Mapping and Analysis: New Hampshire's Proposed Executive Council & State Senate Districts

Gerrymandering in the Granite State, Visualized

A Report Commissioned by The American Civil Liberties Union of New Hampshire January 31, 2021



To: Devon Chaffee, Executive Director ACLU-NH Date: January 31, 2022

From: FLO Analytics Project No.:

F2186.01.001

RE: Analysis of the Gray Amendment #2022-0013S to SB240 and the Status Quo New Hampshire Executive Council Districts

EXECUTIVE SUMMARY

This memo analyzes the Gray Amendment #2022-0013S to SB240 and its likely consequences for the partisan composition of New Hampshire's state senate. Additionally, we provide an analysis of the state's status quo executive council districts.

Tabulating ward-level vote returns for the 2020 Presidential race facilitate a key analytical comparison – i.e., between the partisan leanings of the state house districts as they are currently constituted, and prospectively, as they would be constituted in Senator Gray's proposed map. Notice that the status quo electoral map was enacted by a previous GOP majority ten years ago following the preceding decennial redistricting.

In sum, three clear and politically significant conclusions emerge from our analysis of the Gray Amendment:

- The Gray Amendment #2022-0013S to SB240 would increase the number of GOP-leaning districts represented in the state senate. Specifically, the proposal would reverse the current political makeup of the senate. In its current form, the New Hampshire senate has 13 democratic leaning districts and 11 GOP leaning districts, according to our analysis of partisan lean. Under the proposal, this would change to 13 GOP leaning districts and 11 democratic leaning districts.
- The Gray Amendment #2022-0013S to SB240 would increase the "median seat lean difference" a technical term discussed below which simply captures the degree to which the partisan leanings of the political significant median district created by a districting plan diverges from the state at large.

Concerning the status quo New Hampshire executive council districts, the clear takeaway is that while four of the five districts are competitive, much like the Granite State itself, District 2 leans heavily Democratic, with a partisan lean of DEM + 6.3.

INSTITUTIONAL CONTEXT

To preserve some of the Republic's most fundamental principles, the New Hampshire state constitution requires that its legislature revisit its Congressional boundaries on a ten-year basis, after each decennial Census. Following a decade of significant population growth between 2020 and 2010 – especially in southern areas of the state – New Hampshire's state legislature has been tasked with passing a plan that preserves the established democratic principle of "one person-one vote."

Significantly, the legislature's decennial map-making is constitutionally constrained to respect the municipal boundaries of the state's constituent townships – i.e., it is enjoined from drawing senate lines that bisect town or city ward boundaries.

ANALYSIS

Concretely, our objective is to evaluate the Gray Amendment #2022-0013S's impact on the distribution of partisan lean among the 24 senate districts that elect New Hampshire's upper house and analyze the partisan leanings of the five status quo executive council districts.

Methodology

The standard metric used to quantify a party's support in a particular district is a concept known as "partisan lean" (PL). In the present context, we compute the PL of a (current or proposed) house district by comparing precisely how well the GOP fared in the focal district during the most recent Presidential contest minus the Party's performance in the US as whole.

In 2020, for instance, Donald Trump (R) won 47.7% of all votes cast for one of the two major parties in the US. In New Hampshire's two current US House districts, however, Trump's (R) two-party vote share was 47.2% and 45.3%, respectively. The PL of the congressional districts were thus R-0.5 and R-2.5. Both US House electorates, in other words, were competitive and, like the Granite State itself, relatively centrist.

It is worth noting that there are a variety of alternative ways one might choose to compute partisan lean – for example, by measuring GOP (or Democratic) support using vote shares in down-ballot state or federal contests, or (since New Hampshire has a partisan voter registry) using the proportion of registrants in the focal district who identify as Republicans. These alternatives are not without logical merit.

Nevertheless, we eschew down-ballot contests because local idiosyncrasies among the state's 24 elections (e.g., a political scandal or candidate's death during the campaign) would provide a distorted view of the parties' strength in that district. One adverse consequence of this choice is that, though we may capture the relative strength of GOP support, we may understate GOP support insofar as (1) the Republican Presidential standard-bearer in 2020 (Donald J. Trump) was comparatively unpopular and (2) Republicans do better relative to Democrats in down-ballot races compared to more prominent ones. These observations are in fact strong possibilities but tend to make our estimates more conservative.

We focus on vote shares rather than the partisan composition of the voter registration rolls because, if one looks at the population of registered voters at any given time, one is almost certainly going to find a biased sample of the general population that overstates the GOP vote to some degree. This follows from the notion that the citizens most likely to be on the roll at any given time are more apt to be residentially stable. Democrats, traditionally mobilize to get out their vote with registration drives – a phenomenon which may be exacerbated by New Hampshire's move to Election Day registration (EDR).

Gray Amendment #2022-0013S to SB240 is Favorable to GOP Electoral Fortunes

As Table 1 indicates, Gray Amendment #2022-0013S to SB240 would increase the number of GOP-leaning state senate districts. The table shows the net effect is to increase the number of GOP-leaning seats by 2, reversing the current political makeup of the senate from democratic leaning to republican leaning. Furthermore, the 11 democratic leaning districts would be far more concentrated with democratic voters than the GOP leaning districts are with GOP voters. For example, the average PL for democratic leaning districts is DEM + 9.11 whereas in GOP leaning districts it is GOP + 5.04. The significance of this is that a higher proportion of democratic votes are "wasted", in that they are not necessary to elect the democratic candidate. This point is illustrated in Figure 1.

Gray Amendment #2022-0013S to SB240 Moves the Median Seat Further from the State Median

Building on the district-level partisan lean variable, political analysts employ a metric knows as the "median seat lean differences" as a means of judging the degree to which the partisan leanings of the politically important median district differ from the leanings of the state as a whole.

