

**Report of the Legislative Apportionment Board Minority  
On the Proposed Alternate Senate Reapportionment Plan**  
*January 6, 2022*

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## Acknowledgements

The Apportionment Board gratefully acknowledges the invaluable efforts of the following individuals for their assistance and support throughout the Board's work.

- Deputy Secretary of State Christopher Winters, for his dedicated and helpful assistance in helping to organize the Apportionment Board and overseeing the support of the other Secretary of State staff who assisted the Board.

- Chief of Staff Eric Covey, Secretary of State's office, for taking detailed Minutes of the Board's many meetings, operating the remote meeting platform during meetings, and compiling Board of Civil Authority feedback for the Board.

- Mia Kro, from the Secretary of State's staff, for invaluable assistance with mapping software training and support, website creation and upkeep, and for producing legislative district maps for the Board's review and action.

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- Michael Chernick, Amerin Aborjaily, Tucker Anderson, and BetsyAnn Wrask, of the General Assembly's Legislative Counsel, for historical perspective and research assistance.

- Delia Gillen, of the General Assembly's Office of Legislative Information Technology, for expert and timely assistance with mapping software, reports, and other technical guidance

- The Boards of Civil Authority from over 140 towns and cities, for their review, comments, criticisms and suggestions on the Board's tentative House district proposal.

- The family members and work associates of the Apportionment Board members, for their support, patience and tolerance of the time demands of the Board's work.

## Introduction

Sections 13, 18, and 73 of Chapter II of the Vermont Constitution mandate reapportionment of the Vermont Senate and House following the release of the decennial U.S. Census, and require reapportionment to rely on the Census results. In 1965, the General Assembly enacted Chapter 34A of Title 17, establishing the Legislative Apportionment Board (the Board). To reflect shifts in population and assure substantially equal representation across all districts statewide, the Board prepares and submits House and Senate district plans to the Vermont Legislature.

17 V.S.A. §1901 requires reapportionment of Vermont's legislative districts *in such manner as to achieve substantially equal weighting of the votes of all voters in the choice of legislators. Chapter II of the Vermont Constitution establishes the same requirement, as does the Equal Protection provisions of the U.S. Constitution. This substantial equality requirement is the overarching mandate of our law.*

Based on this mandate, 17 V.S.A §1903(b) then lays out the standards and principles that govern creation of legislative districts [**emphasis added**]:

**“The standard for creating districts for the election of Senators on a county basis to the General Assembly shall be to form representative districts with minimum percentages of deviation from the apportionment standard for the Senate. The ... senatorial districts shall be formed consistent with the following policies insofar as practicable:**

- (1) preservation of existing political subdivision lines;
- (2) recognition and maintenance of patterns of geography, social interaction, trade, political ties, and common interests;
- (3) use of compact and contiguous territory.”<sup>1</sup>

An apportionment plan with lower district percentage deviations—regardless of whether single- or multi-member-- indicates that the voting weights of residents across the state will be more nearly equal than in plans with higher deviations. This is the appropriate and constitutionally understood measure of “substantial equality.”

The 2020 U.S. Census counted 643,077 residents in the state, a 2.8% increase over the 2010 census count. This population change was not uniform across the state, however; for example, the town of Essex increased by 2,507 people (+12.8%); Poultney decreased by 412 people (-12.0%); and Barre town and Guilford saw virtually no change (each decreased by 1 person.) Long-term trends in statewide population shifts have continued over the last 10 years, resulting in increased pressures on the reapportionment process – particularly in certain parts of the state.

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<sup>1</sup> <https://legislature.vermont.gov/statutes/section/17/034A/01903>

Here are four key definitional concepts used throughout this report:

**Ideal Senate District Population** = State population (643,077) / # of members in the Senate (30) x # of members in district (between 1 and 3 for the Senate<sup>2</sup>.) The ideal district population is 21,436 per Senator.

**District Deviation** = Actual district population – Ideal district population.

**Percentage Deviation** = District Deviation / Ideal population x 100. Generally speaking, if a district has a percentage deviation greater than 9% over or under the ideal, legal precedent suggests that the district could or may likely exceed what is constitutionally acceptable.

**Overall Deviation** – The overall deviation of a House or Senate redistricting proposal is the “spread,” or difference between the greatest negative percentage deviation and the greatest positive percentage deviation across the districts.

The Board reviewed a plan that would adjust the existing Senate districts mainly where a district's current population deviated from that of the ideal district by more than nine or 10 percent; these proposed changes also resulted in revising adjoining districts owing to the unavoidable "ripple" effect inherent in the reapportionment effort. In addition, in order to conform to the new three-Senator district maximum, we considered several options for new districts in and near Chittenden County. The Board's Alternate plan, described in this report, is the end result of this general approach.

The Board also reviewed a plan with all single-member Senate districts, which was developed by the same 4-3 majority of the Board that supported the all-single-member House plan. In their reapportionment of the Senate, the majority also chose to make an all-single-member district map their most important criterion. To achieve this result, their methodology for redistricting was to combine five contiguous single-member House districts in their entirety to form one single-member Senate district. (The resulting district map does not resemble a map of the counties.)

On November 29, 2021, the Board adopted the all-single-member map as its proposed Senate redistricting plan, again by a 4-3 vote. (Note that under 17 V.S.A. §1907, the Board's Senate plan is not sent to all towns and cities for review and comment by their Boards of Civil Authority. The Board did, however, receive comments and suggestions about the Senate plan-- some in BCA reports about the House plan, and others from individuals and groups.)

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<sup>2</sup> Senate Bill 11, enacted in 2019, amended 17 V.S.A. §1907 to limit the number of Senators per district to a maximum of three members.

## Overview of Critical Constitutional and Statutory Factors

### Substantial Equality

The Board minority's Alternate Senate proposal has an overall deviation of 14.83%. The largest negative deviation, -7.00%, is for the proposed three-member Washington district (all of Washington County; population 59,807, or 19,936 residents per Senator). The largest positive deviation, 7.83%, is for the proposed single-member Orange district (Orange County, save Newbury, Strafford, and Thetford; population 23,115.) This compares to the 18.01% overall deviation for the current enacted Senate plan, after the 2012 reapportionment.

### Geographical Compactness and Contiguity

The compactness of a legislative district is generally accepted as an important factor in assessing the soundness of an existing or proposed district's boundaries. Common sense tells us that a non-compact district that stretches out in a narrow band over a long distance, over mountains and valleys, is likely at risk of not capturing a community or group of communities that share common cultural, social, political and commercial ties and interests. (See 17 V.S.A. § 1903.)

The Maptitude for Redistricting software employed by the Board (and the General Assembly) can measure compactness using seven different approaches. The Board in 2001 and 2011 used two of these seven methodologies, the "Reock" score and the "Polsby-Popper" rating, to measure the compactness of the current and proposed Senate districts, and has done so in the current reapportionment. Each is an area-based test that compares a district to a certain circle, which is considered to be the most compact shape possible.

For each district, the Reock score<sup>3</sup> computes the ratio of the area of the district to the area of the minimum enclosing circle for the district. The measure is always between 0 and 1, with 1 being the most compact.

The Polsby-Popper test<sup>4</sup> computes the ratio of the district area to the area of a circle with the same perimeter as the district. The measure is always between 0 and 1, with 1 being the most compact.

For both compactness measures<sup>5</sup>, the table below displays summary statistics for the Alternate Senate plan.

