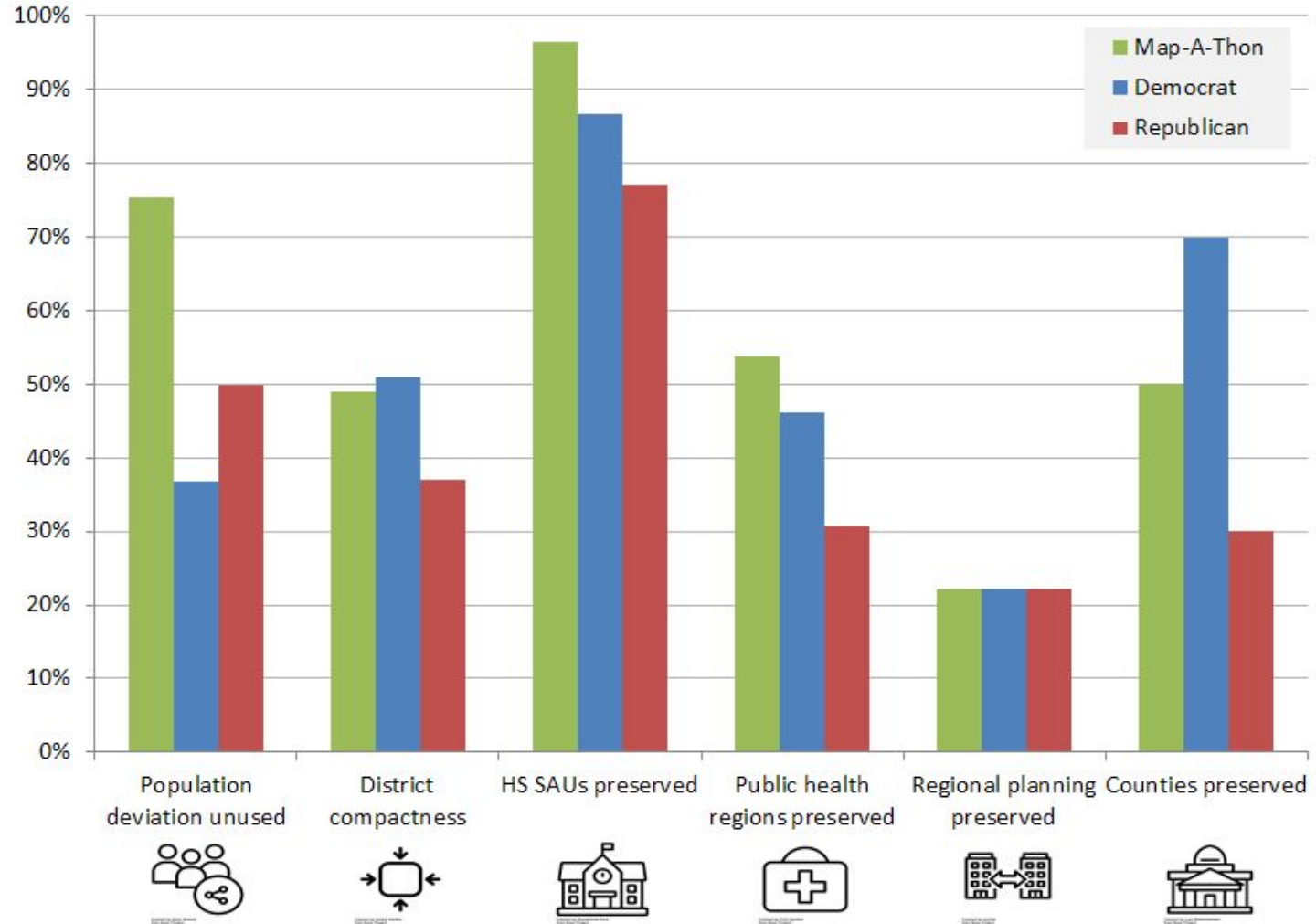
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NH Executive Council Maps with Communities of Interest



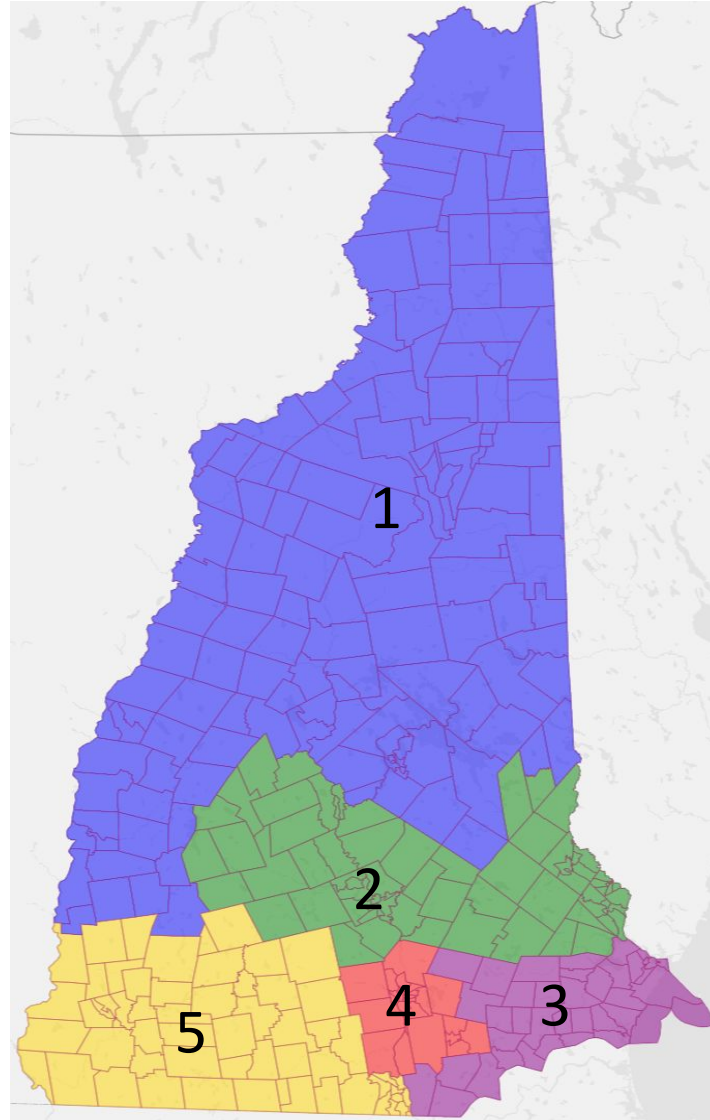
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District	2020 Exec Council Votes			Competitiveness
	Democrat	Republican	Other	
1	47.7%	52.3%		Competitive
2	51.4%	48.6%		Competitive
3	47.0%	53.0%		Competitive
4	45.0%	55.0%		Competitive
5	52.4%	47.6%		Competitive
Total Vote Share	48.7%	51.3%		
Seats Won	2	3		

