Hearing Date:	**January 18, 2022**
Bill No:	**SJ3/HJ1**
Committees:	**Senate Reapportionment and Redistricting Committee**
	House Rules and Executive Nominations Committee
Testimony from:	**Nathaniel Persily, Ph.D.**
	Consultant to the Maryland Citizens Redistricting Commission
	James B. McClatchy Professor of Law
	Stanford Law School[1]

Maryland Citizens Redistricting Commission Senate Map
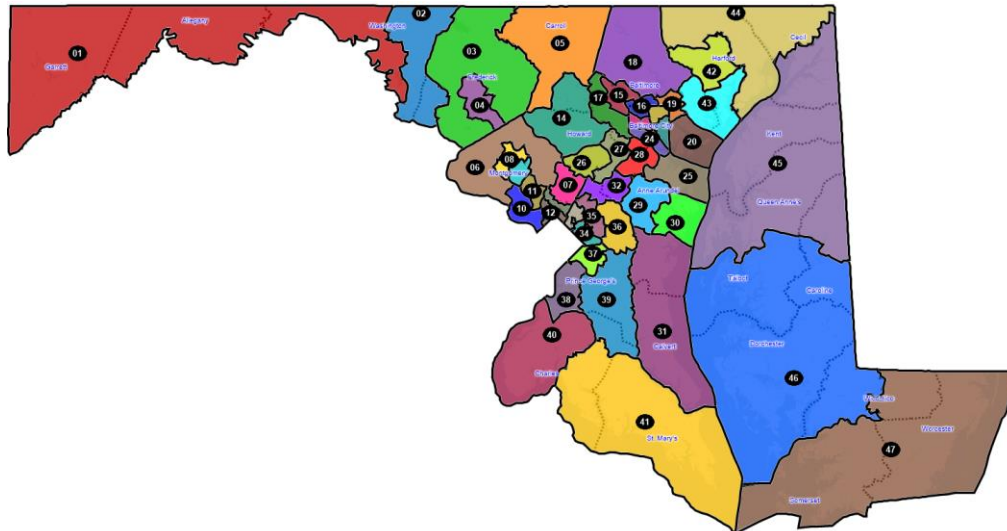
Maryland Citizens Redistricting Commission House of Delegates Map

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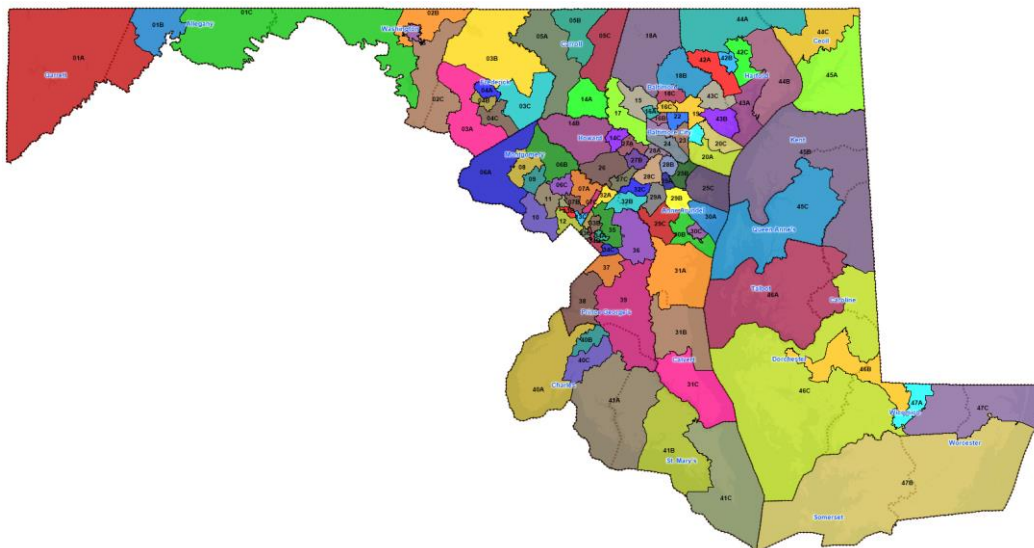
[1] Affiliation for identification purposes only; appearing in personal capacity and not lobbying for or endorsing any legislation.

Chairs King and Healey, Vice-Chairs Hayes and Holmes, and Members of the Committee:

I am Nathaniel Persily, the James B. McClatchy Professor at Stanford Law School and the consultant hired to assist the Maryland Citizens Redistricting Commission (hereinafter "the Commission"). Over the past twenty years, I have assisted numerous courts and commissions throughout the nation with their redistricting processes. Most relevant for present purposes, I was appointed by the Maryland Court of Appeals, along with Karl Aro (who currently assists the Legislative Redistricting Advisory Commission), to draw a state legislative plan for Maryland following the Court's decision in *In re Legislative Redistricting of State*, 805 A.2d 292 (Md. 2002).

My testimony today will explain how the Senate and House of Delegates redistricting plans proposed by the Commission comply with the applicable law and the Governor's Executive Order 01.01.2021.02. I will also explain the principles that shaped the districts beyond those required by law. In describing these plans, I shall also compare them to the draft plan released by the Legislative Redistricting Advisory Commission ("LRAC Plan").

I.   Satisfaction of the Legal Constraints on the Commission's Congressional Redistricting Plan

A. Federal Law

1. One Person, One Vote

The Equal Protection Clause of the 14th Amendment to the U.S. Constitution requires that state legislative districts comply with "one person, one vote." This rule has meant that states must "make an honest and good faith effort to construct [legislative] districts . . . as nearly of equal population as is practicable." *Reynolds v. Sims*, 377 U.S. 533, 577 (1964).[2] As a general rule, though, the strict population equality standard applied to congressional districts is relaxed for state legislative districts. As the Supreme Court has made clear, "'minor deviations from mathematical equality' do not, by themselves, 'make out a prima facie case of invidious discrimination under the Fourteenth Amendment so as to require justification by the state.'"[3] Minor deviations have been defined as those under ten percent, which usually means no district departs from the ideal population of a district by more than plus-or-minus five percent. *Brown v. Thomson*, 462 U. S. 835, 842 (1983).

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[2] See also Section 1(d) of the Governor's Executive Order ("Legislative districts shall be . . . [a]s nearly equal in population as is feasible given due regard for natural boundaries and the boundaries of political subdivisions.").
[3] *Harris v. Ariz. Indep. Redistricting Comm'n*, 578 U.S. ___, 137 S.Ct. 1301 (2016) (2016).

The Commission's plan also operated under a stricter population equality restriction than required by federal law. Section 1(d) of the Governor's Executive Order establishing the Commission specifies that "[l]egislative districts shall be . . . [a]s nearly equal in population as is feasible given due regard for natural boundaries and the boundaries of political subdivisions." Following these guidelines, the Commission set as its goal for the State Senate Districts that no district would vary from the ideal adjusted population of a district by more than plus-or-minus two percent and no House of Delegates district by more than plus-or-minus three percent.