Specifically, the median seat lean difference (MSLD) is defined as the difference between the partisan leanings of the state's median district and the state as a whole. For example, as it pertains to vote shares, if one arrays New Hampshire's senate districts from least to most Republican in the 2020 presidential election, one finds the median Republican share is 47.5% in the state house districts as they are currently configured and 49.6% were the Gray Amendment enacted in its present form, increasing the difference from the 46.3% of the two-party vote he won in New Hampshire as a whole. The median electoral district assumes special significance because of the majoritarian rules that govern the legislature. By definition, if it is Republican leaning, then a majority of districts in the legislature are as well. The MSLD therefore provides an indication as to how much partisan bias is inherent in a particular political map. Note, per our standard definition, Trump need not have obtained a plurality of the two-party vote in a district for it to qualify as "GOP-leaning," he simply needed to do better there than he did in the nation at-large.

CONCLUSION

The Gray Amendment #2022-0013S to SB240 is favorable to GOP prospects in future New Hampshire state senatorial elections. According to our analysis the two districts with a partisan lean that moves from one party to the other, both change from democratic to republican leanings. The partisan leanings of the status quo executive council districts are largely centrist, with the notable exception of District 2, which skews heavily democratic.

Table 1: Partisan Lean by District – SB240

District	Partisan Lean - Status Quo		Partisan Lean - Proposed		Median Seat Lean Difference (MSLD)
District 1	GOP +	2.1	GOP +	3.3	
District 2	GOP +	2.1	GOP +	3.6	
District 3	GOP +	2.5	GOP +	2.7	
District 4	DEM +	9.3	DEM +	9.3	
District 5	DEM +	16.9	DEM +	19.3	
District 6	GOP +	7.5	GOP +	6.7	
District 7	GOP +	5.8	GOP +	3.4	
District 8	GOP +	2.4	GOP +	6.0	\ 0
*District 9	DEM +	2.2	GOP +	1.0	Avg. GOP Vote Share State: 46.3% Status Quo: 47.5% Gray Amendment: 49.6% MSLD: GOP +3.3
District 10	DEM +	10.6	DEM +	13.3	
District 11	DEM +	2.5	DEM +	2.5	
District 12	DEM +	0.1	DEM +	0.1	V ₀ V ₀ V ₀
District 13	DEM +	9.1	DEM +	9.1)P Qv Qv Sind
District 14	GOP +	5.1	GOP +	5.1	GG Start Sta
District 15	DEM +	12.5	DEM +	12.7	3. 3. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5. 5.
*District 16	DEM +	1.7	GOP +	3.9	Av Av S Siray
District 17	GOP +	7.3	GOP +	6.6	
District 18	DEM +	0.2	DEM +	0.2	
District 19	GOP +	5.9	GOP +	5.9	
District 20	DEM +	3.3	DEM +	6.9	
District 21	DEM +	19.2	DEM +	19.1	
District 22	GOP +	9.4	GOP +	9.4	
District 23	GOP +	1.7	GOP +	7.9	
District 24	DEM +	2.4	DEM +	7.7	
GOP Leaning Districts		11		13	
DEM Leaning	13		11		

^{*}Partisan lean party change

Table 1: Partisan Lean by District - Status Quo NH Executive Council Districts

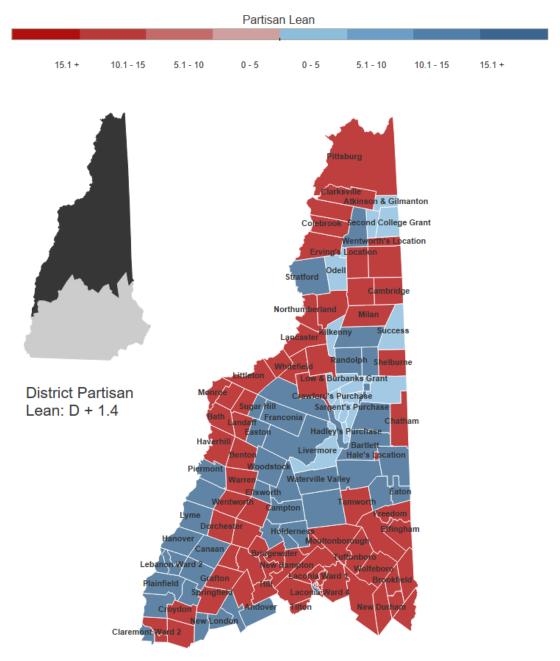
District	Partisan Lean		
District 1	DEM +	1.4	
District 2	DEM +	6.3	
District 3	GOP +	1.0	
District 4	GOP +	0.2	
District 5	DEM +	1.1	
GOP Leaning Districts			
DEM Leaning Districts			