The Democrats' proposal for the Executive Council districts has five relatively competitive districts, with District 1 as a very competitive district. This map overall has a slight lean towards Republicans but is overall very competitive. The map appears to have been constructed to keep counties together and does an excellent job at this by keeping 7 of the 10 counties together. In doing this it does a competent job of keeping High School SAUs together, but it was clear that this was not the initial intent of this map. The compactness of these districts is very good with a score of 51 from DRA.



2020 NH Executive Council Map - Democrat Proposal

[Link to map on DRA mapping software](#)

<<<Democrat Proposal<<<

Pros:

- 7 of 10 Counties preserved.
- 51 Compactness score (DRA)
- Manchester, Nashua, and Concord in their own districts.
- All districts are somewhat competitive.

Cons:

- Somewhat high deviation (6.32%)
- 11 split High School SAU's

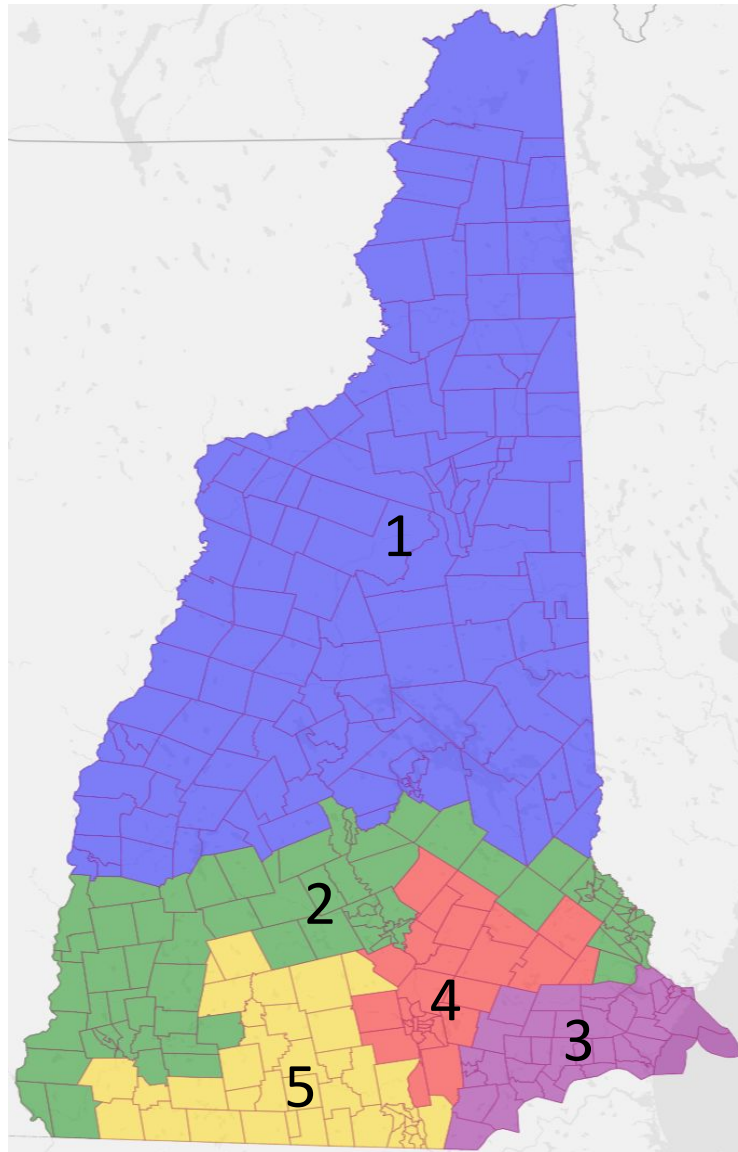
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District	2020 Exec Council Votes			Competitiveness
	Democrat	Republican	Other	
1	48.3%	51.7%		Competitive
2	54.5%	45.5%		Competitive
3	47.3%	52.7%		Competitive
4	44.2%	55.8%		Leans Republican
5	49.5%	50.5%		Competitive
Total Vote Share	48.7%	51.3%		
Seats Won	1	4		

The Republican proposal for the Executive Council is identical to the 2010 map. This is the same map the Governor Sununu said in a March 9, 2021 interview, “That’s got to be fixed.” It is a perfect example of gerrymandering with District 2 being “packed” with Democrats from Keene to Dover. This map splits 7 counties, 19 High School SAUs and has a compactness score of only 37.