According to the 2020 Census as modified by the prisoner adjustment done for redistricting purposes, the adjusted population for Maryland is 6,175,403.[4] Therefore, perfect equality among 47 state Senate districts would require 131,391.553 people per district and among 141 House of Delegates districts, 43,797.1844 people per district. In the Commission's Senate Plan, the largest district has 133,871 people (1.89% over ideal value) and the smallest district has 128,867 people (1.92% under ideal value). In the Commission's House of Delegates plan, the largest district has 45,092 people (2.96% over ideal value) and the smallest district has 42,545 people (2.86% under ideal value).

In contrast, the LRAC plans appear to take greater advantage of permissible deviations allowed for state legislative plans, abiding by a plus-or-minus 4 percent constraint. For the LRAC Senate plan, the most overpopulated district is District 47 with 136,516 people (3.99% over ideal value) and the most underpopulated district is District 3 with 126,149 (3.99% under ideal value). For the LRAC House of Delegate plan, the most overpopulated district is three-member District 28 with 136,503 (3.89% over ideal value) and the most underpopulated district is three-member District 46 with 126,149 people (3.99% under ideal value).

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[4] The unadjusted figure was 6,177,224 people, according to the Census P.L. 94-171 datafile.

Table 1. Absolute Deviation from Equal Population

	MCRC Senate Plan	LRAC Senate Plan
Mean	1,615 (1.2%)	3,322 (2.5%)
Standard Deviation	721 (0.5%)	1,690 (1.3%)
Minimum	124 (0.09%)	110 (0.08%)
Maximum	2,525 (1.92%)	5,243 (3.99%)

	MCRC House Plan	LRAC House Plan
All districts *(calculations weighted by # of Delegates representing each district)*		
Mean %	1.4%	2.7%
Standard Deviation %	0.7%	1.2%
Minimum %	0.02%	0.08%
Maximum %	2.96%	3.99%
Single-member districts	87 districts	30 districts
Mean (%)	669 (1.5%)	1,273 (2.9%)
Standard Deviation (%)	362 (0.8%)	479 (1.1%)
Minimum (%)	9 (0.02%)	94 (0.21%)
Maximum (%)	1,295 (2.96%)	1,729 (3.95%)
Two-member districts	0 districts	12 districts
Mean (%)		2,425 (2.8%)
Standard Deviation (%)	N/A	1,149 (1.3%)
Minimum (%)		295 (0.34%)
Maximum (%)		3,475 (3.97%)
Three-member districts	18 districts	29 districts
Mean (%)	1,685 (1.3%)	3,409 (2.6%)
Standard Deviation (%)	689 (0.5%)	1,690 (1.3%)
Minimum (%)	295 (0.22%)	109 (0.08%)
Maximum (%)	2,513 (1.91%)	5,242 (3.99%)

2. Prohibitions on Intentional Race-based Vote Dilution or Use of Race as the Predominant Factor

The Equal Protection Clause of the Fourteenth Amendment of the U.S. Constitution limits the use of race as a criterion in drawing district lines. Mapmakers may not intentionally dilute the voting power of a racial group, *Mobile v. Bolden*, 446 U.S. 55 (1980), nor may they use race as the predominant factor in the construction of a district, unless necessary to comply with the dictates of the Voting Rights Act. *Shaw v. Reno*, 509 U.S. 630 (1993); *Virginia House of Delegates v. Bethune Hill*, 139 S. Ct. 1945 (2019).

The Commission's plans comply with Equal Protection. As will be discussed below in reference to the Voting Rights Act, the plan does not dilute the voting power of racial minorities. The plans also comply with *Shaw v. Reno*. The only district arguably implicating *Shaw* is Commission District 46B in Dorchester and Wicomico Counties. However, the predecessor to this district was ordered drawn by the District Court in *Marylanders for Fair Representation, Inc. v. Schaefer*, 849 F. Supp. 1022, 1056 (D. Md. 1994), pursuant to a successful lawsuit under Section 2 of the Voting Rights Act. The Commission's proposed district is more compact than both the LRAC proposal and the existing district, while still achieving a Black Voting Age Population share of 54.1%.

3. Section 2 of the Voting Rights Act and Representation of Racial Minorities

The Commission's plans comply with Section 2 of the Voting Rights Act, 52 U.S.C. § 10301. Both the Senate and House of Delegates plans avoid diluting the vote of racial minorities either through packing or cracking. Of course, given patterns of racial segregation in Maryland, several districts will have high concentrations of African Americans, particularly in Prince George's County. Moreover, because of the use of multimember districts, in evaluating minority representation it is appropriate to consider the number of minority opportunity seats, as opposed to opportunity districts, to reflect the fact that a three-member opportunity district is functionally the same as three single-member opportunity districts.

The Commission's plan accurately represents minority communities in Maryland. Blacks constitute 31 percent of the voting age population in Maryland. The Commission's Senate plan has 14 districts out of 47 in which Blacks are a majority of the voting age population in a district (BVAP), amounting to 30.0% of the Senate seats. The Commission's House plan has 43 seats out of 141 (30.5% of seats) in which Blacks constitute a majority of the voting age population of a district. Although proportionality is not required by the Voting Rights Act, the fact that a plan achieves near proportionality is a factor weighed in favor of a plan. *Johnson v. DeGrandy*, 512 U.S. 997 (1994).

The LRAC plan has many fewer majority-BVAP districts. The LRAC Senate Plan has 9 majority BVAP districts (19.1% of Senate districts). The LRAC House of Delegates plan demonstrates the same pattern with only 36 out of 141 seats (25.5%) coming from majority BVAP districts.

The story for Latinos is similar, although they are dispersed throughout Maryland such that they rarely can form a majority-minority HVAP (Hispanic Voting Age Population) district. Although they constitute 10.2% of the state's voting age population, they are not compact enough to form a majority in a Senate seat (although the HVAP in two of the Commission's Senate districts – 13 and 33 – exceed 40%). The Commission's plan avoids gratuitously breaking up compact Latino communities, even if they constitute a district minority. Consequently, the Commission's House map contains four majority HVAP districts, with one that (like the LRAC House plan) has an HVAP of nearly 65%. The difference between the plans in this regard, though, is that the Commission plan has three other House districts between 50% and 55%, whereas the next highest district for the LRAC plan is 35.9% HVAP.[5]

B. Additional Criteria in the Governor's Executive Order

Beyond the requirements of federal law, Governor Hogan's order adds other criteria that constrain available options for the congressional redistricting process. In particular, Section 1(a) of the order requires the Commission to "[r]espect natural boundaries and the geographic integrity and continuity of any municipal corporation, county, or other political subdivision to the extent practicable" and "[b]e geographically compact and include nearby areas of population to the extent practicable." The Commission plan complies with these requirements.

1. Respecting Natural Boundaries and Political Subdivisions

The Commission's plan respects natural boundaries and the borders of political subdivision lines. Most notably, no district crosses the Chesapeake Bay. The plan attempts to keep counties and municipalities together to the extent consistent with the goal of keeping low population deviations throughout the plan. The plan narrative, below, goes into greater detail how each district respects natural boundaries and political subdivision lines.