Figure 1: Partisan Lean by District – SB240

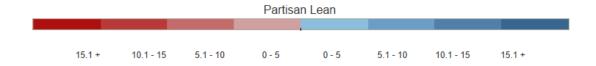


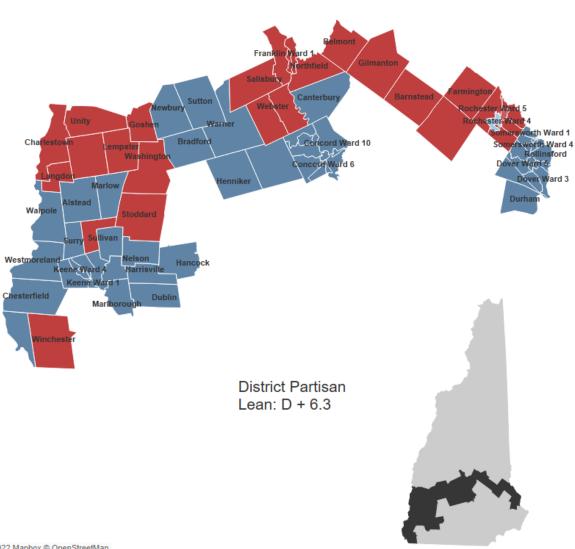
Executive Council

Showing Partisan Lean

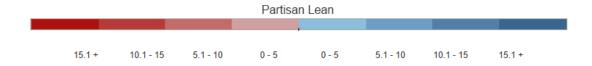


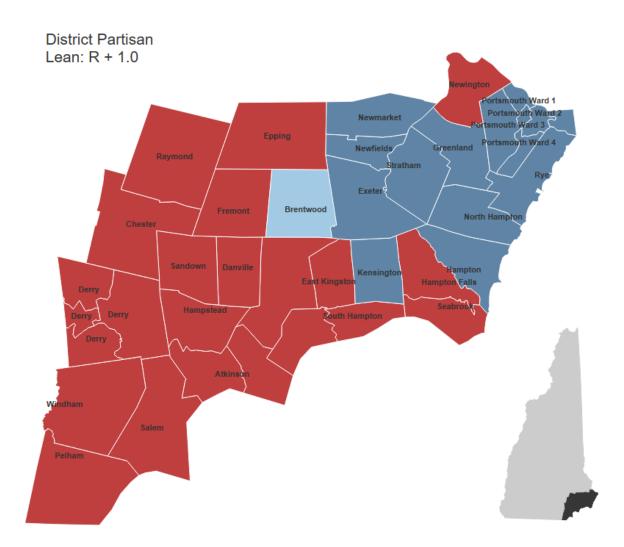
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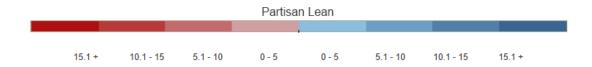


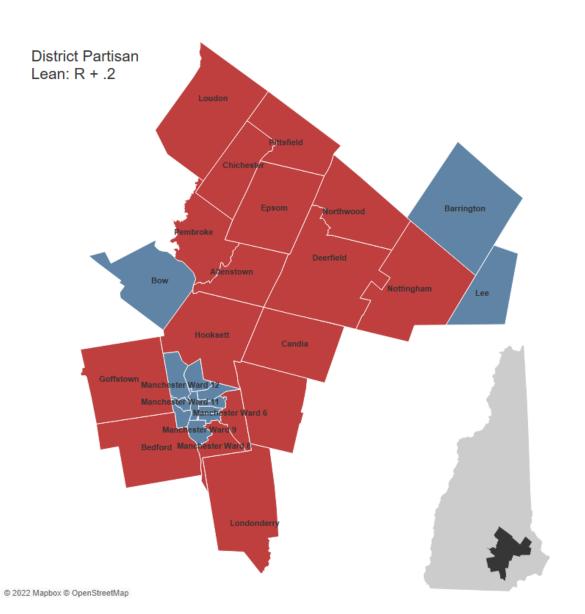
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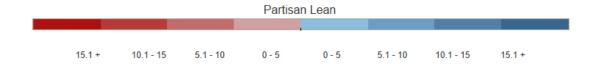


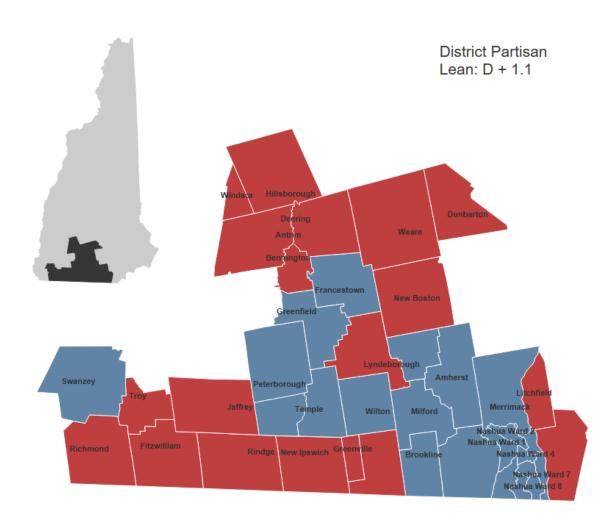


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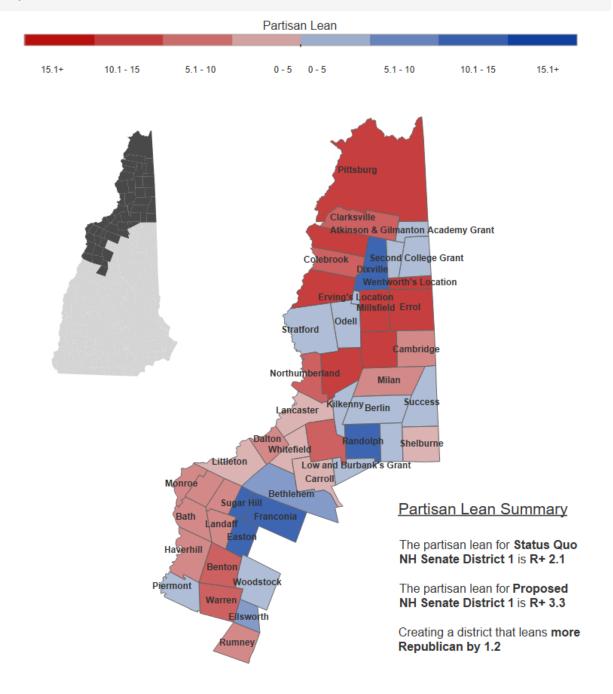