2020 NH Executive Council Map - Republican Proposal

[Link to map on DRA mapping software](#)

<<<Republican Proposal<<<

Pros:

Manchester, Nashua, & Concord in their own districts

4 somewhat competitive districts

Deviation is neither particularly high nor particularly low (5.02%)

Cons:

19 split High School SAUs

7 split Counties

37 Compactness score (DRA)

Gerrymanders Democratic-leaning towns into one district

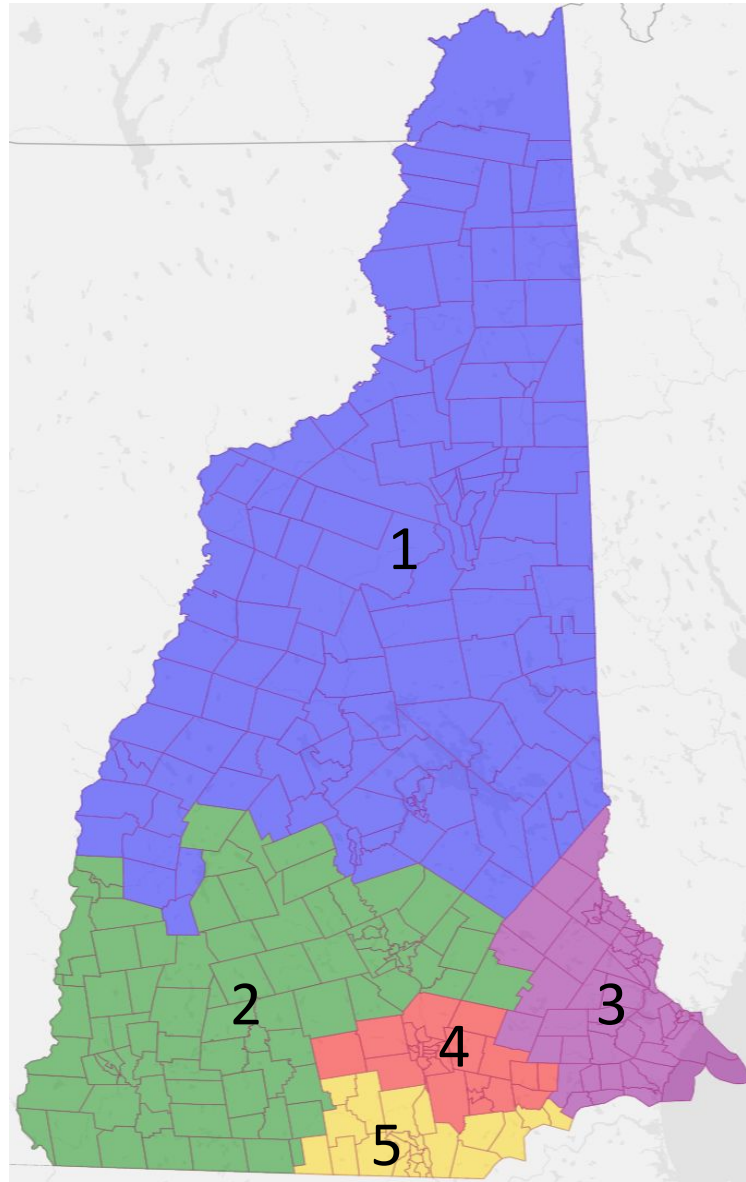
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District	2020 Exec Council Votes			Competitiveness
	Democrat	Republican	Other	
1	47.3%	52.7%		Competitive
2	50.6%	49.4%		Competitive
3	53.1%	46.9%		Competitive
4	43.8%	56.2%		Leans Republican
5	48.0%	52.0%		Competitive
Total Vote Share	48.7%	51.3%		
Seats Won	2	3		

The Map-a-Thon map was drawn trying to have a competitive map but also factor in Communities of Interest such as High School SAUs, Shared Emergency Services, and Public Health Regions. This map has a much lower deviation than the other proposed maps with only 2.47%. It also does a better job at keeping those COIs together with only three split High School SAUs.



2020 NH Executive Council Map - Map-a-Thon Proposal

[Link to map on DRA mapping software](#)

<<<Map-a-Thon Proposal<<<

Pros:

Low pop.deviation (2.47%)