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<sup>3</sup> Reock, E. C., Jr. Measuring the compactness as a requirement of legislative apportionment. *Midwest Journal of Political Science*, 5:70-74, 1961.

<sup>4</sup> Polsby, D. D., and R. D. Popper. The third criterion: compactness as a procedural safeguard against partisan gerrymandering. *Yale Law and Policy Review*, 9:301-353, 1991.

<sup>5</sup> For comparison, the Reock score for a perfectly square-shaped district is  $2/\pi \approx 0.637$ , while the Polsby-Popper rating for the same district is  $\pi/4 \approx 0.785$ .

	Reock	Polsby-Popper
Minimum	0.31	0.23
Mean	0.46	0.39
Maximum	0.67	0.53
Standard Deviation	0.09	0.09

Adherence to Town, City, County Boundaries and Other Existing Political Subdivisions

This criterion places a significant value on avoiding subdividing towns and crossing county lines when drawing Senate districts. As a state policy, it emphasizes the robust sense of collective identity shared by residents of Vermont’s cities, grants, gores, and towns, and the understandable disruption caused by separating parts of such entities into two or more legislative districts.

On the other hand, the nature and variation of county population sizes makes some splitting of counties unavoidable-- for example, Chittenden County’s population is far too large to be even a three-member district, and all but a few of the remaining counties have populations that are either too small or too large to be a district on their own—whether as a one-, two-, or three-member district.

In this Alternate Senate proposal, two cities and seven counties are divided; meanwhile, the Board’s majority plan includes 15 divided cities and towns, and 12 divided counties. (The current Senate map has no split cities or towns, and five divided counties.)

The table below includes a summary and comparison of town and county subdivisions in the Board’s majority and this Alternate Senate proposal.

<b>Town and County Division Summary</b>		
	<b>Majority Plan</b> 1-member districts: 30	<b>Alternate Plan</b> 1-member districts: 7 2-member districts: 7 3-member districts: 3
Number of cities/towns divided <i>Current plan has no divided towns</i>	15	2
Number of districts that include a split part of a town (% of districts) <i>Current plan has no such districts</i>	18 (60.0%)	3 (17.6%)
Number of counties divided <i>Current plan has 5</i>	12	7
Total number of county portions in districts <i>Current plan has 21</i>	49	26
Number of districts that cross a county boundary <i>Current plan has 6 cross-county districts (50%)</i>	14 (46.7%)	8 (47.1%)

As a measure of how well a proposal meets this criterion, it is also useful to consider the total number of split county portions in the plan (because some counties are split several times<sup>6</sup>—see row four of the table.) The Board’s Alternate Senate plan includes 26 such parts of counties-- more than in the current plan (21 county portions) but less than half of the 49 county portions in the Board majority’s Senate plan.

Recognition and maintenance of patterns of geography, social interaction, trade, political ties, and common interests

This factor envisions districts that “recognize and maintain” a sense of community and requires looking more deeply at some of the non-numerical factors that help bind a district together into a coherent entity. It is also an important companion to the factor just considered: to the extent that districts must be formed that cross town or county boundaries, the configuration of towns chosen should be based on an understanding of regional ties and interests (or lack thereof) so that such a sense of community coherence can be maintained.

Not surprisingly, it takes some care and persistence to create districts that, “insofar as practicable,” minimize deviation, avoid dividing towns, take into account geographic barriers, and acknowledge and support community, social, and/or economic ties.<sup>7</sup>

This Alternate proposal, we believe, offers a thoughtful, reasoned, transparent, data-driven, and fairer approach to redistricting the Senate than the Board majority’s plan— and certainly one that adheres to the law.

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<sup>6</sup> For example, Rutland County has an appropriate population size (60,572 people) to support representation by three Senators in one district (as it is now and as the Alternate plan proposes); however, the majority plan splits the County across five separate districts. Similarly, Franklin is divided between four districts, but its population size (49,946 people) can be represented with just two districts, if one of them has two Senators.

<sup>7</sup> The minority report (see Appendix 2) includes notable examples where it was possible to create districts that achieve these criteria, but which the majority consciously rejected because they were unwilling to allow any multi-member districts.



## Differences Between the Alternate Senate District Proposal and the Current Senate District Plan

As noted in the Introduction to this report, the population of Vermont has increased by 2.8% from 2010 to 2020; however, this change has varied considerably by region. As shown in the table, below, 11 counties have grown in population during the past decade, ranging from an increase of 0.4% for Washington County, to 7.4% for Chittenden County. Meanwhile, during the last decade three counties have decreased in population, from -1.6% for Rutland County, to -6.2% for Essex County. Therefore, given our generally county-based system of Senatorial districts, we expected this round of reapportionment to produce some notable changes in district composition—especially in those parts of the state where the population change has differed most from the statewide average.

County	2010 Population	2020 Population	Percent Change
Chittenden	156,769	168,323	7.4%
Lamoille	24,515	25,945	5.8%
Grand Isle	6,948	7,293	5.0%
Franklin	47,821	49,946	4.4%
Windham	44,502	45,905	3.2%
Windsor	56,600	57,753	2.0%
Addison	36,823	37,363	1.5%
Orange	28,944	29,277	1.2%
Bennington	37,078	37,347	0.7%
Orleans	27,245	27,393	0.5%
Washington	59,570	59,807	0.4%
Rutland	61,586	60,572	-1.6%
Caledonia	31,166	30,233	-3.0%
Essex	6,312	5,920	-6.2%

Such changes are most evident when we compare the current two-member Essex-Orleans and Caledonia districts, with the single-member Orleans, Caledonia-Orleans-Essex, and Caledonia districts of the Alternate Senate proposal: while the two sets of districts cover approximately the same set of towns overall, the existing plan includes four Senators for this region, while the Alternate proposal has just three Senators. This decrease in the number of Senators is a direct reflection of the relative population decreases in this region; at the same time, while the current plan allots seven Senators for the Chittenden and Chittenden-Grand Isle districts, the Alternate plan has eight for (roughly) the same region.

Another difference between the current Senate plan and the LAB’s Alternate proposal is a shift towards smaller districts—especially with respect to the 41-town current Essex-Orleans district, which includes all of both counties, plus Richford and Montgomery, from Franklin County, and Wolcott, from Lamoille County. In the Alternate Senate proposal, the closest in size is the 31-town Caledonia-Orleans-Essex district, which consist of all of Essex, plus six towns from each of Caledonia and Orleans Counties. Further, instead of the current six-Senator Chittenden district, the Alternate plan proposes two single-member and two two-member districts for a large portion of the county.

In the remainder of this section we provide district descriptions for the Alternate Senate plan, and highlight changes with respect to existing districts.

Addison district (two-member)

This district includes all of Addison County, plus the Chittenden County town of Charlotte. As was true in 2010 and in the 2012 reapportionment, on its own, Addison County is a bit too small to be represented by two Senators: its population is 37,363, a -12.8% deviation. Currently, Huntington and Buels Gore (from Chittenden County) are included in the Addison Senate district. The LAB received input from the Huntington Selectboard and town BCA, as well as individuals, requesting that the town be reunited in a Senate district with other Chittenden County towns—in particular, the other towns in the Mount Mansfield Unified Union School District. Indeed, the BCAs from all of that School District’s towns took action to file request with the LAB to combine all of the District’s towns into the same Senate district.

At the same time, a number of Charlotte residents also expressed their strong preference to be included in a Senate district with other Chittenden County towns.