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[5] Asian-Americans, as well, are too small a share of the state's voting age population (7.8%) to constitute a majority in a single member district. However, the Commission plan, like the LRAC plan, attempts to keep the Asian Community in Ellicott City largely in one House district that is 31% Asian Voting Age Population.

Given that the Commission plan obeys a stricter population equality rule than either the LRAC plan or existing districts, one would expect it to break up a greater number of political subdivisions. However, despite the lower deviations, the Commission's plans split fewer counties than the LRAC Senate plan and roughly the same number as the LRAC Delegate Plan. The Commission's Senate plan splits 14 counties, whereas the LRAC Senate plan splits 15 counties. The Commission's House plan splits 20 counties, whereas the LRAC plan splits 19.

Of course, unlike the Congressional plan, most counties must be split up in order to comply with one person, one vote. Their population exceeds that of an ideal Senate or House district. However, to the extent possible, the Commission's plan minimizes traversal of county and municipal boundaries to the extent possible. This can be seen, for example, in the placing of eight complete Senate districts inside the borders of Montgomery County or four complete delegate districts within Carroll County.

2. Compactness

The districts in the proposed plan are about as geographically compact as possible, while abiding by the other legal considerations. The strange shape of Maryland and some of its counties will necessarily affect the contours of any district that respects political subdivision lines. For example, placing the counties in Western Maryland together will inevitably create a long east-west district, and connecting the counties on the Eastern Shore together will create a long north-south district. However, by both the mathematical measures of compactness presented in the chart below, as well as a more aesthetically grounded "eyeball test," the districts are much more compact than the districts in the existing Congressional plan for Maryland or in the LRAC proposal.

As can be seen below on every mathematical measure of compactness, the Commission's plans for the House and Senate are superior to the LRAC plan. The differences are significant and confirm what is obvious from the images of the districts. Maps of the Delegate plans in Prince George's, Baltimore, and Howard Counties are provided below. They depict coherent, compact districts in the Commission plan, as compared to what are often wandering, contorted, and stringy districts in the LRAC plan.