4 somewhat competitive districts

1 very competitive districts

3 split High School SAUs

Manchester, Nashua, & Concord in own districts

49 Compactness score (DRA)

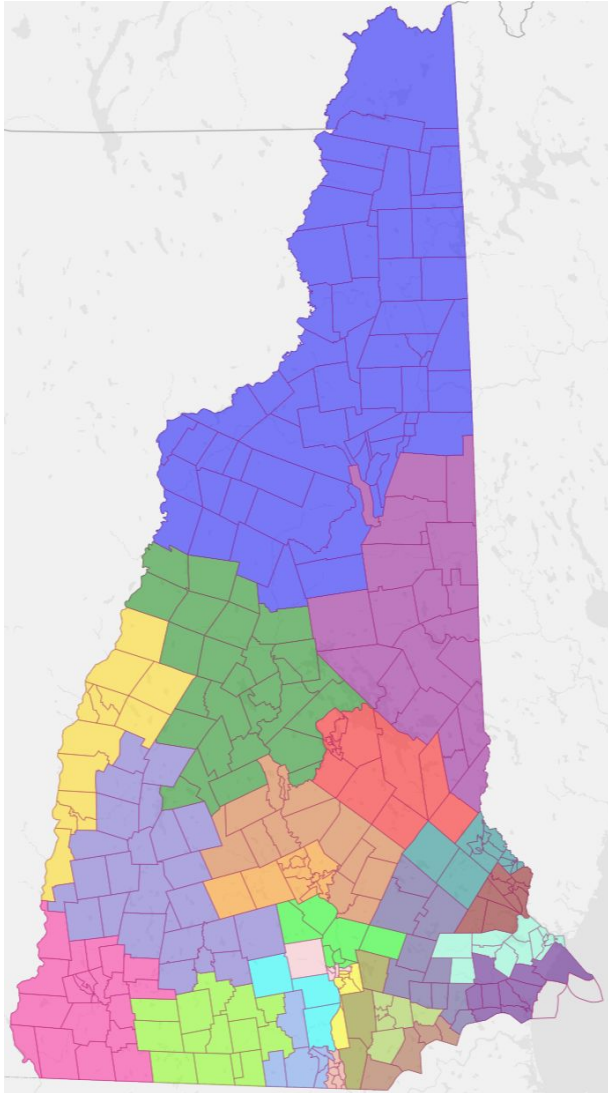
Cons:

5 split Counties

Some odd-shaped districts - but follow SAU lines

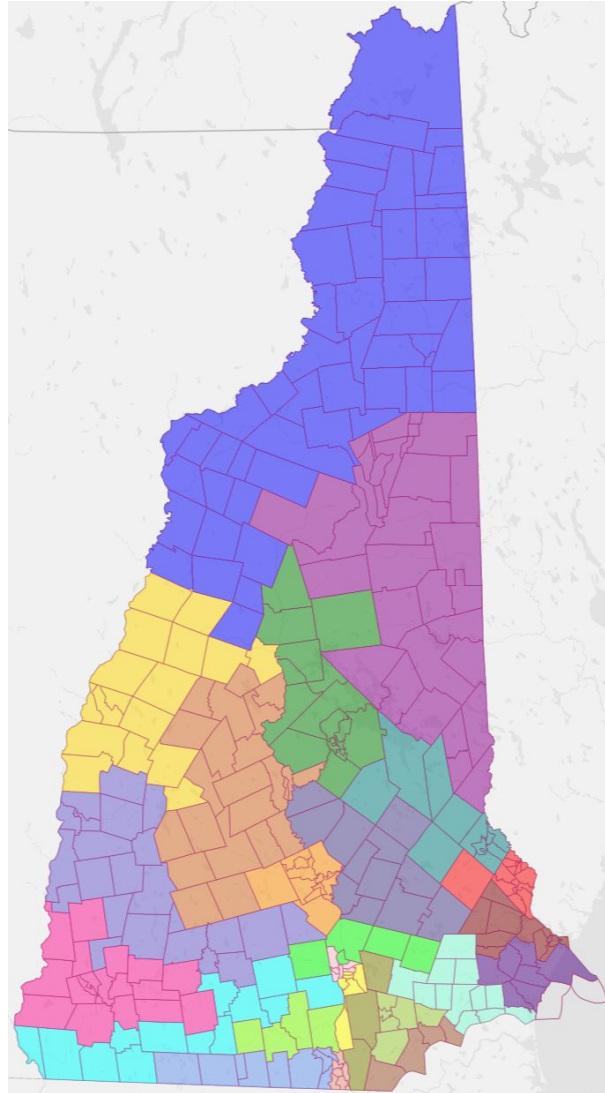
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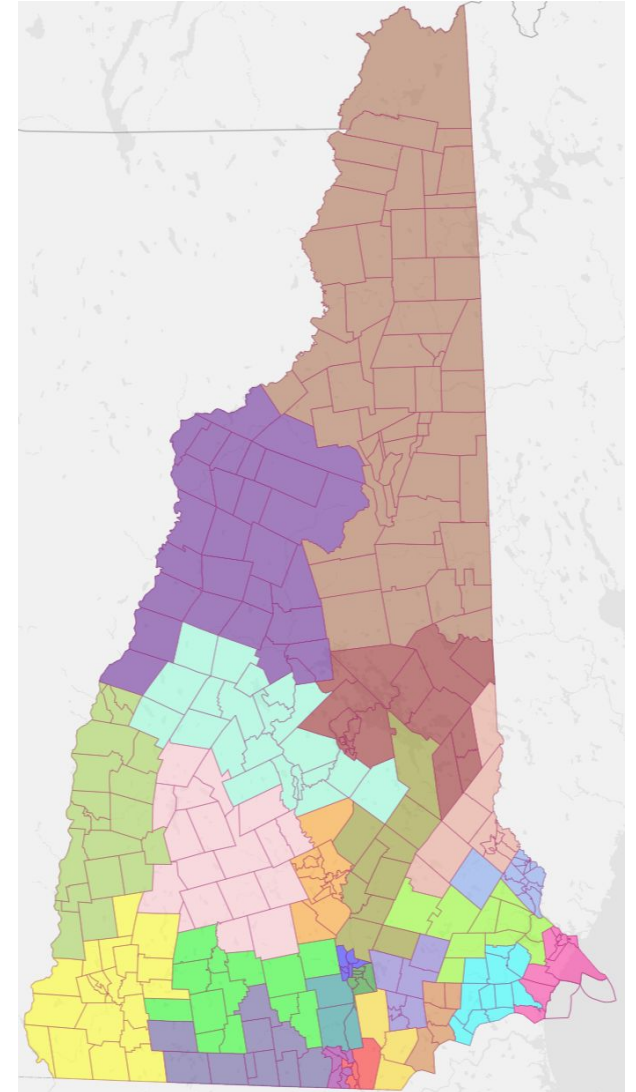
2020 NH Senate Map - Democrat Proposal