Clearly, in this situation it simply is not possible to accommodate all towns and interested parties in the Chittenden-Addison area - and also achieve substantial equality of representation. The members of the Board minority believe that the Alternate proposal for the Addison district (includes Charlotte, does not include Huntington or Buels Gore) is a reasonable option. The resulting Addison district population is 41,275 people, a deviation of -3.7%.

Bennington district (two-member)

The Alternate plan includes two Windham County towns—Somerset and Stratton—that are in the current plan’s Windham district.<sup>8</sup> As was the case in 2010, on its own Bennington County is a bit too small to be represented by two Senators: its population is 37,347 people, a -12.9% deviation. The Alternate plan includes Stratton and Somerset in order to reduce this deviation. (While this deviation could have been reduced further, it would have required additional division of counties, which we rejected.) The resulting Bennington district population is 40,042 people, a deviation of -6.6%.

Caledonia district (one-member)

Caledonia-Orleans-Essex district (one-member)

Orleans district (one-member)

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<sup>8</sup> Wilmington, also from Windham County, is in the Bennington district as part of the current and Alternate plans.

Geographically, these districts together roughly correspond to the combined existing Essex-Orleans and Caledonia two-member districts.<sup>9</sup>

The Caledonia district consists of Caldeonia County towns, except Burke, Kirby, Lyndon, Newark, Sheffield, and Sutton, which are part of the Caledonia-Orleans-Essex district. Its population is 22,630 people, a deviation of +5.6%.

The Caledonia-Orleans-Essex district consists of all of Essex County, six towns from Caledonia County (Burke, Kirby, Lyndon, Newark, Sheffield, and Sutton), and six towns from Orleans County (Barton, Brownington, Charleston, Holland, Morgan, and Westmore). Its population is 22,378 people, a deviation of +4.4%.

The Orleans district consists of Orleans County towns, except Barton, Brownington, Charleston, Holland, Morgan, and Westmore, plus Wolcott, from Lamoille County. Its population is 22,501 people, a deviation of +5.0%.

Caledonia County is quite a bit too large to be represented by one Senator-- its population 30,233, a +41.0% deviation-- but it is clearly too small on its own for two Senators. In the current plan, the Caledonia two-member district includes all of the county plus six Orange County towns. Given the decreasing population of the region overall—especially to the north in Essex County but also in Caledonia itself—as well as trends in Orange County, retaining the current district configuration was not an option.

Moreover, the regional decline in population meant that creating a two-member Essex County “plus” district would likely extend beyond the current 41 towns and cover an even larger and unwieldy geographic area (the current Essex-Orleans district has population 38,513 and deviation -10.2%.)

The resulting three districts are an effort to create more compact and manageable Senate districts that largely retain a county-based structure and character.

Chittenden-Central district (two-member)

Chittenden-Central-East district (one-member)

Chittenden-East district (two-member)

Chittenden-Grand Isle district (two-member)

Chittenden-Northwest district (one-member)

Geographically, these five districts together roughly correspond to the combined current Chittenden and Chittenden-Grand-Isle districts.<sup>10</sup>

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<sup>9</sup> The current Essex-Orleans and Caledonia districts include seven towns that are not in any of the three Alternate plan districts: five towns from Orange County (Bradford, Fairlee, Orange, Topsham, and West Fairlee) and two from Franklin County (Montgomery and Richford.)

<sup>10</sup> The current Chittenden Senate district includes Charlotte, which is in the proposed Addison district. Meanwhile, the Alternate plan’s proposed districts for the Chittenden County region include four towns and one gore that are not in the current Chittenden area districts: Alburg, Buels Gore, Fairfax, Georgia, and Huntington.

The Chittenden-Central district consists of the city of Winooski, along with a portion of Burlington (22,136 people) and a portion of South Burlington (15,935 people.)<sup>11</sup> The remainder of Burlington is in Chittenden-Northwest and the remainder of South Burlington is in Chittenden-Central-East. The district population is 46,068 people, a deviation of +7.5%.

The Chittenden-Central-East district consists of St. George, Shelburne, Williston, and a portion of South Burlington (4,357 people, comprising New-Chittenden-7-4 from the Alternate House district plan.) The remainder of South Burlington is in Chittenden-Central. The district population is 22,971 people, a deviation of +7.2%.

The Chittenden-East district consists of Bolton, Buels, Essex, Hinesburg, Huntington, Jericho, Richmond, Underhill, and Westford. Its population is 44,518 people, a deviation of +3.8%.

The Chittenden-Grand Isle district includes all of Grand Isle County, plus Colchester and Milton (from Chittenden County) and Fairfax and Georgia (from Franklin County.) Its population is 45,399 people, a deviation of +5.9%.

The Chittenden-Northwest district consists of a portion of Burlington that comprises the New-Chittenden-6-1, 6-2, and 6-3 districts (from the Board minority's Alternate House plan.) Its population is 22,607 people, a deviation of +5.5%.

As noted above, since 2010 the population growth rate for Chittenden County has been the largest in the state—7.4%-- followed closely by the growth rates of neighboring Lamoille (5.8%), Grand Isle (5.0%), and Franklin (4.4%) Counties. Consequently, regarding population pressures, the redistricting work in this region of the state required a coordinated effort.

The five Chittenden County districts of this Alternate Senate plan also reflect an awareness and effort to balance other statutory principles and to accommodate, when possible, requests from local residents. For example:

- Bolton, Huntington, Jericho, Richmond, and Underhill, which comprise the Mount Mansfield Unified Union School District, are grouped together in the Chittenden-East district.
- Essex and Westford, comprising the Essex Westford Educational Community Unified Union School District, are joined in the Chittenden-East district.
- Limited town/city division: Burlington and South Burlington are each divided once. (For comparison, the Board majority's plan divides five communities in the region: Burlington, Colchester, Essex, Georgia, and Williston.)

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<sup>11</sup> The Burlington portion consists of the New-Chittenden-6-4, 6-5, and 6-6 House districts, and the South Burlington portion consists of the New-Chittenden-7-1, 7-2, 7-3, and 7-5 House districts, from the Board's Alternate House reapportionment proposal.

As is often the case, there were some requests that we weren't able to accommodate. In this region, the request that presented a notable challenge was from Charlotte residents who wish to remain grouped with other Chittenden County towns. (Charlotte is in the Alternate plan's Addison district.)

The difficulty arises from a combination of statutory-driven factors including: (1) the need to bolster Addison County's population, which currently has -12.8% deviation for a two-member district; (2) the need to maintain the population of Rutland County (to the south), which has -5.8% deviation for a three-member district; and (3) the geographic barriers from the east (the Green Mountains) and the west (New York state.)

The best option we found to balance these factors and maintain a largely county-based Senate redistricting plan was to include a relatively rural town that adjoins Addison County to the north.

#### Franklin district (two-member)

This district consists mainly of Franklin County towns, except for Fairfax and Georgia, which are in the Chittenden-Grand Isle district; the district also includes Belvidere and Eden, from Lamoille County. The current Franklin district also consists mainly of Franklin County; however, Montgomery and Richford are excluded, and Alburg (from Grand Isle County) is included.

At the time of the 2012 Senate reapportionment, the Franklin district was 10.8% larger than the ideal; meanwhile, during the past decade, the county has experienced higher than average population growth. Therefore, it is not surprising that the county continues to have large positive deviation from the ideal for a two-member Senate district: indeed, with population 49,946 people, the county deviation is +16.5%.