MCRC Proposed Delegate Plan for Prince George's County
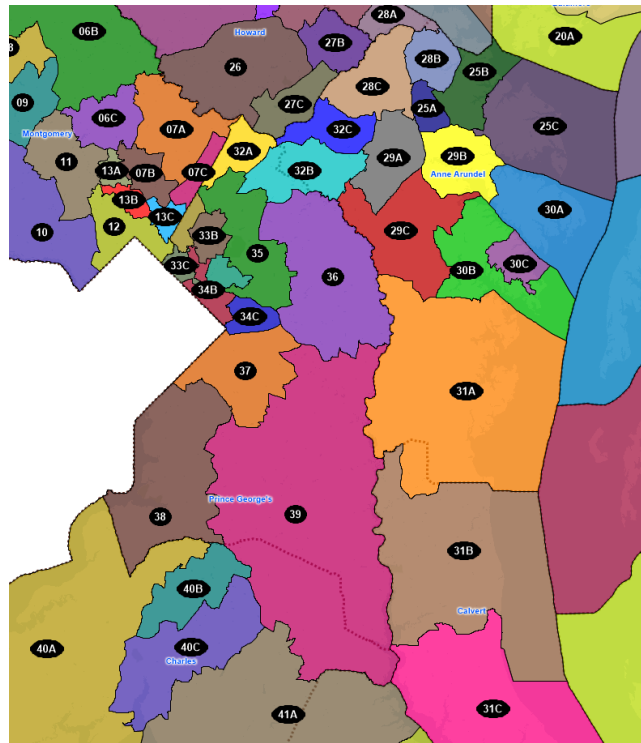
LRAC Delegate Plan for Prince George's County
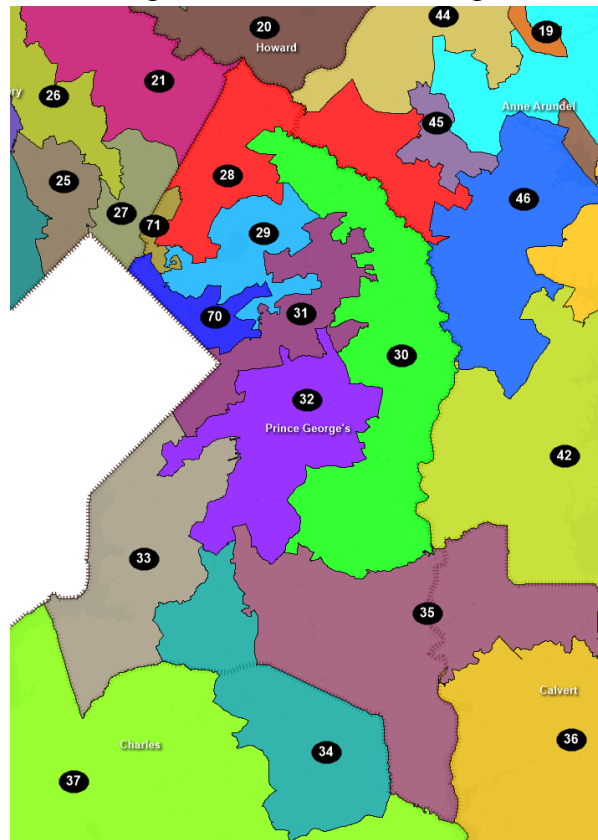
MCRC Proposed House Plan for Baltimore County
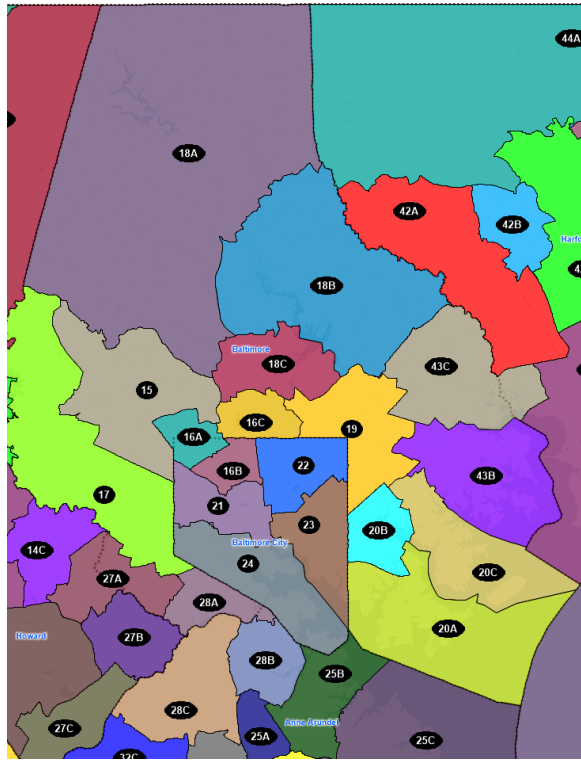
LRAC Proposed House Plan for Baltimore County
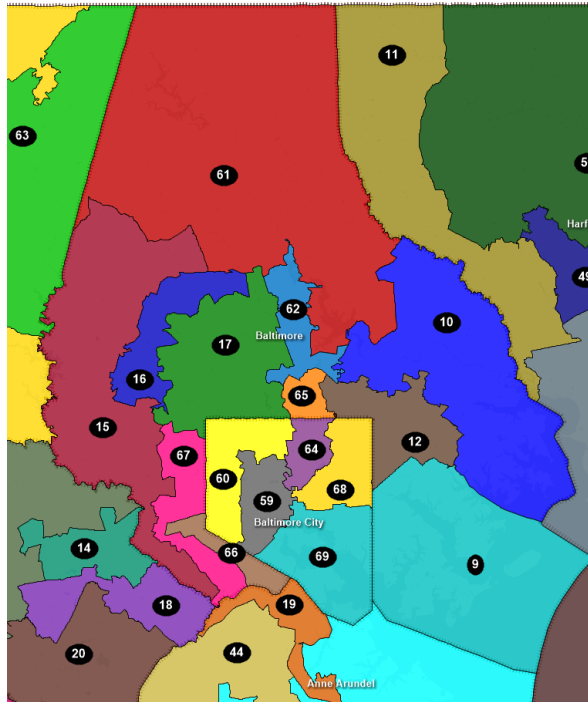
MCRC Proposed House Plan for Howard County
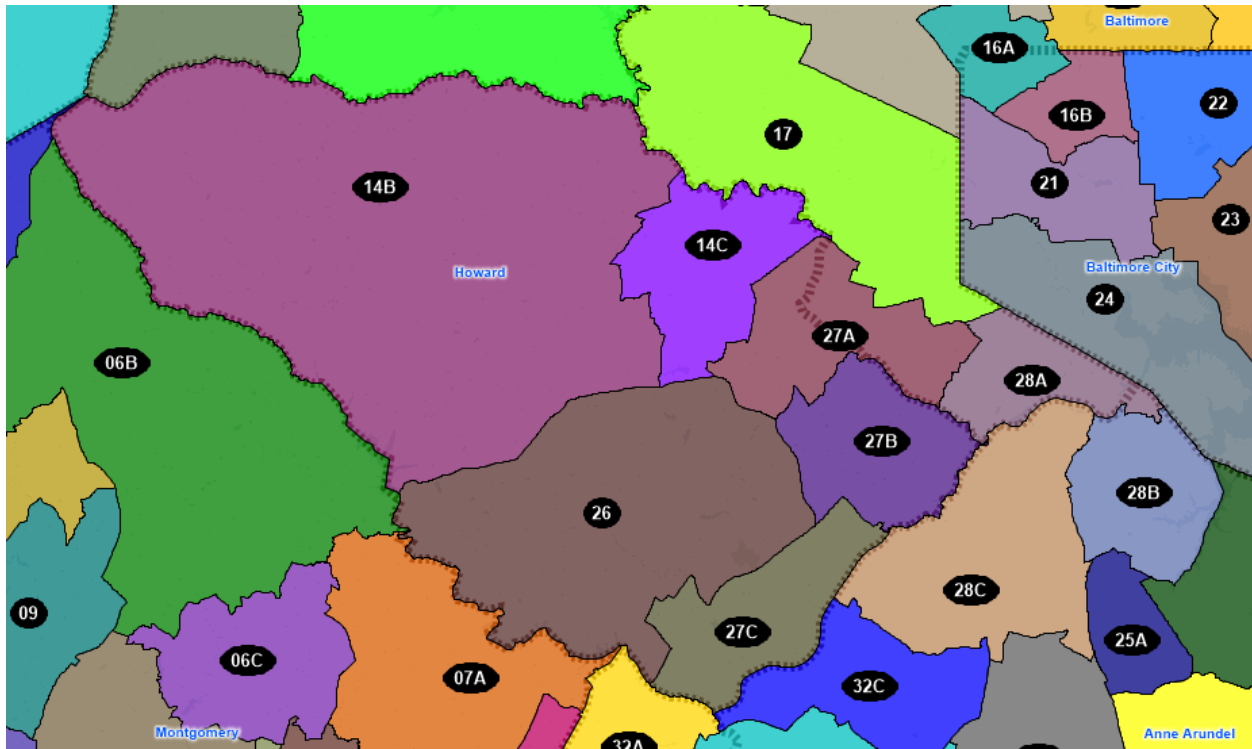
LRAC Proposed House Plan for Howard County
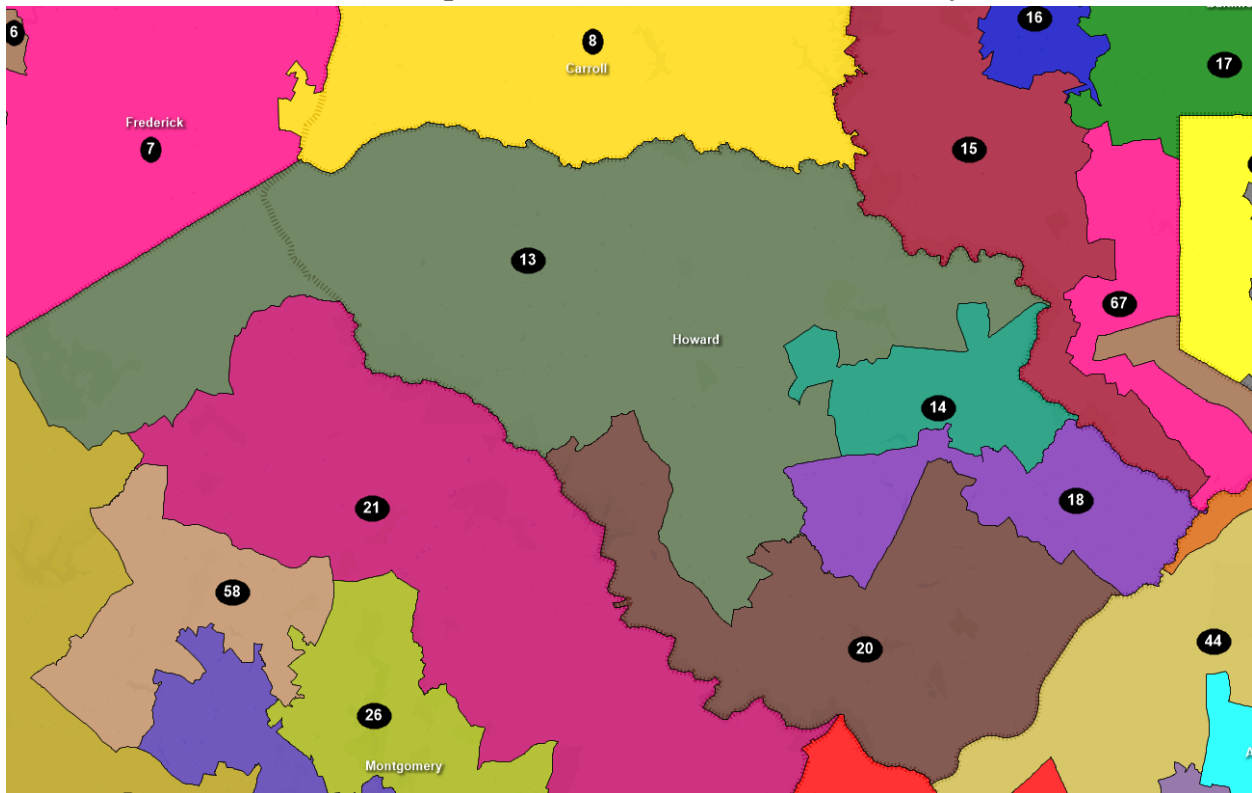
Table 2. Compactness Analysis for Commission's Proposed Senate Districts[6]