[Link to map on DRA mapping software](#)



2020 NH Senate Map - Republican Proposal

[Link to map on DRA mapping software](#)

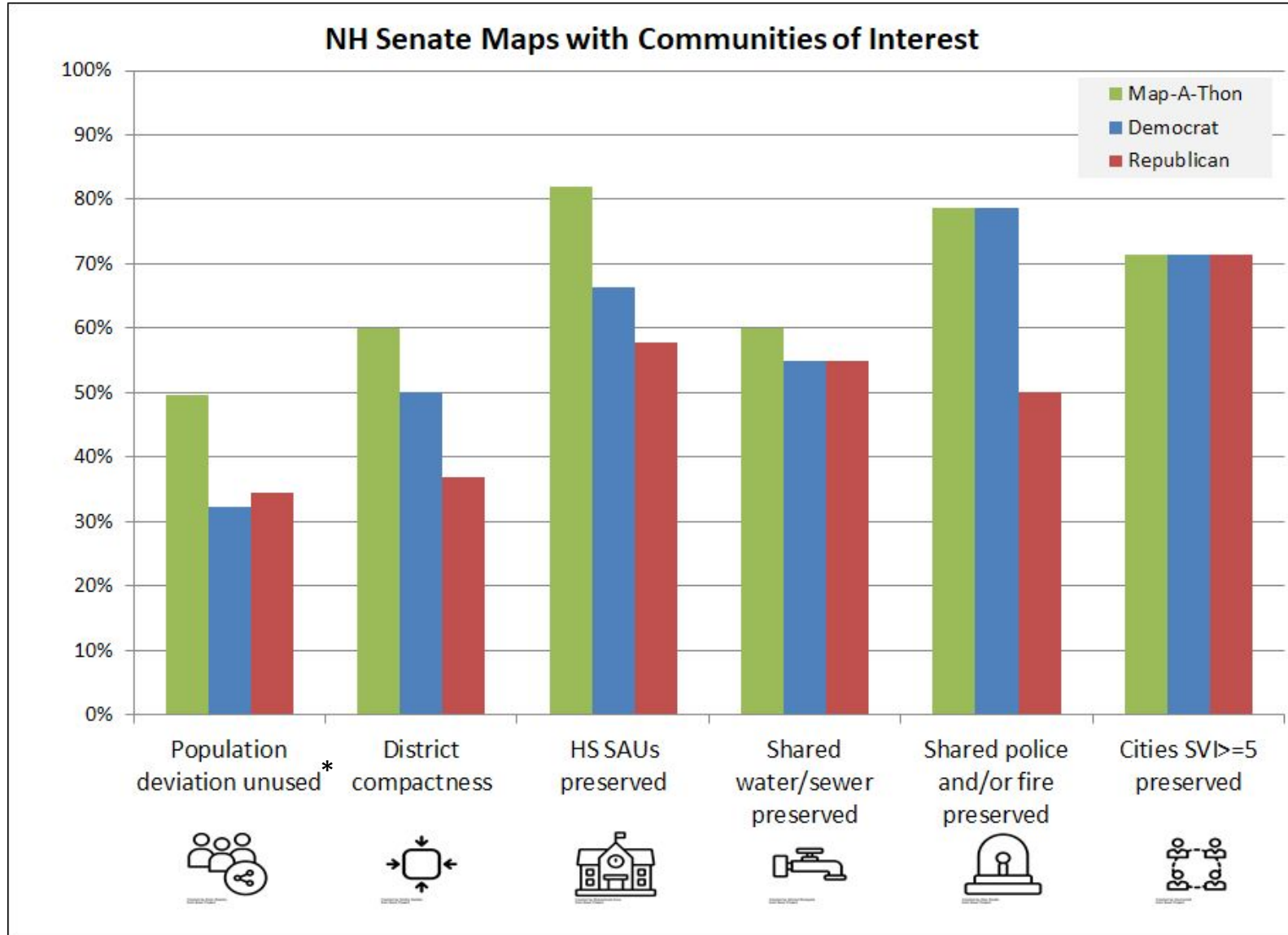


2020 NH Senate Map - Map-a-Thon Proposal

[Link to map on DRA mapping software](#)