Furthermore, given the relative population growth overall in the northwest part of the state—especially in Chittenden County but in Grand Isle and Lamoille Counties, as well—a coordinated approach was needed. The Franklin District in the Board's Alternate plan thus arose from this effort to balance these regional population pressures.

The Franklin district population is 41,783 people, a deviation of -2.5%.

#### Lamoille district (one-member)

This district consists of Lamoille County towns, except for Belvidere and Eden (which are in the Franklin District) and Wolcott (which is in the Orleans district.) The current Lamoille Senate district includes all of Lamoille County except for Wolcott.

At the time of the 2012 Senate reapportionment, the Lamoille district was 9.3% larger than the ideal and meanwhile, during the past decade, the county has experienced the second-highest population growth in the state. Therefore, it is not surprising that the county now has an even larger positive deviation from the ideal for a single-member

Senate district: indeed, with population 25,945 people, the deviation is +21.0%. As a result, it was necessary to join several Lamoille towns with other districts.

The Lamoille district population is 22,579 people, a deviation of +5.3%.

#### Orange district (one-member)

This district consists mainly of Orange County, except for Newbury (which is in the Caledonia District) and Strafford and Thetford (both are in the Windsor District). The current Orange Senate district includes Orange County, except for Orange, Topsham, Newbury, Fairlee, and West Fairlee (all are in the current Caledonia district.)

As it was a decade ago, Orange County is quite a bit too large to be represented by one Senator, but definitely too small for two Senators: its population is 29,277, a +36.6% deviation. The Alternate plan takes a similar approach to the current plan: we also include some Orange County towns in one or more other districts. (We considered a plan that would combine most of Orange County with most of Caledonia County, but that created a much less compact district and did not eliminate the county division.) The resulting Orange district population is 23,115 people, a deviation of +7.8%.

#### Rutland district (three-member)

This district consists of exclusively Rutland County towns. In the current plan, Mount Holly is in the Windsor district. The Rutland district population is 60,572 people, a deviation of -5.8%.

#### Washington district (three-member)

This district consists of exclusively Washington County towns—the same as the current plan. The Washington district population is 59,807 people, a deviation of -7.0%.

#### Windham district (two-member)

This district includes all of Windham County except Somerset, Stratton, and Wilmington, which are in the Bennington district. Aside from Somerset and Stratton (discussed above), the only other change from the current plan is that Londonderry is reunited with the rest of Windham County. The district population is 43,210 people, a deviation of +0.8%.

#### Windsor district (three-member)

This district includes all of Windsor County, plus Strafford and Thetford (from Orange County.) As was the case in 2010, on its own Windsor County is slightly too small to be represented by three Senators: its population is 57,753, a -10.2% deviation. Strafford and Thetford were reasonable towns to include in the Windsor district, given their connections to each other and to neighboring Norwich and Sharon, with whom they share

a House district. The resulting Windsor district population is 61,622 people, a deviation of -4.2%.

## **Appendix 1: Apportionment Board Member Information**

Thomas A. Little, Shelburne, Vermont, Chair, is Vice President and General Counsel at Vermont Student Assistance Corporation in Winooski, Vermont. He chaired the Apportionment Board in 2010-2020. He represented Shelburne in the Vermont House of Representatives in the 1992 – 2002 sessions. Currently, he is Chair of the District 4 Environmental Commission, Chancellor of the Episcopal Diocese of Vermont, and Chair of the Board of Trustees of the University of Vermont Medical Center.

Edward Adrian, Burlington, Vermont, is Of Counsel at the Law Firm of Monaghan Safar Ducham PLLC in Burlington and previously served as the Chief Prosecuting Attorney at the Vermont Secretary of State's, Office of Professional Regulation. He is the former Vice-Chair of the Burlington Democratic Party. Ed was on the Burlington City Council from 2007-2012 and was Chair of the Burlington Library Commission from 2013-2017. A former commentator on Vermont Public Radio, currently Ed serves on the Vermont Commission on Women.

Jeanne Albert, Lincoln, VT, is a retired mathematics educator. From 1996 to 2008, she was a professor at Castleton State College (now Castleton University), and from 2008 to 2020 she was Director of STEM and Quantitative Support in Middlebury's Center for Teaching, Learning, and Research. Jeanne has served as a Board member for regional organizations including the Vermont State Colleges Faculty Federation, the New England Faculty Development Consortium, and the Appalachian Mountain Club's Three Mile Island Family Camp on Lake Winnepesaukee. She is currently Chair of Lincoln's town Democratic Party Committee.

Jeremy Hansen, Berlin, Vermont, a member of the Norwich University computer science faculty, earned his Ph.D. at the University of Wisconsin-Milwaukee in 2009 with a dissertation describing the structure of cryptographic hash algorithms. More recently, his research has explored the social implications and applications of technology, including privacy, computational social choice, security of implantable medical devices, and elections. He served on the Berlin Selectboard from 2013 to 2020. Jeremy founded and is Chair of the Governing Board of the public Internet service provider CVFiber.

Mary Houghton, Putney, Vermont, is retired from a career in the development and stewardship of affordable housing. She worked for the Burlington Community Land Trust (now the Champlain Housing Trust) and Brattleboro Housing Partnerships. She currently serves on the Boards of Directors of the Housing Foundation, Inc., and the Tri-Park Housing Cooperative.

Tom Koch, Barre Town, practiced law in Barre City for 40 years and is now retired. He represented the Town in the Vermont House of Representatives from 1977 to 1981 and again from 1997 to 2015. He is a member of the Barre Town, Washington County, and Vermont Republican Committees, and is Assistant Treasurer of the state Committee. He



is a member of Shepherd of the Hills Lutheran Church in Montpelier, where he serves on the Church Council.

Robert Roper, Stowe, Vermont, currently is the President of the Ethan Allen Institute and frequent guest host of True North Radio. He previously was Chairman of the Vermont Republican Party, Executive Director for the Vermont Chapter of FreedomWorks and Executive Director for Vermonters for Better Education. He served on the Apportionment Board in 2010-2020.

## Appendix 2: Minority Report

### Introduction

As noted in the Introduction to the Board’s Senate Report, 17 V.S.A. §1901 requires reapportionment of Vermont's legislative districts *in such manner as to achieve substantially equal weighting of the votes of all voters in the choice of legislators. Chapter II of the Vermont Constitution establishes the same requirement, as does the Equal Protection provisions of the U.S. Constitution. This substantial equality requirement is the overarching mandate of our law.*<sup>12</sup> Based on this mandate, 17 V.S.A §1903(b) then lays out the standards and principles that govern creation of legislative districts [**emphasis added**]:

**“The standard for creating districts for the election of Senators on a county basis to the General Assembly shall be to form representative districts with minimum percentages of deviation from the apportionment standard for the Senate. The ... senatorial districts shall be formed consistent with the following policies insofar as practicable:**

- (1) preservation of existing political subdivision lines;
- (2) recognition and maintenance of patterns of geography, social interaction, trade, political ties, and common interests;
- (3) use of compact and contiguous territory.”<sup>13</sup>

An apportionment plan with lower district percentage deviations—regardless of whether single- or multi-member-- indicates that the voting weights of residents across the state will be more nearly equal than in plans with higher deviations. This is the appropriate and constitutionally understood measure of “substantial equality.”