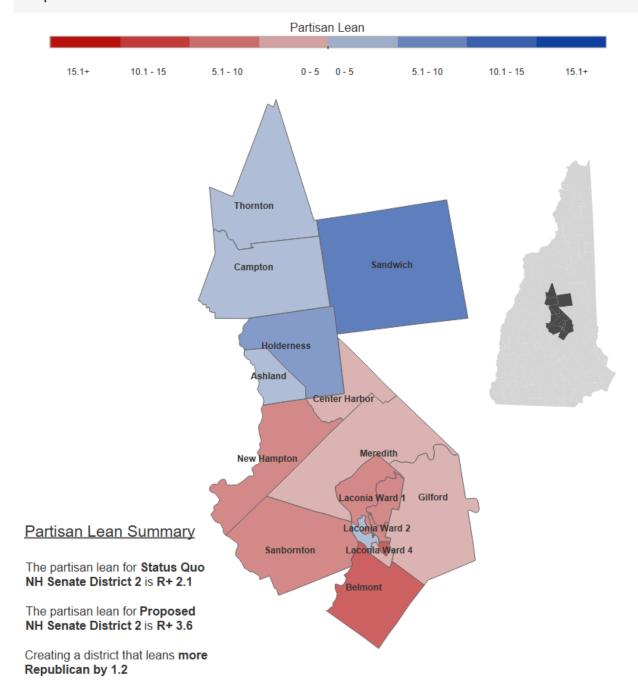


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N.H. Senate by District

Showing Partisan Lean

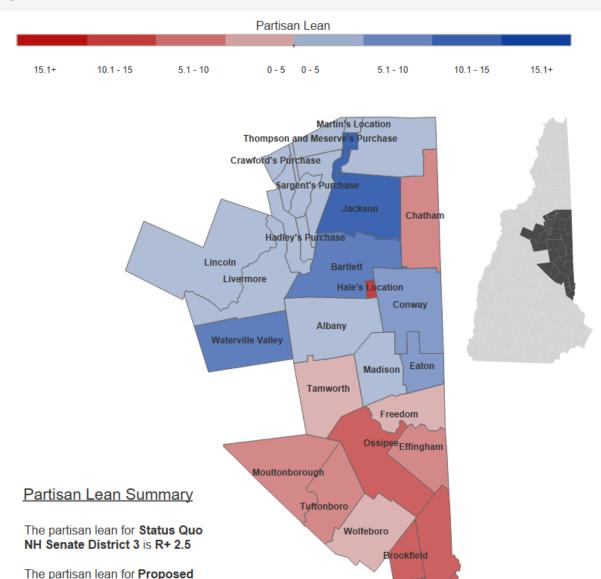




NH Senate District 3 is R+ 2.7

Republican by 0.2

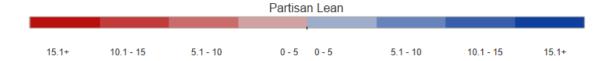
Creating a district that leans more

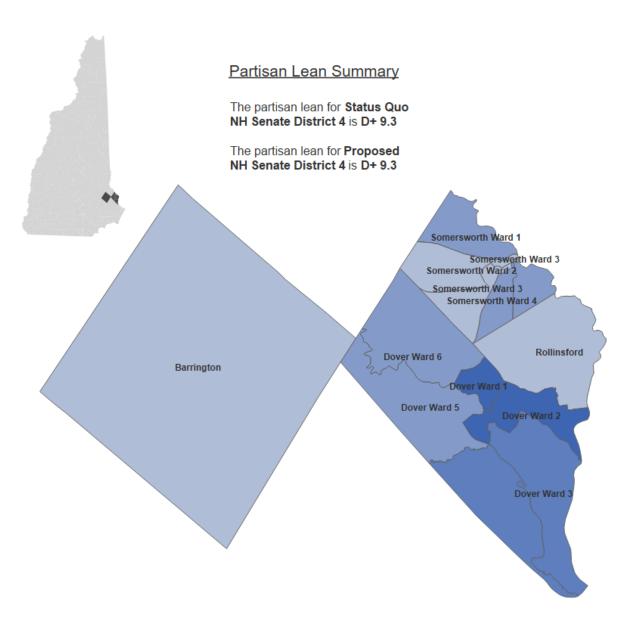


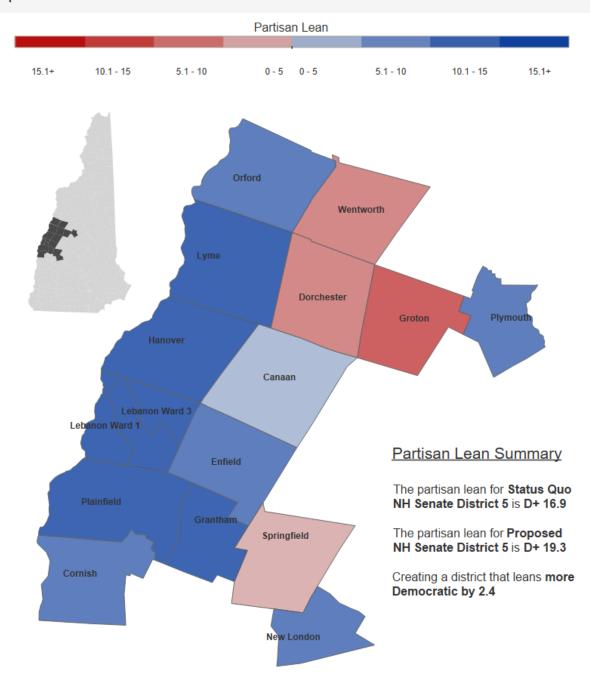
Data Sources: Senator Gray Amendment to SB 240 and the General Court of New Hampshire (status quo). Partisan lean computed at the ward level based on 2020 two-party Presidential vote. GOP leaning districts are those in which Trump (R) garnered a larger share than his national average (47.7%). Conversely, democratic districts - denoted in blue - are those in which Trump's two-party vote share was less than his national average.