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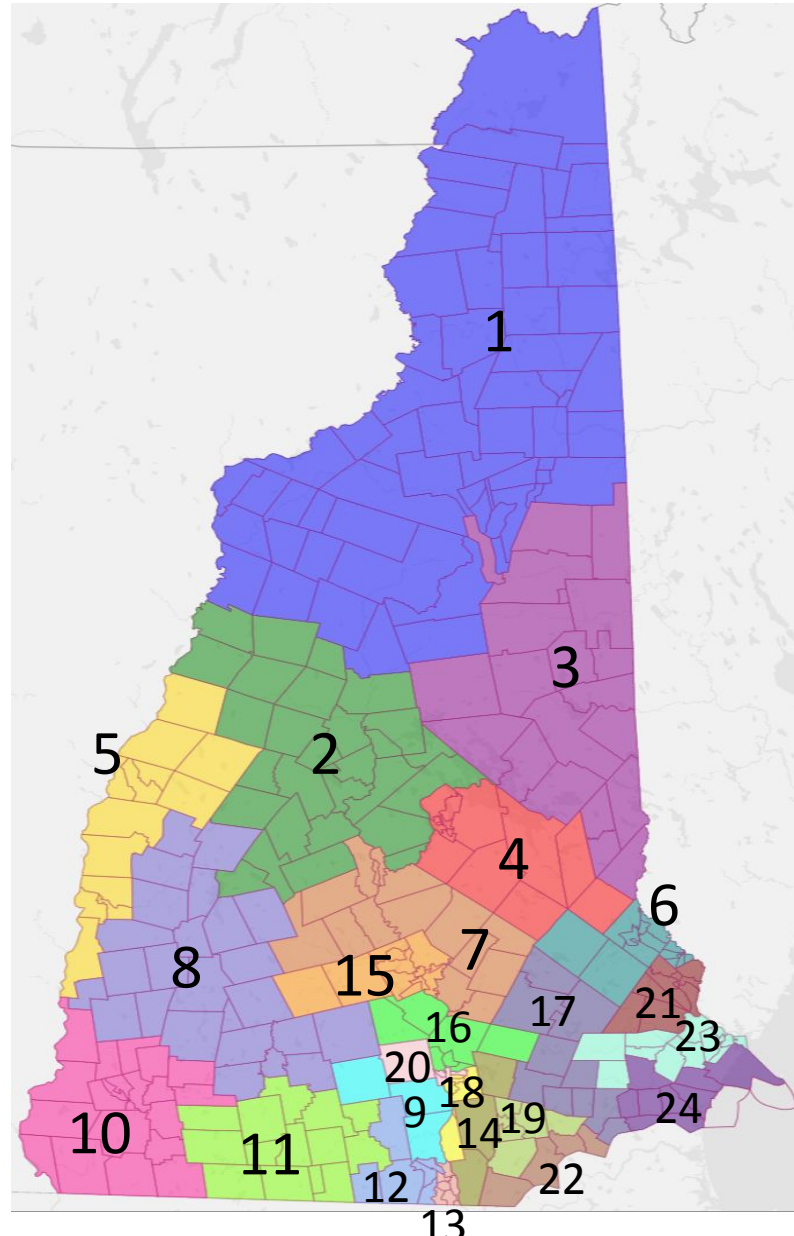
*Deviations do not include Nashua districts since the Nashua wards have not been officially redrawn yet

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District	2020 NH Senate Votes			Competitiveness
	Democrat	Republican	Other	
1	42.5%	57.5%		Leans Republican
2	45.9%	54.1%		Competitive
3	38.4%	61.6%		Leans Republican
4	39.9%	60.1%		Leans Republican
5	66.5%	33.5%		Leans Democrat
6	49.8%	50.2%		Competitive
7	41.0%	59.0%		Leans Republican
8	44.4%	55.6%		Leans Republican
9	46.1%	53.9%		Competitive
10	61.1%	38.9%		Leans Democrat
11	48.1%	51.9%		Competitive
12	53.6%	46.4%		Competitive
13	58.6%	41.4%		Leans Democrat
14	41.1%	58.9%		Leans Republican
15	64.0%	36.0%		Leans Democrat
16	51.8%	48.2%		Competitive
17	38.7%	61.3%		Leans Republican
18	55.4%	44.6%		Leans Democrat
19	42.5%	57.5%		Leans Republican
20	56.4%	43.6%		Leans Democrat
21	66.5%	33.5%		Leans Democrat
22	35.2%	64.8%		Leans Republican
23	60.3%	39.7%		Leans Democrat
24	54.0%	46.0%		Competitive
Total Vote Share	49.8%	50.2%		
Seats Won	11	13		



2020 NH Senate Map - Democrat Proposal

[Link to map on DRA mapping software](#)

<<<Democrat Proposal>>>

Pros:

- Under 10% deviation
- 7 competitive districts
- 3 very competitive districts
- 50 Compactness score (DRA)

Cons:

- Somewhat high deviation (6.78%)*
- Manchester split into 3 districts
- 28 split High School SAUs

*Deviations do not include Nashua districts because the Nashua wards have not been officially redrawn yet

The Democrats' proposal for the NH Senate is an improvement on the current map but still prioritizes incumbents over Communities of Interest. It keeps Manchester split into 3 districts when it could have 2 districts just on its own. It does however do a better job than the Republican plan in having competitive districts, compact districts, and doesn't split as many High School SAUs.