As noted in the minority report to the Board’s House Report, in the redistricting plan, the majority of the Board introduced a requirement—that all House districts elect one representative-- that is nowhere in our Constitution or statutes. To the contrary, both one- and two-member districts are endorsed (see VT Const. Ch. II, § 13), with no preference given for either type of district. Likewise, Article II, Section 18 of the Constitution provides no textual basis for favoring single-member Senate districts. Rather than (for example) striving to create as many single-member House districts as possible—while

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<sup>12</sup> As the minority noted in its House report counterpoint, the main argument of the single-member-district advocates is that a resident in a two-member House district is represented by two House members, while a resident in a single-member district is represented by one – and that this is fundamentally unequal and unfair. This misses the fundamental constitutional point, however, which is that in the former district there are twice as many residents, and thus the proportional representation is substantially equal. That is what our Constitution requires, and that is what the alternate House redistricting proposal offers. We believe the same conclusion and concern applies with equal force to requiring all single-member Senate districts.

<sup>13</sup> <https://legislature.vermont.gov/statutes/section/17/034A/01903>

following the directives in law for redistricting—the majority made single-member districts a foundational standard, to which the other statutory criteria must yield.

In their reapportionment of the Senate, the majority also chose to make an all-single-member district map their most important criterion. To achieve this result, their methodology for redistricting was to combine five contiguous single-member House districts in their entirety to form one single-member Senate district. For many of the same reasons the minority of the Board articulated in its House plan minority report, we believe that the majority erred in taking this approach.

The balance of this Senate minority report closely follows the structure, themes, and arguments of our House minority report. With respect to Vermont’s statutory standards and policies for redistricting, we compare several features of the all-single-member Senate district plan to those of the alternate district plan proposed by the other three Board members. These comparisons will illustrate how the majority plan does not comply with various elements of 17 V.S.A §1903.

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17 V.S.A §1903(b) makes clear that while the substantial equality of population standard (in apportionment parlance, the *minimum deviation standard*) is foundational, it must be considered in concert with other non-numerical factors and policies; therefore, it is rarely (if ever) possible to achieve near-zero deviation for all or even most districts. In particular, along with the foundational standard, Vermont law identifies three policies that guide the formation of legislative districts, and directs that districts must (the statutes uses “shall”) —“insofar as practicable”— be formed consistent with these policy goals. With respect to these policies we compared the Board’s majority and alternate Senate district plans to illustrate how the majority’s rigid, single-member district framework and companion methodology (in all cases using five House districts per Senate district) resulted in outcomes significantly less conforming than the alternate plan.

In forming Senate districts “on a county basis,” Vermont law requires that Senate districts as much as possible adhere to some credible semblance of the counties. The policy goals that the law identifies are as follows:

Policy 1: preservation of existing political subdivision lines

Policy 2: recognition and maintenance of patterns of geography, social interaction, trade, political ties, and common interests

Policy 3: use of compact and contiguous territory.

Policy 1 places a significant value on avoiding subdividing towns and crossing county lines when drawing Senate districts “on a county basis.” As a state policy, it emphasizes the robust sense of collective identity shared by residents of Vermont’s cities, towns, counties, and the more lightly organized grants and gores, and the understandable disruption caused by separating parts of such entities into two or more legislative districts.

On the other hand, the nature and variation of county population sizes makes some splitting of counties unavoidable-- for example, Chittenden County's population is far too large to be even a three-member<sup>14</sup> district and all but a few of the remaining counties have populations that are either too small or too large to be a district on their own—whether as a one-, two-, or three-member district. (For reference, the current Senate district plan includes five divided counties.)

Similarly, Policy 2 envisions districts that “recognize and maintain” a sense of community and requires looking more deeply at some of the non-numerical factors that help bind a district together into a coherent entity. This policy is an important companion to Policy 1: to the extent that districts must be formed that cross town or county boundaries, the configuration of towns chosen should be based on an understanding of regional ties and interests (or lack thereof) so that such a sense of community coherence can be maintained.

Finally, Policy 3 promotes the creation of districts that are geographically contiguous and compact.

Not surprisingly, it takes some care and persistence to create districts that, “insofar as practicable,” minimize deviation, avoid dividing towns and counties, take into account geographic barriers, acknowledge and support community, social, and/or economic ties, and are reasonably compact. The following examples provide instances where it is indeed possible to create districts that achieve these criteria, but which the majority rejected because of their self-imposed rule to create Senate districts that consist solely of five single-member House districts.

**Example 1: Washington-N, Washington-Orange-South**

The proposed Washington-N Senate district consists of Berlin, Middlesex, Montpelier, and portions of East Montpelier, Northfield, and Waterbury.

The proposed Washington-Orange-South district consists of Braintree, Brookfield, Duxbury, Fayston, Moretown, Roxbury, Warren, Waitsfield, Williamstown, and portions of Northfield, Randolph, and Washington.

Between the two districts, five towns are divided, and each division arises from a split in the town's underlying House district. Moreover, as part of the House plan development process, each town BCA opposed being divided. **All town splits could have been**

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<sup>14</sup> Senate Bill 11, enacted in 2019, limited the number of Senators per district to a maximum of three members. In so doing, the Legislature did not indicate a preference for the number of Senators. Indeed, the legislative text indicates an explicit recognition that the standard is equality of representation: “... the Board shall prepare a proposal for reapportionment of the Senate, apportioning the 30 senatorial seats among the counties or combinations of counties with a maximum of three members in each proposed district, and in such manner as to achieve substantial equality in the choice of members as guaranteed by the Equal Protection Clause of the Fourteenth Amendment to the U.S. Constitution.”

**avoided** if the majority had been willing to combine these two districts into a two-member senate district, as well as reunite the smaller portions of East Montpelier, Randolph, Washington, and Waterbury with the larger portions.

Additional benefits of a two-member district:

- County division is removed from Chittenden-Washington
- Improved compactness: The Reock scores for Washington-N and Washington-Orange-S are 0.44 and 0.47, respectively; as a combined district the score is 0.50. Similarly, the Polsby-Popper ratings for each of the individual districts is 0.31, while as a combined district it is 0.49.

**Example 2: Addison-N, Addison-Windsor-Rutland**

The proposed Addison-N district consists of Addison, Bristol, Ferrisburgh, Lincoln, Monkton, New Haven, Panton, Starksboro, Vergennes, Waltham, Weybridge, and a portion of Middlebury.

The proposed Addison-Windsor-Rutland district consists of Bridport, Cornwall, Goshen, Granville, Hancock, Leicester, Orwell, Ripton, Salisbury, Shoreham, Whiting, Brandon, Sudbury, Rochester, and portions of Hubbardton and Middlebury.

Between the two districts, two towns are divided, and each division arises from a split in the town's underlying House district. Moreover, as in example 1, each town BCA opposed being divided. **Both town splits could have been avoided** if the majority had been willing to combine these two districts into a two-member senate district, and to reunite Hubbardton as part of the Rutland-1 district.

Additional benefits of a two-member district:

- County coherence: the combined district includes all of Addison County.
- Improved compactness: The Reock scores for Addison-N and Addison-Rutland-Windsor are 0.56 and 0.53, respectively; as a combined district the score is 0.65. Similarly, the Polsby-Popper ratings for the individual districts are 0.51 and 0.36, while as a combined district it is 0.54.

**Example 3: Rutland-1, Rutland-2**

The proposed Rutland-1 district consists of Benson, Castleton, Chittenden, Fair, Haven, Ira, Mendon, Pittsford, Poultney, West Haven, and portions of Hubbardton, Rutland Town, and West Rutland.

The proposed Rutland-2 district consists of Clarendon, Proctor, Rutland City, and portions of Rutland Town and West Rutland.