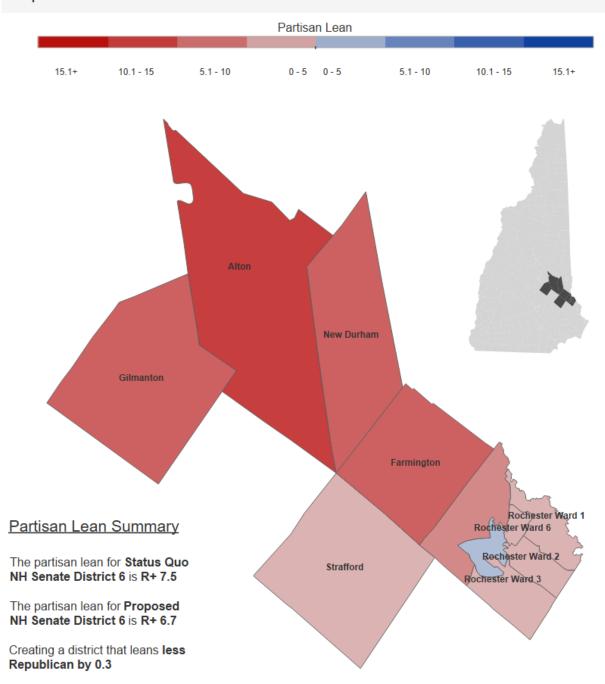
Middleton

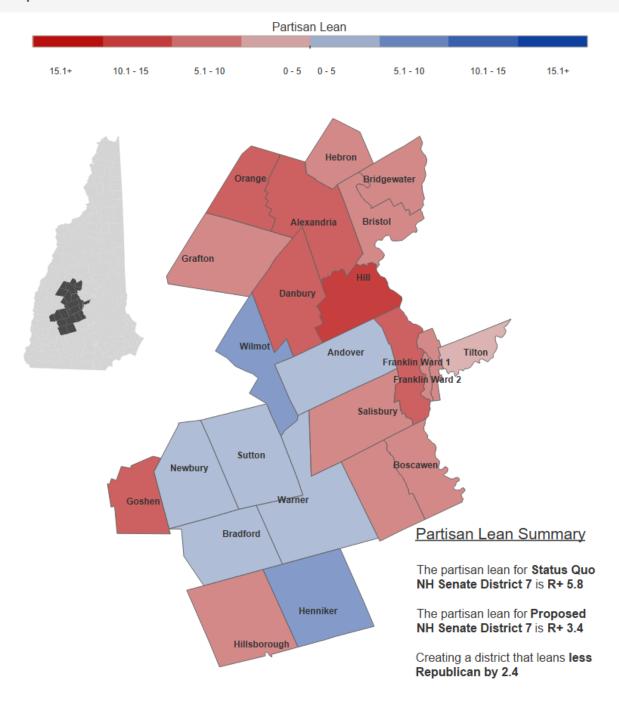
Milton

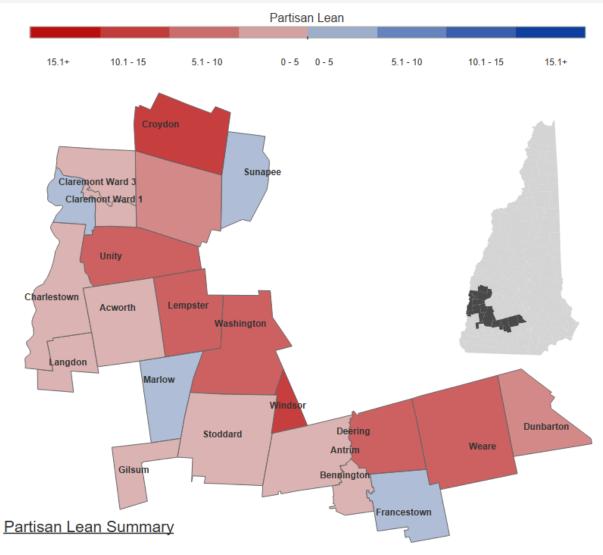








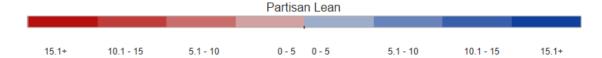


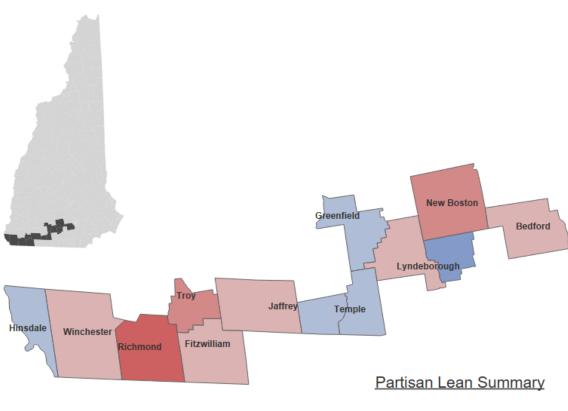


The partisan lean for Status Quo NH Senate District 8 is R+ 2.4

The partisan lean for **Proposed NH Senate District 8** is **R+ 6.0**

Creating a district that leans more Republican by 3.6

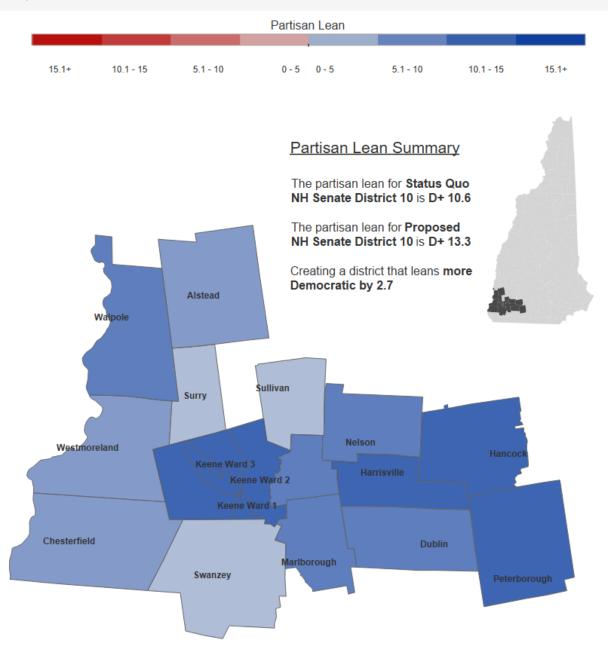


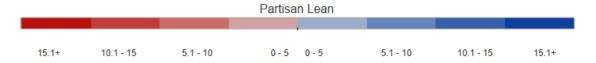


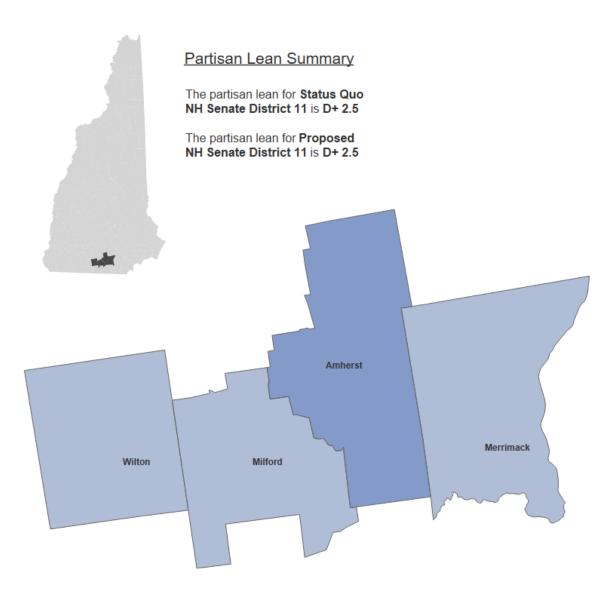
The partisan lean for Status Quo NH Senate District 9 is D+ 2.2

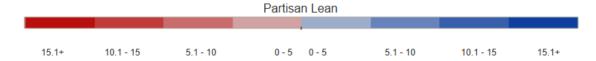