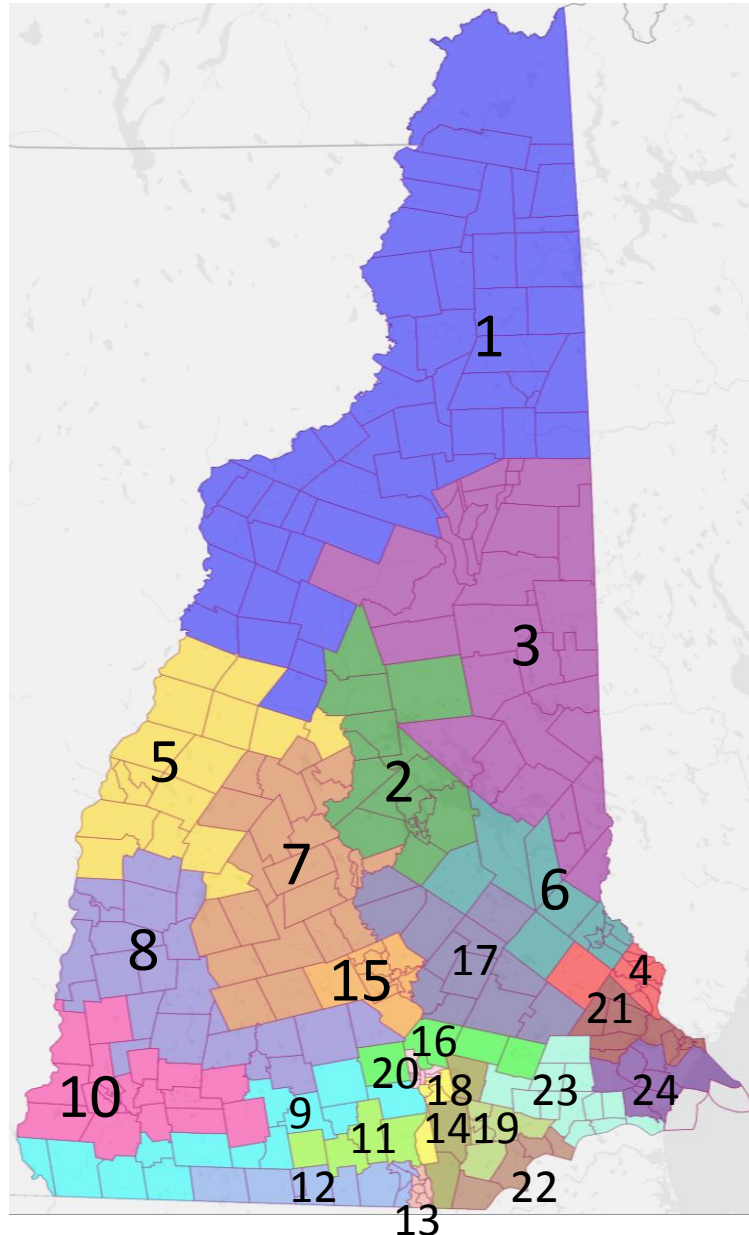
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District	2020 NH Senate Votes			Competitiveness
	Democrat	Republican	Other	
1	41.7%	58.3%		Leans Republican
2	43.7%	56.3%		Leans Republican
3	38.2%	61.8%		Leans Republican
4	61.4%	38.6%		Leans Democrat
5	67.7%	32.3%		Leans Democrat
6	42.7%	57.3%		Leans Republican
7	43.9%	56.1%		Leans Republican
8	41.6%	58.4%		Leans Republican
9	46.8%	53.2%		Competitive
10	64.2%	35.8%		Leans Democrat
11	49.8%	50.2%		Competitive
12	48.8%	51.2%		Competitive
13	58.6%	41.4%		Leans Democrat
14	41.1%	58.9%		Leans Republican
15	62.7%	37.3%		Leans Democrat
16	47.7%	52.3%		Competitive
17	40.7%	59.3%		Leans Republican
18	55.4%	44.6%		Leans Democrat
19	42.5%	57.5%		Leans Republican
20	58.9%	41.1%		Leans Democrat
21	67.0%	33.0%		Leans Democrat
22	35.2%	64.8%		Leans Republican
23	41.2%	58.8%		Leans Republican
24	57.1%	42.9%		Leans Democrat
Total Vote Share	49.8%	50.2%		
Seats Won	9	15		

The 2010 Executive Council map generally garners most of the attention in being a gerrymandered map in NH, but the 2010 NH Senate map wasn't much better. This 2020 proposed map makes the map worse. It packs Democrats into 8 districts (4, 5, 10, 13, 15, 20, 21, and 24) while cracking them in the remaining 16. This leads to a very lopsided map. With a nearly 50/50 vote in 2020, this map would have yielded a 15/9 majority for Republicans.



2020 NH Senate Map - Republican Proposal

[Link to map on DRA mapping software](#)

<<<Republican Proposal<<<

Pros:

Under 10% deviation

Cons:

Somewhat high deviation (6.56%)*

Manchester split into 3 districts

35 split High School SAUs

Only 3 competitive districts and ZERO very competitive districts

37 Compactness score (DRA)

*Deviations do not include Nashua districts because its wards have not been officially redrawn.

This map keeps most of the incumbent Senators in their districts and only makes small adjustments to make them safer. It does not take any Communities of interest into account. A perfect example is District 9 which stretches over halfway across the state from Hinsdale to Bedford, crossing 9 different High School SAUs. In total, the map splits 35 High School SAUs, and needlessly splits Coos County.