	MCRC Senate Plan	LRAC Senate Plan
Reock (higher values → more compact)		
Mean	0.44	0.39
Standard Deviation	0.10	0.12
Minimum	0.17	0.14
Maximum	0.62	0.63
Schwartzberg (lower values → more compact)		
Mean	1.62	1.92
Standard Deviation	0.26	0.43
Minimum	1.15	1.15
Maximum	2.35	3.18

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[6] Caliper Mapping and Transportation Glossary, What Are Measures of Compactness?, at
https://www.caliper.com/glossary/what-are-measures-of-compactness.htm:

- **Reock** – an area-based measure that compares each district to a circle, which is considered to be the most compact shape possible. The measure is always between 0 and 1, with 1 being the most compact.
- **Schwartzberg** – a perimeter-based measure that compares a simplified version of each district to a circle. The measure is usually greater than or equal to 1, with 1 being the most compact.
- **Alternate Schwartzberg** -- For each district, this Schwartzberg test computes the ratio of the perimeter of the district to the perimeter of a circle with the same area as the district. This measure is always greater than or equal to 1, with 1 being the most compact. The alternate Schwartzberg test computes one number for each district and the minimum, maximum, mean and standard deviation for the plan
- **Perimeter** – a test that lets you compare plans where the plan with the smallest perimeter is the most compact. The Perimeter test computes one number for the whole plan. If you are comparing several plans, the plan with the smallest total perimeter is the most compact.
- **Polsby-Popper** – a measure of the ratio of the district area to the area of a circle with the same perimeter. The measure is always between 0 and 1, with 1 being the most compact.
- **Length-Width** – computes the absolute difference between the width (east-west) and the height (north-south) of each district. A lower number indicates better length-width compactness.
- **Population Polygon** – computes the ratio of the district population to the approximate population of the convex hull of the district (minimum convex polygon which completely contains the district). The measure is always between 0 and 1, with 1 being the most compact.
- **Minimum Convex Polygon** – similar to the Population Polygon, but without regard to population within the areas. The measure is always between 0 and 1, with 1 being the most compact.
- **Population Circle** – computes the ratio of the district population to the approximate population of the minimum enclosing circle of the district. The measure is always between 0 and 1, with 1 being the most compact.
- **Ehrenburg** – computes the ratio of the largest inscribed circle divided by the area of the district. The measure is always between 0 and 1, with 1 being the most compact.

	MCRC Senate Plan	LRAC Senate Plan
Alternate Schwartzberg (lower values → more compact)		
Mean	1.76	2.08
Standard Deviation	0.33	0.50
Minimum	1.18	1.16
Maximum	2.92	3.46
Polsby-Popper (higher values → more compact)		
Mean	0.35	0.27
Standard Deviation	0.12	0.13
Minimum	0.12	0.08
Maximum	0.72	0.74
Population Polygon (higher values → more compact)		
Mean	0.77	0.68
Standard Deviation	0.13	0.15
Minimum	0.25	0.37
Maximum	0.94	0.98
Area/Convex Hull (higher values → more compact)		
Mean	0.77	0.71
Standard Deviation	0.09	0.12
Minimum	0.48	0.43
Maximum	0.92	0.94
Population Circle (higher values → more compact)		
Mean	0.48	0.40
Standard Deviation	0.16	0.18
Minimum	0.06	0.06
Maximum	0.84	0.81
Ehrenburg (higher values → more compact)		
Mean	0.39	0.33
Standard Deviation	0.11	0.13
Minimum	0.17	0.10
Maximum	0.64	0.67
Perimeter (lower values → more compact)		
Sum	3,805.46	4,347.28

Table 3. Compactness Analysis for Commission's Proposed House of Delegate Districts

	MCRC House Plan	LRAC House Plan
Reock (higher values → more compact)		
Mean	.43	.39
Standard Deviation	.098	.118
Minimum	.17	.17
Maximum	.67	.66
Schwartzberg (lower values → more compact)		
Mean	1.59	1.92
Standard Deviation	.296	.448
Minimum	1.20	1.15
Maximum	3.23	3.97
Alternate Schwartzberg (lower values → more compact)		
Mean	1.71	2.09
Standard Deviation	.370	.542
Minimum	1.22	1.16
Maximum	4.11	4.64
Polsby-Popper (higher values → more compact)		
Mean	.37	.27
Standard Deviation	.12	.13
Minimum	.06	.05
Maximum	.68	.74
Population Polygon (higher values → more compact)		
Mean	.77	.67
Standard Deviation	.13	.15
Minimum	.20	.37
Maximum	.98	.98
Area/Convex Hull (higher values → more compact)		
Mean	.78	.71
Standard Deviation	.08	.11
Minimum	.45	.38
Maximum	.95	.94
Population Circle (higher values → more compact)		
Mean	.44	.40
Standard Deviation	.15	.18
Minimum	.09	.06
Maximum	.84	.81

	MCRC House Plan	LRAC House Plan
Ehrenburg (higher values → more compact)		
Mean	.40	.33
Standard Deviation	.11	.13
Minimum	.16	.10
Maximum	.72	.64
Perimeter (lower values → more compact)		
Sum	7,173.58	10,781.97

3. Prohibited Considerations – Partisanship and Incumbency

Section C(1)(b) of the Governor's Executive Order delineates factors the Commission may not consider in the construction of the redistricting plans. In particular, the Order prohibits considering "[h]ow individuals are registered to vote, how individuals voted in the past, or the political party to which individuals belong" and "[t]he domicile or residence of any individual, including an incumbent officeholder or a potential candidate for office." The Commission's plan abides by these restrictions and did not account for the prohibited criteria as part of the line drawing process.

4. Use of Multimember Districts

Section C(1)(d)(ii) of the Governor's Executive Order expresses a preference for the use of single-member districts in the Commission's legislative plan. Specifically, it provides that "[t]o the extent possible and consistent with the Commission's other duties and responsibilities, [legislative districts shall be] subdivided into single-member delegate districts." The degree to which multimember delegate districts would be used in the Commission's plan for the House of Delegates provoked considerable public comment and deliberation among the Commissioners. In the end, the Commission adopted a hybrid model, in which certain densely populated Senate districts would be retained as three-member delegate districts. This meant that most (but not all) districts in Baltimore City, Prince George's County, and Montgomery County would be three-member districts, along with three others in Baltimore County that adjoined the City.