Between the two districts, three towns are divided, and each division arises from a split in the town's underlying House district. Moreover, both Hubbardton and Rutland Town opposed being divided<sup>15</sup>. **All town splits could have been avoided** simply by combining

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<sup>15</sup> The division of West Rutland was not part of the Majority's initial House proposal.

these two districts into a two-member senate district, and reuniting Hubbardton. This result is much more consistent with our reapportionment laws.

#### Additional benefits of a two-member district

- County coherence: the majority’s Senate plan separates Rutland County into five different districts; combining two of them would reduce this number to four. It is also possible to move Killington and Pittsfield from their proposed Orange-Washington-Rutland district into this combined two-member district, further reducing the division of the county (as well as producing a more compact and cohesive Orange-Washington district.)
- Improved compactness: The Reock scores for Rutland-1 and Rutland-2 are 0.41 and 0.36, respectively; as a combined district the score is 0.48. Similarly, the Polsby-Popper ratings for the individual districts are 0.17 (the plan minimum) and 0.35, while as a combined district it is 0.35.

#### **Example 4: Chittenden-Grand Isle-Franklin**

The proposed Chittenden-Grand Isle-Franklin district consists of Alburgh, Grand Isle, Isle La Motte, North Hero, South Hero, and portions of Colchester, Georgia, and Milton.

This district includes a very small portion of Georgia—265 residents—which is the only part of Franklin County included. Reuniting this portion of the town with the rest of Georgia is doable and sensible—especially given that Georgia’s BCA opposed the majority’s initial House district plan to divide the town. In addition, many individual residents of Georgia contacted the Board (via an online feedback submission form) to express their disagreement and dismay about the split of their town.

#### Additional benefit of removing the division of Georgia

County coherence: the majority’s Senate plan separates Franklin County into four different districts; reuniting Georgia (as part of their proposed Franklin-Chittenden-Lamoille district) would reduce this number to three.

#### **Example 5: Bennington-Windham**

The proposed Bennington-Windham district consists of Dover, Glastenbury, Halifax, Jamaica, Landgrove, Londonderry, Marlboro, Newfane, Peru, Shaftsbury, Somerset, Stratton, Townshend, Wardsboro, Whitingham, Wilmington, Windham, and Winhall.

Geographically, this is one of the largest districts in the majority’s Senate plan, measuring ~72 miles from northwest Peru to southeast Halifax, and ~60 miles from southwest Shaftsbury to northeast Townshend. Only their proposed Franklin-Orleans district has a larger width: ~82 miles from northwest Highgate to eastern Charleston (this district also has the Reock plan minimum score, 0.19, owing to its extreme narrow shape overall.) Only their proposed Northeast Kingdom district exceeds Bennington-Windham in these measurements: ~72 miles from west Wheelock to northeast Canaan, and ~70 miles from northwest Derby to south Guildhall.

Furthermore, this district straddles the Green Mountains and there are no roads connecting the towns east and west. Indeed, feedback from town BCAs noted this lack of connection, both physical and with respect to community ties.

While creating geographically large, single-member districts can be hard to avoid in the northeast part of the state, other options were possible in this region-- had the majority been willing to consider them.

For example, in southern and south-central Vermont, the LAB's alternate plan proposes a two-member Bennington district, a two-member Windham district, a three-member Rutland district, and a three-member Windsor district; all except the Windham district include the entire county. Of these four districts, the Windsor district is the most geographically dispersed, measuring ~80 miles from Weston to Thetford and also from Rochester to Springfield. But this is balanced by other factors, such as county-based coherence, common interests, long-standing association as a Senate district, and having three senators.

Along with looking at individual districts, it is also useful to compare overall differences between the LAB's majority and alternate plans.

<b>Town and County Division Summary</b>		
	<b>Majority Plan</b> 1-member districts: 30	<b>Alternate Plan</b> 1-member districts: 7 2-member districts: 7 3-member districts: 3
Number of cities/towns divided <i>Current plan has no divided towns</i>	15	2
Number of districts that include a split part of a town (% of districts) <i>Current plan has no such districts</i>	18 (60%)	3 (17.6%)
Number of counties divided <i>Current plan has 5</i>	12	7
Total number of county portions in districts <i>Current plan has 21</i>	49	26
Number of districts that cross a county boundary <i>Current plan has 6 cross-county districts (50%)</i>	14 (46.7%)	8 (47.1%)

The first row of the table shows that the majority's proposal divides an unusually large number of towns for a Senate district plan. As is indicated in the second row of the table, this results in a large percentage of districts that include a divided part of a town.

The table next displays analogous information regarding counties and again we see that the majority plan has many more such divisions than in the current plan or the Alternate plan. This difference is particularly stark when we look at the number of split portions of

counties (row four in the table), which helps capture the “excess” division that occurs when a county is divided into more pieces than necessary. For example, Rutland County has an appropriate population size (60,572 people) to be represented by three Senators in one district (as it is now and as the Alternate plan proposes); however, the majority plan splits the County across five separate districts. Similarly, Franklin is divided between four districts, but its population size (49,946 people) can be represented with just two districts, if one of them has two Senators.

From the table it is evident that the majority plan divides many more communities than the Board’s alternate plan. Further, as the examples above illustrate, many of these divisions are entirely unnecessary and go against the preferences of the affected communities—preferences that clearly address statutory policy goals and that are satisfied using a two- or three-member district. Consequently, the majority plan does not comply with the “as far as practicable” clause of V.S.A. §1903(b).

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We conclude this minority report by excerpting a relevant portion of the Board minority’s House plan minority report, as the same observations and conclusions, we think, apply in the context of the Senate plan.

*To justify excluding two-member districts from consideration, the first factor they identify is given below:*

A general recognition that Vermont’s current hybrid model of single and two representative districts creates unavoidable inequities regarding representation between residents of differently configured districts, which raise serious questions regarding equal representation for all citizens.

*This “general recognition”—essentially, opinion— is not supported by long-standing legal interpretation of “equal representation,” and is (perhaps) based on a misunderstanding of the core underlying concepts. As we noted in the introduction to this report, equal representation consists of the “equal weighting of the votes of all voters in the choice of legislators.” Since an ideal two-member district has twice the number of residents as an ideal one-member district, equal weighting is preserved between the two types of districts.*

*Put another way, the weight of a person’s vote is a measure of how much influence their vote has on the outcome of an election: indeed, the statutory directive to minimize percentage deviation embodies the recognition that residents in a district of either type with smaller population size have more influence over the outcome of an election than residents in a district of the same type that has larger population.*

*Compared to voters in a single-member district, to elect each of the two representatives for their district, voters in the two-member district must “compete” against twice as many other voters. Therefore, to elect each representative their votes have half the weight*



– or influence-- of a corresponding voter in a one-member district. Consequently, their two votes together then have the same weight as the voter in the single-member district.