The partisan lean for **Proposed NH Senate District 9** is **R+ 1.0**

Creating a district that leans more Republican by 3.2







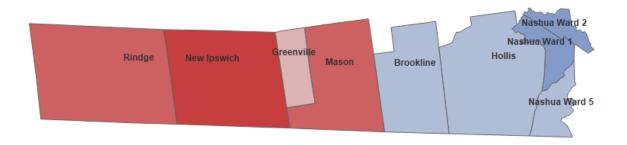


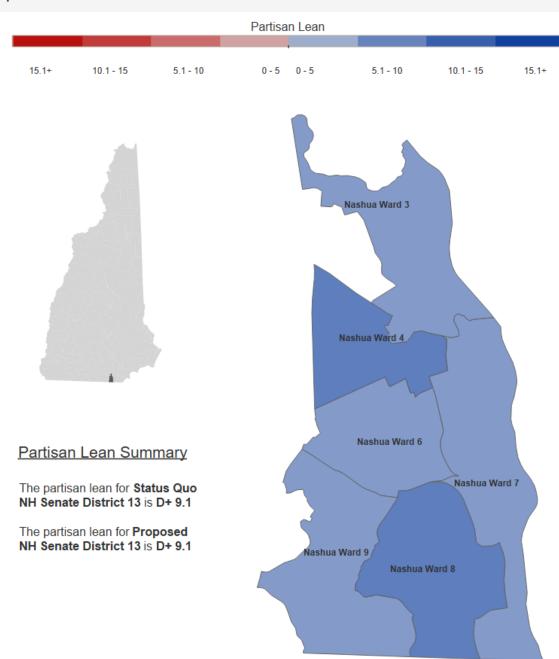


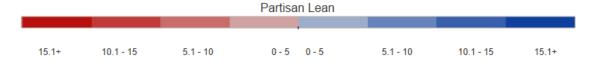
Partisan Lean Summary

The partisan lean for Status Quo NH Senate District 12 is D+ 0.1

The partisan lean for **Proposed NH Senate District 12** is **D+ 0.1**





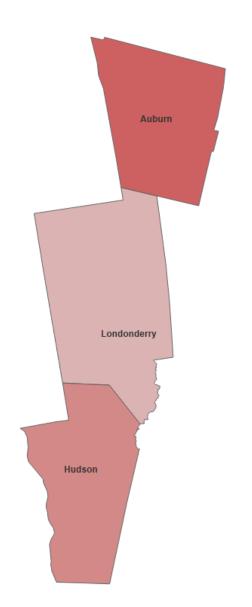


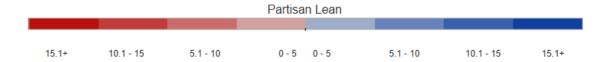


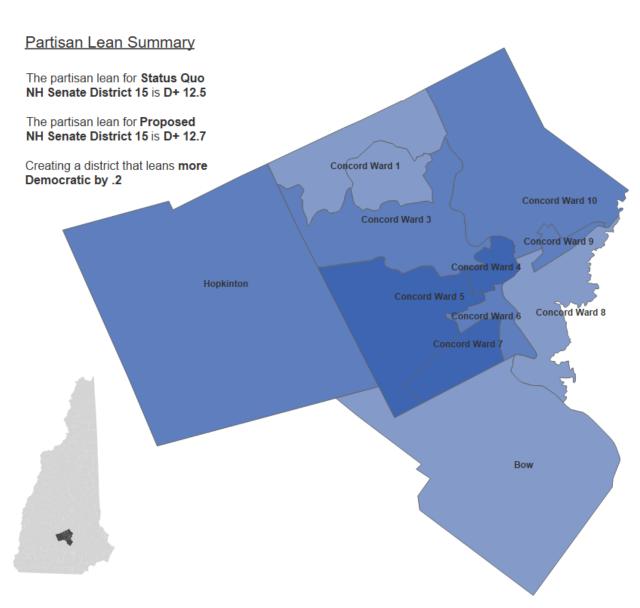
Partisan Lean Summary

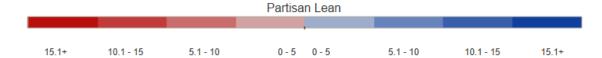
The partisan lean for Status Quo NH Senate District 14 is R+ 5.1