Although the Commission's plan makes use of multimember districts, it employs them much less frequently than does the LRAC plan. The LRAC plan contains 30 single-member districts, 12 two-member districts and 29 three-member districts. In contrast, the Commission's plan features 87 single-member districts, zero two-member districts, and 18 three-member districts.

II.   Plan Description

The legal requirements and principles in the Executive Order spelled out above greatly dictated the shape of the proposed districts in the Commission's Plan. Within those constraints, though, the plan responded to feedback the Commission heard in the many public hearings that were held. The plans went through several dozen iterations, as both Commissioners and the public offered suggestions on how best to represent all regions in Maryland. What follows below is a narrative description of the Legislative plan, which depicts the House of Delegates districts but discusses the Senate districts when relevant.[7] As the Governor's Order required a numbering of the districts beginning in the northwestern corner of the state, the following description begins with Western Maryland.

A. Western Maryland

Beginning in Western Maryland, the counties of Garrett, Allegany, Washington, Frederick, and Carroll include Senate Districts 1 through 5. Each Senate district is broken up into three single-member Delegate districts. The lines are drawn to maximize compactness, to the extent possible given the irregular boundary of the Potomac River. Senate District 1 extends from Garrett through Allegany into Washington County. Delegate District 1A contains the Garrett County municipalities of Oakland, Mountain Lake Park, Deer Park, Accident, Friendsville, plus the Allegany municipalities of Luke, Westernport, Barton, Lonaconing, Midland, and parts of Frostburg. Delegate District 1B is centered around the municipal lines of Cumberland and extends west to Frostburg. 1C does not include any incorporated municipalities but straddles the border between Allegany and Washington Counties.

Senate District 2 is largely contained within Washington County, but extends into Frederick County, picking up Rosemont, Brunswick and Burkittsville to achieve population equality. Most notably and consistent with the current district, Delegate District 2A fully encompasses Hagerstown – its irregular shape is due to the district following the municipal lines. District 2B covers the areas immediately around Hagerstown, while 2C moves north-south along the border with Frederick County.

Senate Districts 3 and 4 are fully contained within Frederick County. Senate District 3 wraps around the city of Frederick, picking up most of the smaller municipalities in the county. Delegate District 3A includes Middletown and Myersville, 3B includes Thurmont, Emmitsburg, Woodsboro, and Walkersville. 3C covers the southeastern corner of Frederick County. Because District 3 is fully contained within Frederick County, it necessarily splits the municipality of Mount Airy, which sits on the border of Frederick and Carroll County.

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[7] Because the House districts are nested within the Senate districts (or in the case of multimember districts are coterminous with them), the principles that undergird the House districts apply to the Senate as well.

Senate District 4 contains the municipality of Frederick. Delegate Districts 4A and 4B share the municipality, which is split into northern and southern halves. Delegate District 4C extends southward from Frederick to the border with Montgomery County.

Senate District 5 is fully contained within Carroll County. Each delegate district within it is centered on a particular municipality – 5A (Taneytown), 5B (Westminster), 5C (Manchester and Hampstead). Four single member delegate districts can be placed fully within Carroll County. As a result, in addition to Senate District 5, Delegate District 14A is also fully within Carroll County centered around Eldersburg and Sykesville.
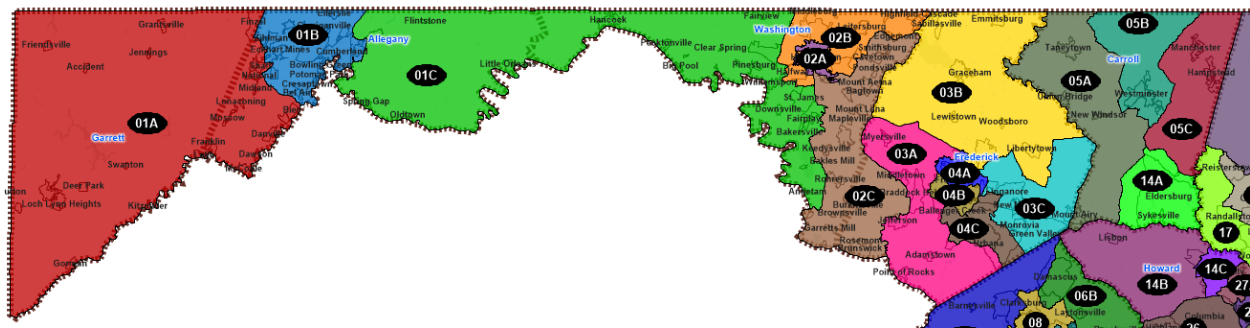
B. Montgomery County

Montgomery County fully contains eight Senate districts – Districts 6 through 13. Of
those, only Districts 6, 7, and 13 are split into single-member Delegate districts. District 6
contains the more rural areas of Montgomery County, wrapping around the major
urban/suburban areas. It also includes the municipalities of Poolesville, Barnesville, and
Laytonsville. District 8 is centered in Germantown, District 9 in the municipality of
Gaithersburg, District 10 in Potomac/Bethesda, District 11 in the municipality of Rockville
and North Bethesda, and District 12 contains the municipalities of Takoma Park, North
Chevy Chase, Somerset, Kensington and Garrett Park, as well as the areas of Chevy Chase
and Silver Spring. Delegate District 13A is a compact district that includes the large Latino
population of the Wheaton/Aspen Hill areas in a majority HVAP district; whereas 7C is a
compact majority Black district positioned between Columbia Pike and the border with
Prince George's County.
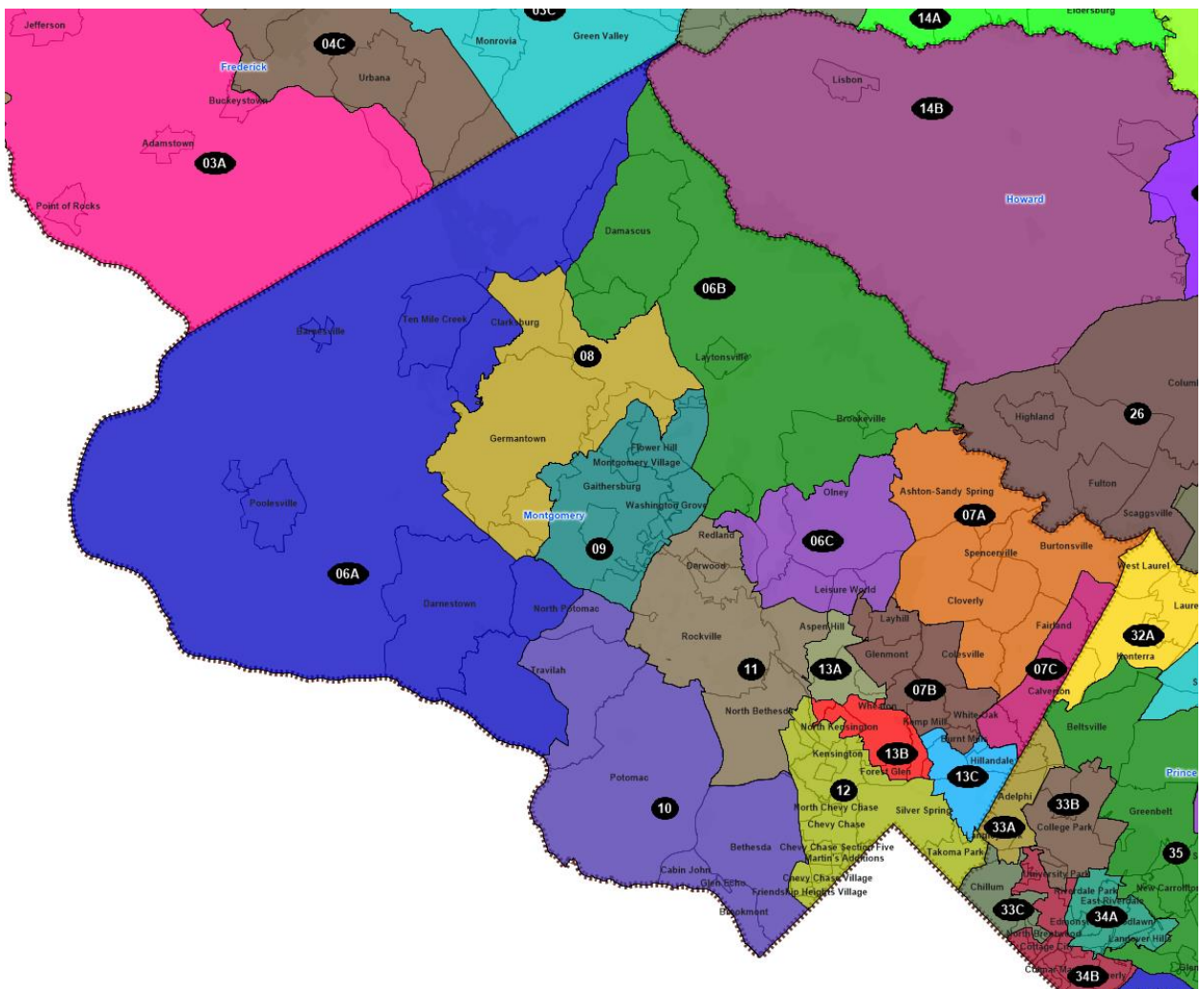
C. Howard County