*The Vermont Supreme Court has examined the meaning of equality of representation, and substantial equality of representation in important redistricting decisions. These include In re Senate Bill 177, 130 Vt. 365 (1972); In re Senate Bills 177 & 83, 132 Vt. 182 (1974); and In re Reapportionment of Town of Hartland, et al., 160 Vt. 9 (1993). These decisions cite with approval important equality of representation redistricting decisions from the U.S. Supreme Court, including Mahan v. Howell, 410 U.S. 315 (1972), and Reynolds v. Sims, 377 U.S. 533 (1964) From these decisions flows the conclusion, we believe, that there is no constitutional requirement for single-member districts absent a demonstration of invidious discrimination. See Whitcomb v. Chavis, 403 U.S. 124, 142-143 (1971). The Town of Hartland decision likewise favorably points to this same line of cases.*

*We note in this context Vermont Attorney General Opinion No. 27 (February 8, 1973), which addressed the question, “Are multi-member legislative districts constitutional?” The opinion is not binding in the way that a Vermont Supreme Court decision is but is an authoritative statement of a point of law relevant to this discussion. The Opinion concluded that a reapportionment plan “utilizing multi-member districts which achieve representational equality approximately equal to a single-member district plan would conform to the Fourteenth Amendment to the United States Constitution.”*

*The Board’s minority members believe there is very solid constitutional grounds for continuing to use both single and multi-member legislative districts in Vermont’s periodic reapportionment.*

*The second factor identified by the majority regarding their adoption of a single-member district plan is “overwhelming public support.” To support this conclusion, they point to the results of a public engagement survey that was developed by LAB members and posted to the Apportionment Board’s website. While survey respondents did strongly favor single-member districts, the results of the survey cannot be used to characterize the level of support among Vermonters for an all-single-member district scheme, for two essential reasons:*

*(1) The LAB’s survey was designed to engage Vermonters in a once-in-a-decade process, not as a way to gauge public opinion using standard random-sampling methods. Consequently, respondents as a group do not constitute a representative sample from which conclusions can be drawn about the wider state population.*

*(2) In addition, Vermont organizations that favor single-member districts-- including the VT Republican Party and VPIRG—encouraged their membership to complete the survey via email appeals, web newsletters, and direct links to the survey. This activity provides additional confirmation of the non-representative nature of survey respondents.*

*In support of their all-single-member district scheme, the third factor noted by the majority centers on testimony provided to the Board by Xusana Davis, the Executive Director of Racial Equity and Chair of the Vermont Racial Equity Task Force.*

*In her testimony, Executive Director Davis brought to our attention recommendations by Vermont’s Racial Equity Task Force<sup>16</sup>, and urged the Board to bring an equity lens to all facets of our redistricting work. Within this realm, Davis indicated that single-member districts can be the better choice in some instances and for some communities; however, neither she nor the task force recommended having only single-member districts.*

*Specifically, the Task Force recommends that, “the Reapportionment Commission modernize its criteria to include racial and social equity as explicit considerations as it engages in its critical work.” The members of the Board minority support this recommendation and we encourage the legislature to consider drafting appropriate legislation.*

*Finally, the majority recasts the predominantly negative BCA feedback in improper and misleading ways. We hope to clarify and correct the record here.*

*First, here is an overview of BCA feedback that categorizes their responses more clearly:*

- **148 towns submitted feedback.** Of these:
- **46 towns (31.1%) supported their district** in the tentative proposal
- **97 towns (65.5%) opposed their district** in the tentative proposal
- **5 towns (3.4%) submitted mixed feedback** regarding their district in the tentative proposal (e.g., tie vote in BCA)

*Thus, evidence from BCAs shows that **towns that responded opposed the tentative plan for their district by more than a two-to-one margin over those that supported it.***

*In their summary of these responses, the majority characterizes the BCAs that submitted no feedback as having “no objection” to their plan. However, the most we can say about towns that did not submit feedback is that we do not know whether they support or oppose the tentative proposal. In particular, characterizing these towns as having “no objection” is unwarranted and can mislead-- especially so since the majority groups the non-responding towns with the (much smaller) number of towns that submitted positive feedback about their proposed districts.*

*In addition, they state that, “of the [97] remaining towns that requested changes to the draft map, only 34 proposed returning to a two-member house district scenario, and of those 34, 12 either proposed being joined with town(s) that specifically did not consent to such a pairing, or such a request would not be possible due to population shifts within current district and surrounding region regardless of the single-member district framework adopted by the Board.”*

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<sup>16</sup> **Report of the Vermont Racial Equity Task Force**, January 15, 2021, p.30.  
[https://racialequity.vermont.gov/sites/reap/files/doc\\_library/RETF-Report-2-Final.pdf](https://racialequity.vermont.gov/sites/reap/files/doc_library/RETF-Report-2-Final.pdf)

*However, these values are incorrect: of the 97 towns that opposed the tentative proposal's plan for their district:*

- 47 indicated a desire to be in a two-member district. Further,*
- 43 of these towns would be in a two-member under the alternate district plan.*

*The majority report thus appears to significantly understate the degree of negative feedback for the single-member district proposal, and undercounts the number of two-member districts that were possible to create. The alternate proposal, we believe, offers a more reasoned, transparent, data-driven, and fairer approach to redistricting the House – and certainly one that adheres to the law.*

Consistent with this foregoing minority report, the undersigned members of the Board have presented an alternate Senate redistricting plan, which is available at the Vermont Secretary of State's website via this link: <https://sos.vermont.gov/apportionment-board/resources/>

Respectfully submitted,

Jeanne Albert  
Mary Houghton  
Thomas A. Little

### **Appendix 3: Impacts of Census data delays and COVID-19**

In early 2021, the U.S. Census Bureau notified the Apportionment Board that the release of the final and official Vermont redistricting dataset of the 2020 United States decennial census would be delayed from the federal statutory deadline of March 31, 2021 to a release date on or before September 30, 2021. This delay meant that the Board would be unable to meet its statutory deadlines. In February 2021, the Board asked the General Assembly to amend Chapter 34A of Title 17 to establish revised deadlines for the Board's 2021 work and reports. The General Assembly did so in Act 11 (H. 338), signed into law on April 21, 2021 by Governor Scott.

<https://legislature.vermont.gov/Documents/2022/Docs/ACTS/ACT011/ACT011%20As%20Enacted.pdf>

Act 11 required the Board to submit its proposals for the 2022 reapportionment of the House of Representatives and the Senate to the General Assembly not later than 90 days following the U.S. Census Bureau's release of Vermont's 2020 redistricting dataset. All other deadlines and procedures for the 2022 reapportionment of the House of Representatives and the Senate remained unchanged.

Had the census results been delivered on time, the Board's deadline to submit its final House and Senate plans would have been in August. When the Board learned of this significant delay, it adjusted its work plan accordingly but continued to meet to review estimated census data and discuss its overall approach to its work. (The Board had begun meeting in September 2020 in anticipation of receiving the census data in March 2021.) The delayed census dataset was delivered in mid-August, triggering several weeks of technical work uploading the data into the mapping software the Board used, testing the data in the software, and training Board members and Secretary of State staff on the software. The Board owes much to the Information Technology team at the General Assembly (the Office of Legislative Information Technology) for leading these efforts, and to the Secretary of State's staff for helping Board members to learn how to work with the mapping software. When these efforts were completed, the Board had some 10-12 weeks in which to use the mapping software to prepare draft maps of proposed new Senate and House districts that would comply with the reapportionment laws.

All of the Board's work (and all of the support it received from the Secretary of State's office, the Office of Legislative Information Technology, the Vermont Center for Geographic Information, and the inputs from members of the public and Boards of Civil Authority) was done during the COVID-19 pandemic and its profound changes to work and meeting practices, habits and protocols. These conditions challenged the progress of the Board's work.

#### **Appendix 4: Role and Function of the Legislative Apportionment Board**

As noted above, every 10 years, following the release of the U.S. Census data, state law requires reapportionment of Vermont's House and Senate districts "in such manner as to achieve substantially equal weighting of the votes of all voters in the choice of legislators." (17 V.S.A. §1901.) Chapter II of the Vermont Constitution establishes the same requirement, as does the Equal Protection provisions of the U.S. Constitution. This Substantial equality requirement is the overarching mandate of our law.