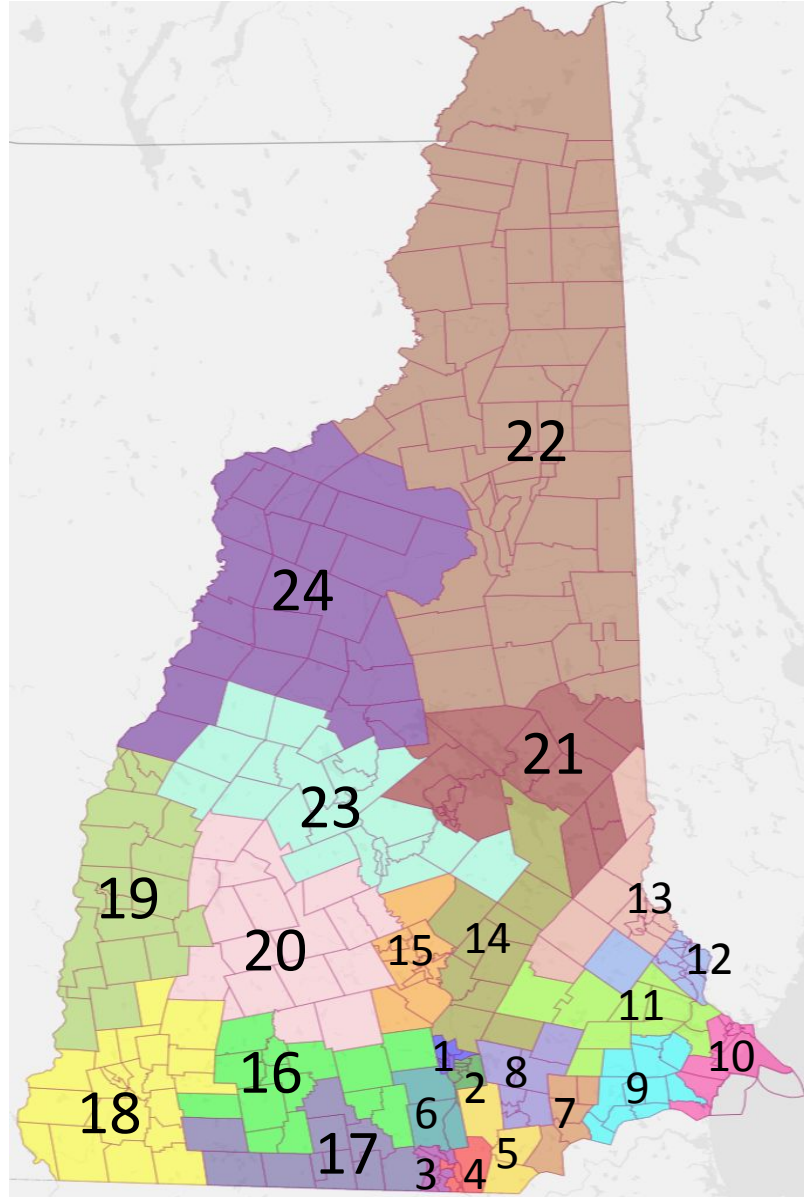
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District	2020 NH Senate Votes			Competitiveness
	Democrat	Republican	Other	
1	59.2%	40.8%		Leans Democrat
2	57.9%	42.1%		Leans Democrat
3	55.9%	44.1%		Leans Democrat
4	49.7%	50.3%		Competitive
5	40.0%	60.0%		Leans Republican
6	46.3%	53.7%		Competitive
7	35.4%	64.6%		Leans Republican
8	41.8%	58.2%		Leans Republican
9	50.9%	49.1%		Competitive
10	58.5%	41.5%		Leans Democrat
11	55.8%	44.2%		Leans Democrat
12	61.4%	38.6%		Leans Democrat
13	42.6%	57.4%		Leans Republican
14	40.4%	59.6%		Leans Republican
15	60.4%	39.6%		Leans Democrat
16	53.5%	46.5%		Competitive
17	45.8%	54.2%		Competitive
18	60.5%	39.5%		Leans Democrat
19	55.8%	44.2%		Leans Democrat
20	47.6%	52.4%		Competitive
21	39.3%	60.7%		Leans Republican
22	42.9%	57.1%		Leans Republican
23	41.9%	58.1%		Leans Republican
24	56.1%	43.9%		Leans Democrat
Total Vote Share	49.8%	50.2%		
Seats Won	12	12		

The Map-a-Thon's Senate map tries to keep Communities of Interest together while also keeping the map competitive and having compact districts. It has the lowest deviation of any of the proposed maps, has the highest compactness score, and only splits 15 High Schools SAUs compared to 28 in the Democrat proposal and 35 in the Republican proposal.



NH Senate Map-a-Thon Proposal

[Link to map on DRA mapping software](#)

<<<Map-a-Thon Proposal>>>

Pros:

- Low deviation (5.04%)*
- 60 Compactness score (DRA)
- 2 very competitive districts
- 4 competitive districts

Cons:

- 15 High School SAUs splits
- Oddly-shaped districts - but follow SAU boundaries

*Deviations do not include Nashua districts because the Nashua wards have not been officially redrawn yet

Partisan Lean for Proposed NH Senate Maps

Comparison of **predicted** district partisan lean using *2020 NH Senate elections results*, which yielded an extremely competitive state level two-party vote share of **49.8% Democrat** and **50.2% Republican**.

District seats 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, respectively (see previous slides for detailed assessment). Given the extremely competitive state level vote share, a representation map would be expected to either have a relatively even distribution of party lean among districts, or a relatively even distribution of party leaning and competitive districts.

Our prediction, tabulated below, indicates that the Democrat proposal deviates least, while the Republican proposal deviates most, from this ‘ideal’ voter representation.

2020 NH Senate Election		Partisan Lean of Proposed NH Senate Seats						
Dem (% of votes)	Rep (% of votes)	Map	Lean Dem (# seats)	Lean Dem (% seats)	Lean Rep (# seats)	Lean Rep (% seats)	Competitive (# seats)	Competitive (% seats)
49.8%	50.2%	Map-a-Thon	10	41.7%	8	33.3%	6	25.0%
		Democrat	8	33.3%	9	37.5%	7	29.2%
		Republican	9	37.5%	11	45.8%	4	16.7%

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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.

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What actions should I take?

- The NH House Election Law & Municipal Affairs Committee has a hearing on Monday, January 10, 1-4 pm at the NH State House. This is likely the only public hearing in the NH Senate for these bills.
- 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 if approved by the full Senate

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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 on NH House and Congressional maps:

<https://www.opendemocracyaction.org/maps>