All of the Senate Districts in Howard County, except District 26, are split into three single-member Delegate districts. District 26 encompasses Columbia, as well as the suburbs to its west extending to the Prince George's County border. As mentioned earlier, Delegate District 14A is fully within Carroll County so the other two Delegate Districts from Senate District 14 cover northern Howard County. Like its analog in the LRAC plan, 14C captures most of Ellicott City and has the highest Asian Voting Age Population share (31%) of any district in the plan. Senate District 27 extends from Baltimore County to the border with Prince George's County, running along Howard County's border with Anne Arundel County. Delegate District 27A is the only Delegate district crossing the border between Howard County and Baltimore County.
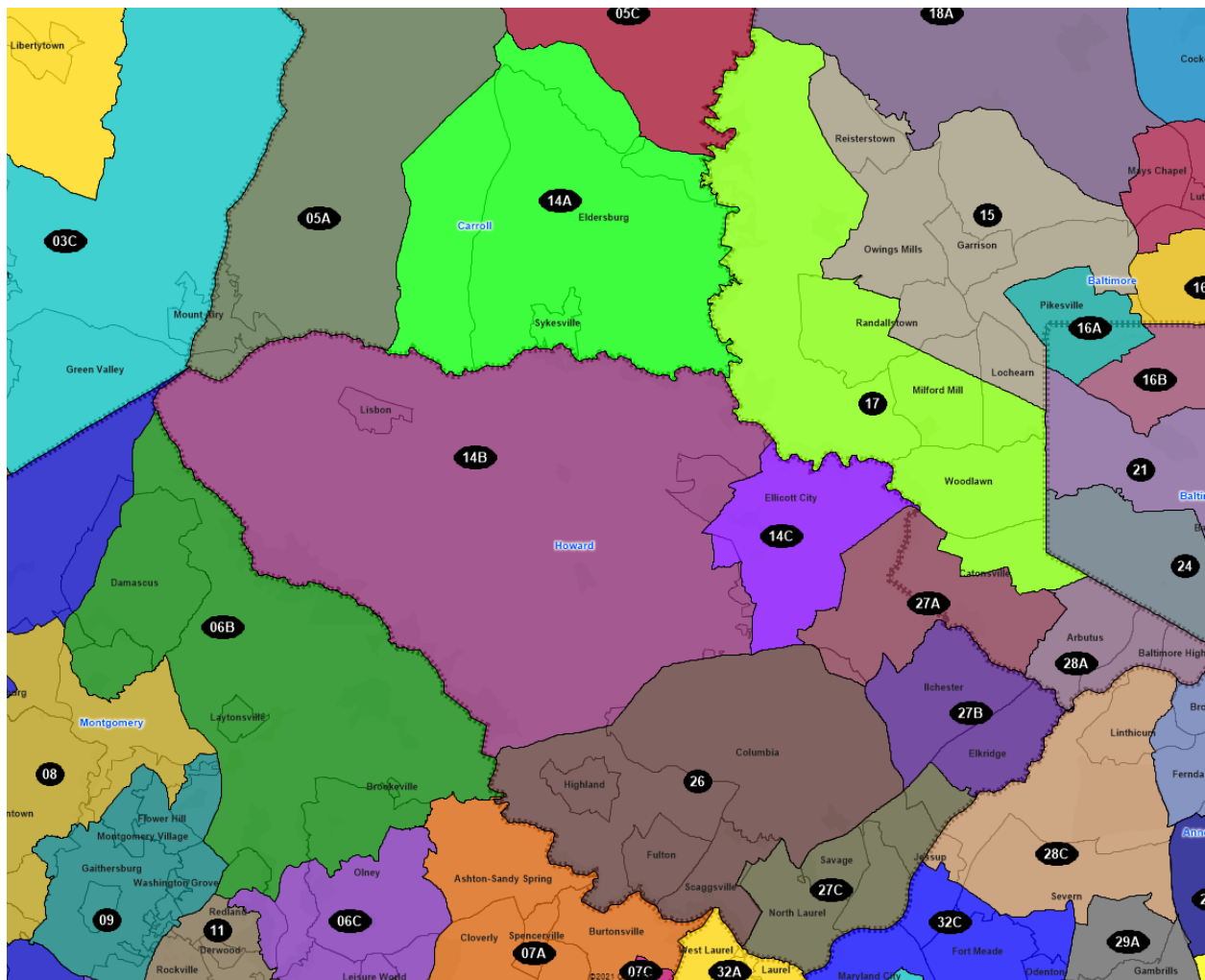
D. Baltimore City and Baltimore County