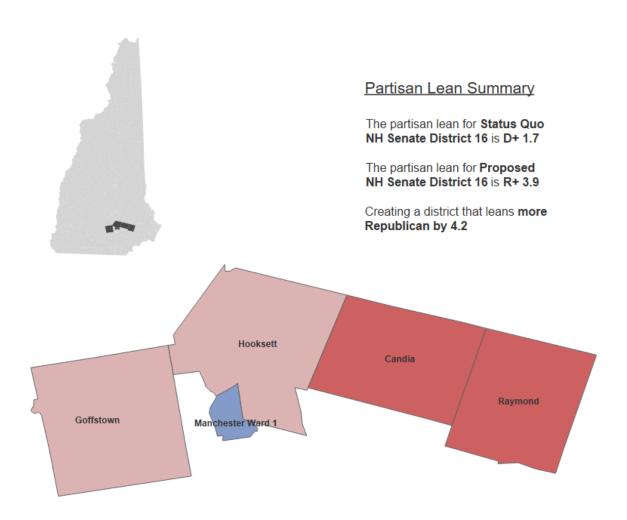
The partisan lean for **Proposed**NH Senate District 14 is R+ 5.1

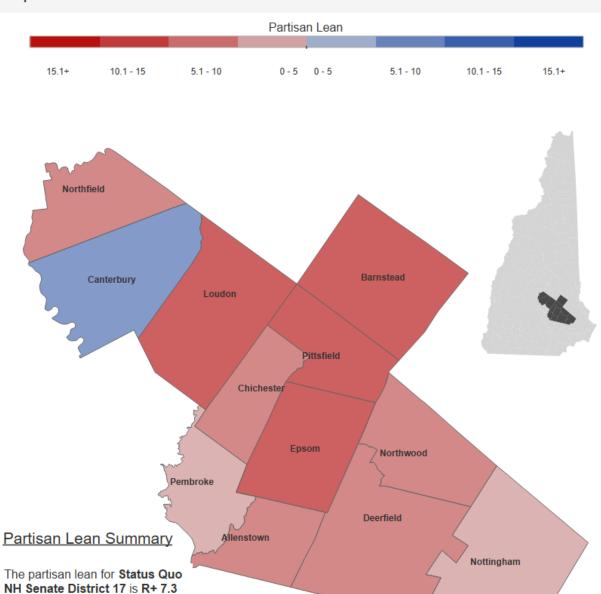






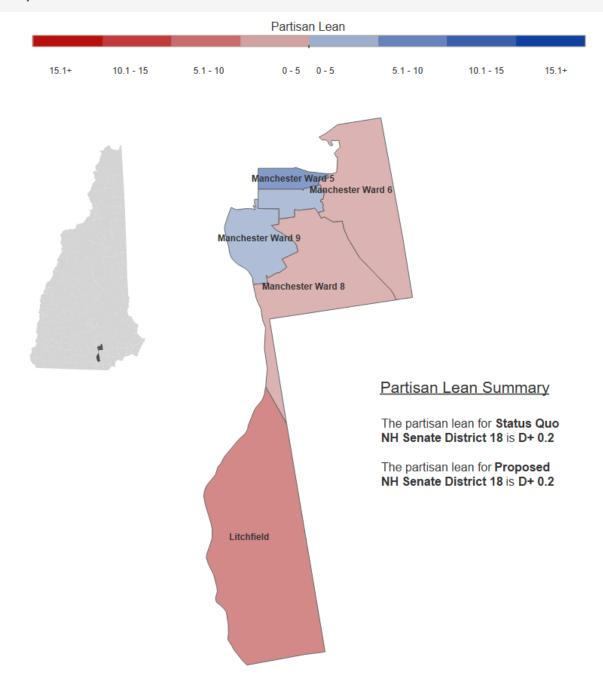


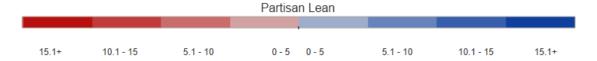


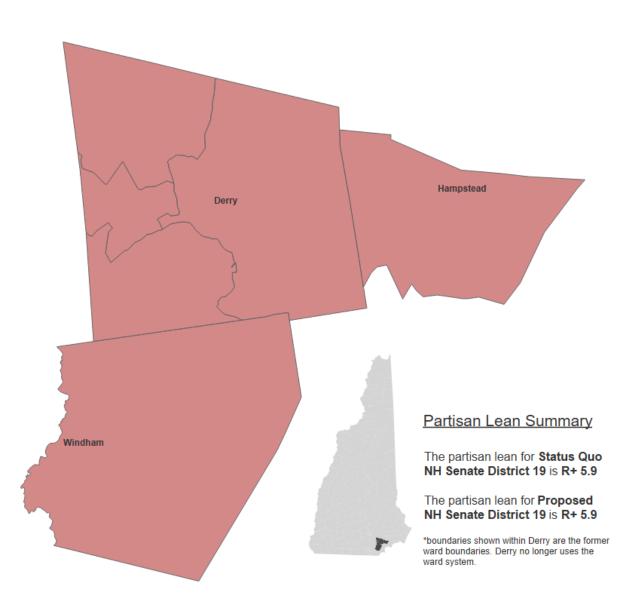


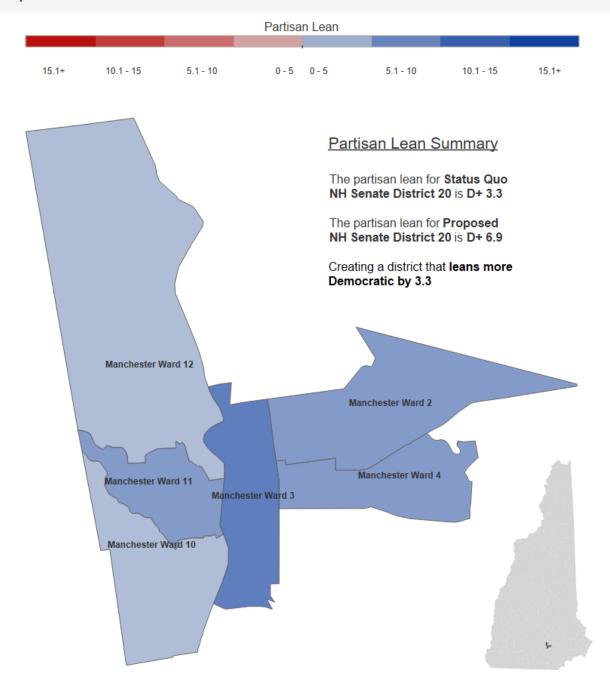
Creating a district that leans less Republican by 1.7

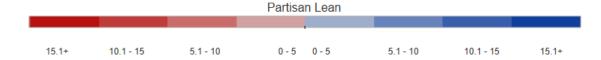