The decennial process starts with the Legislative Apportionment Board. The Board has a statutory duty to draw up a tentative proposal for changes to House district lines; to share that tentative proposal with town and city Boards of Civil Authority of the towns and cities that would be affected by the proposed tentative plan; and then to draw up a final proposal for consideration by the General Assembly.

Under the law, the Board's overall purpose is to provide advice and assistance to the General Assembly.

The Board was constituted in 2020 and has seven members. Each of the three major political parties chose a member; Governor Scott appointed one member from each party and the Chief Justice of the Vermont Supreme Court appointed the Board's Chair.<sup>17</sup> The Board's meetings were open to the public and its records are public records.

The Board looked at each current House district's percentage deviation from the ideal district population, which can be either positive or negative. For example, a single-member district with population 4,487 is 200 residents over the apportionment standard (4,287 people for a single-member district), which is a deviation of +4.7%. A single-member district with population 3,987 is 300 residents below the standard, and a deviation of -7.0%. Similarly, a two-member district with population 9,074 is 500 residents over the apportionment standard (8,574 people for a two-member district), which is a deviation of +5.8%. A two-member district with population 8,524 is 50 residents below the standard, a deviation of -0.6%.

To the extent that a single- or two-member district has a significant negative deviation, it is over-represented for that type of district. And, to the extent that a district has a significant positive deviation, it is underrepresented. The difference between the district with the highest positive deviation and the lowest negative deviation is the "overall deviation" of the Vermont House apportionment. An apportionment plan with lower overall deviation indicates that the voting weights of residents in the smallest and largest districts are more nearly equal than in plans with higher overall deviation. Therefore, the

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<sup>17</sup> Jeanne Albert was chosen by the Vermont Democratic Party, Robert Roper was chosen by the Vermont Republican Party, and Jeremy Hansen was chosen by the Vermont Progressive Party. Governor Scott appointed Democrat Edward Adrian, Progressive Mary Houghton and Republican Thomas Koch. Chief Justice Paul Reiber appointed Thomas A. Little as Chair.

overall deviation of a district plan provides a measurement of the degree to which the plan meets the constitutional requirement of substantial equality.

With 28 of the 104 current House districts having 9% or greater positive or negative deviation percentages, some district adjustments were clearly very likely required in order to align the House districts with the Constitution's equality of population mandate.

The 2001 and 2011 Apportionment Board Reports present a well-written explication of the constitutional and statutory principles that govern and guide this Board's work. We include an excerpt from the Board's 2001 report in Appendix 1 of the LAB Majority Report. The 2001 report includes an analysis of the Vermont Supreme Court's important 1993 decision, In re Reapportionment of Town of Hartland, where the Court decided consolidated reapportionment disputes involving the constitutional and statutory issues of (i) substantial voting equality, (ii) Geographical compactness and contiguity, and (iii) patterns of geography, social interaction, trade, political ties and common interests. (160 Vt. 9 (1993).)<sup>18</sup>

Since the Town of Hartland decision, only one challenge has been made to a reapportionment plan enacted by the General Assembly – to the 2002 reapportionment. In In re Reapportionment of Towns of Woodbury and Worcester, 177 Vt. 556 (2004), the residents of the Washington County towns of Woodbury and Worcester unsuccessfully challenged their new district, arguing that placing their towns in the Lamoille-Washington-1 two-member district violated the requirements of compactness and contiguity and did not respect county lines. The case did not involve a challenge based on population deviation. The Supreme Court appointed a factfinder who took testimony and issued finding on the Town's claims. The factfinder “found that all four towns have one or more boundaries in common with another town in the district, and that the T-shaped district 'in fact is contiguous and relatively compact.'" Id. at ¶ 12. The Court also noted that the challenged statewide redistricting plan "places ninety-eight towns in districts that cross county lines, which is not unusual. In fact, in this respect it is identical to the 1992 reapportionment plan we upheld in Hartland, 160 Vt. at 31, 624 A.2d at 336." Id. at ¶ 16. The Court concluded that the two towns had failed to clear the strong presumption in favor of a plan adopted by the General Assembly.

No challenge was filed against the 2012 reapportionment.

A good redistricting plan proposal, in addition to achieving Substantial equality of population across districts, must also demonstrate how the other standards beyond equality are met. In the Mahon case, the United States Supreme Court cautioned that an overall deviation of 16.4% “approach[es] tolerable limits.” It explained that the ultimate inquiry is whether the legislature's plan “may reasonably be said to advance [a] rational state policy," and if so, “whether the population disparities among the districts that have

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<sup>18</sup> Challenges to a redistricting plan enacted by the General Assembly are filed directly with the Vermont Supreme Court. (17 V.S.A. §1909.)

resulted from the pursuit of this plan exceed constitutional limits." *Mahan v. Howell* 410 U.S. 315, 318 (1972).

As noted above, the law requires House districts with "minimum" deviation percentages. The law does not define "minimum," but Vermont and U.S. Supreme Court decisions tell us that an overall deviation under 10% is presumptively constitutional and one somewhat greater than 16% is probably, or may be, constitutional if the legislative record documents that other more complying options were tried without success and the plan advances rational state policies. Thus, an individual, single-member district with a deviation in the 9% range raises serious concerns and must be analyzed thoroughly and justified with credible, genuine reasons supported under the law.

In addition to the overall deviation, the Board is guided by three statutory directives relating to: (1) Preservation of existing political subdivision lines (i.e., town, city, and county boundaries); this directive is also found in the Vermont Constitution; (2) recognition and maintenance of patterns of geography, social interaction, trade, political ties and common interests; and (3) use of compact and contiguous territory. (17 V.S.A. §1903; VT Const. Ch. II, §13.) When ruling on a challenge to a redistricting plan, the courts give significant weight to these non-numerical factors. Putting a steep mountain in the middle of a multi-town district may yield district lines that are not intuitive from looking at a flat map of the state. Avoiding that type of unfortunate result, which may make a proposed district's percentage deviation greater than constitutionally desirable, can make a difference if a redistricting plan is challenged in court.

As mentioned, the Board's work to draw a new plan for House districts proceeded in two general phases. The first phase was developing a draft, tentative plan for review by Boards of Civil Authority. Under 17 V.S.A. §1905, any town that is divided into two or more districts or that is put in a district with another town is given an opportunity to comment on the Apportionment Board's plan before it is finalized. The Apportionment Board went beyond this requirement and sent the tentative House plan to all towns and cities for their review and comment.

In October and November, 148 Boards of Civil Authority (BCAs) commented on the tentative plan and in many cases proposed different district boundaries. In some cases, this involved towns trying to collaborate on a new mapping solution to a shared district line. The Apportionment Board then reviewed the various BCA recommendations. This is the point in its work where the Board's split over the "all single member House districts" question again made a broad consensus impossible. BCAs in towns and cities currently in two-member House districts generally (but with some exceptions) opposed eliminating their two-member districts. The Minutes of the Board meetings at which this question was discussed and debated reveal the depth and passion of this disagreement.

The Board then prepared two final House district maps: the All-single-member plan and the Alternate plan. By a vote of 4-3 taken on November 23, 2021, the Board adopted the all-single-member map as its final House proposal and delivered it to the Clerk of the House of Representatives on November 30, 2021.