The partisan lean for **Proposed NH Senate District 17** is **R+ 6.6**

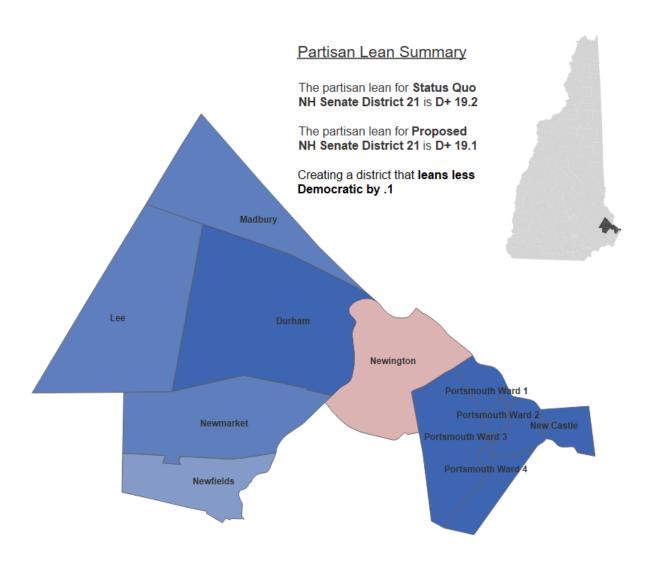


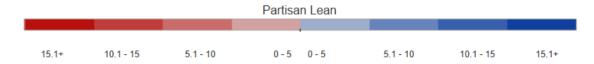


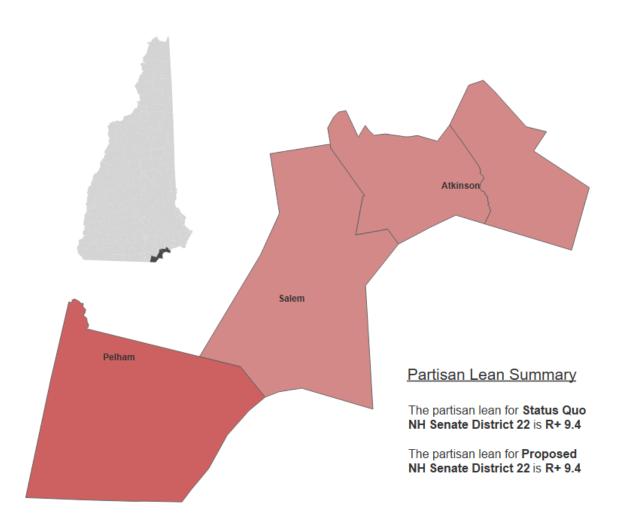


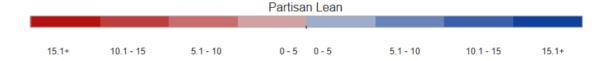


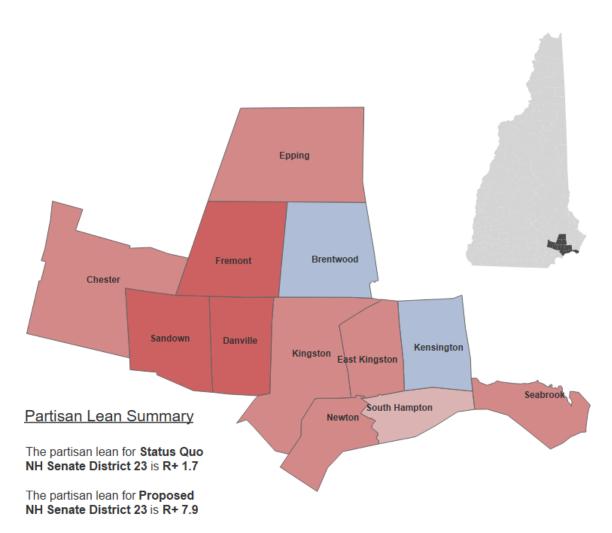




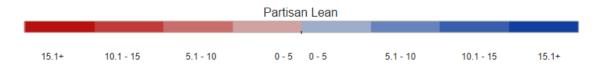








Creating a district that leans more Republican by 6.2



Partisan Lean Summary

The partisan lean for Status Quo NH Senate District 24 is D+ 2.4