Baltimore City contains four full Senate Districts with one shared on its northern border with Baltimore County. In addition, in the crossover Senate District (District 16), one of the Delegate districts (16B) is fully within the city. The configuration of the Delegate District (16A) that crosses over into Baltimore County was heavily influenced by testimony the Commission received about the location of the Jewish Community on the City-County Border (which is split under the existing legislative districts). District 16A largely tracks the location of the "eruv" – a physically delineated boundary of religious significance to the Jewish community, which captures the area in Baltimore and Pikesville where observant Jews can carry objects on the Sabbath. In earlier version of the plan the "crossover" district went to the southeast into Dundalk. However, based on input from the community, arguing both that the community in Pikesville should be joined with the community just over the border into Baltimore and others who voiced great concern over joining Dundalk with southeastern Baltimore, the crossover district was moved to the northwest boundary. Each of the districts within the City of Baltimore, though, are compact, majority African American districts. The boundary for the districts in southern Baltimore is determined by the harbor, with Senate District 23 occupying the area northeast of the harbor and Senate District 24 running along the west. The border between District 23 and District 22 to its north generally follows Belair Road, and the border between 22 and the districts to its west follows North Charles Street.

Baltimore County contains a mixture of multimember and single-member delegate districts. Senate Districts 15 and 17 (majority Black districts just to the west of the city) and 19 (attached to the northeastern boundary of Baltimore City) are all three-member delegate districts, and the rest in the county are single-member delegate districts. As mentioned above, one delegate district (27A) crosses over from Howard County. Two other Senate districts cross the county boundary as well: Senate District 28 crosses into the southwest of Baltimore County from Anne Arundel, and Senate District 43 crosses the eastern border from Harford County. Senate District 18 covers the northern half of the land area of Baltimore County, but it is broken up into delegate districts that cover Cockeysville (18B) and Timonium, Hampton, and Mays Chapel (18C). 16C, just south of Senate District 18, covers most of Towson. The Commission had heard public testimony raising concerns in an earlier plan that had separated the neighborhood of Loch Hill from those to its west. 16C now unites all of those neighborhoods together – with the border between 16C and Senate District 19 following Loch Raven Road.

The districts in southeastern Baltimore County were the subject of considered public comment, with the Commission receiving over a hundred filed statements. The gist of those concerns was a desire to keep the areas of Edgemere, Dundalk, and Essex in one Senate district and not to cross over into Baltimore City. The Commission's plan does exactly that. The component delegate districts have 20A as Edgemere and Dundalk, 20C as covering Essex, and

20B including parts of Dundalk, Essex and Rosedale. (None of these are incorporated municipalities.)
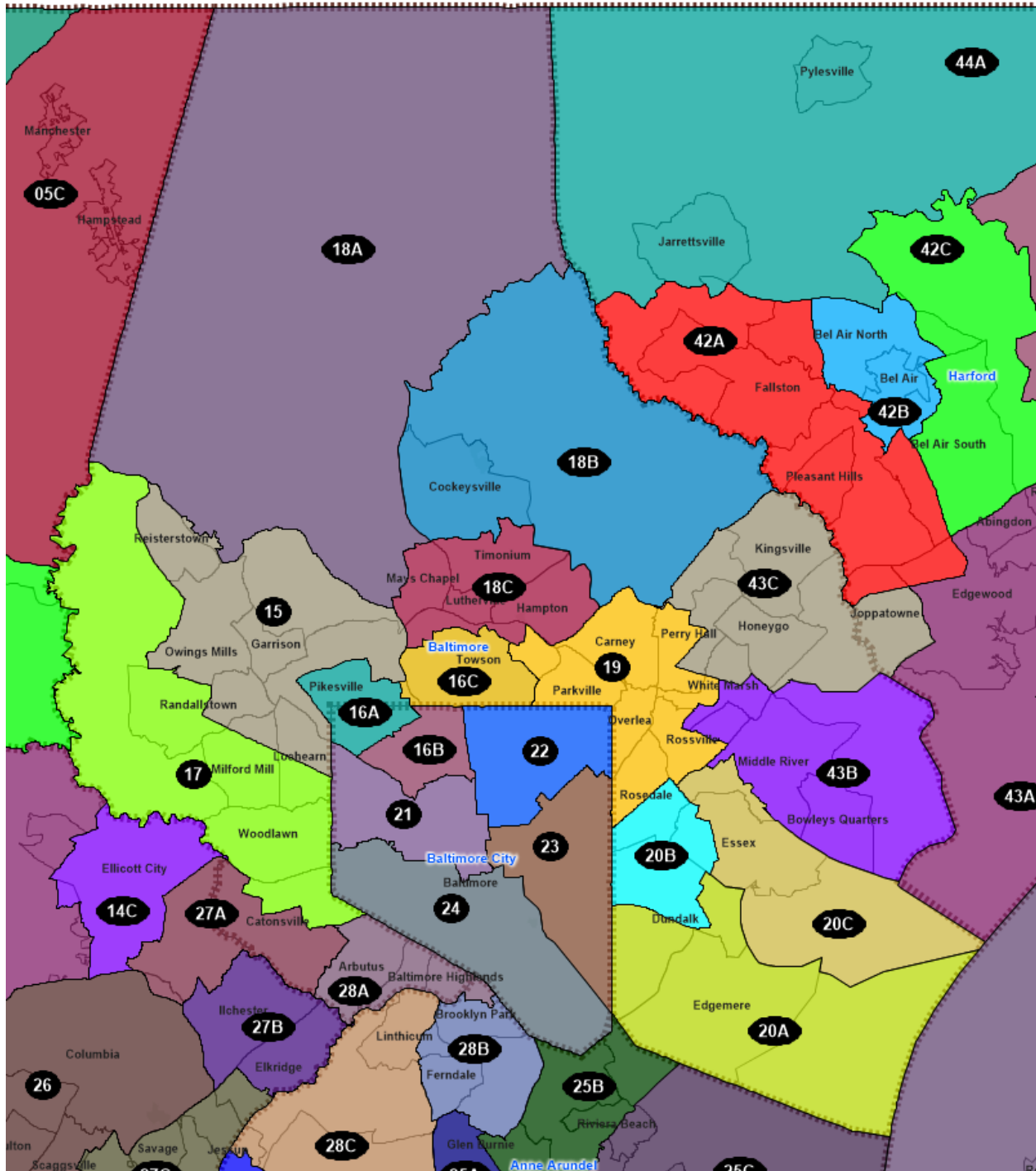
E.   Anne Arundel County

All of the Senate Districts in Anne Arundel County are broken up into three single-member delegate districts. Three districts cross over into Anne Arundel from other counties: one from the north (28 from Baltimore County), another from the South (31 from Calvert County), and a third from the west (32 from Prince George's County). Given that Anne Arundel is in the center of the state, the number of crossovers is to be expected, as outlying districts converge to get adequate population to comply with one-person, one vote. Several of the borders of the Anne Arundel districts largely track the Census Designated Places in the county. For example, Senate District 30 is an Annapolis-based district with Delegate District 30C fully encapsulating the municipality of Annapolis, 30A covering the areas of Arnold and Cape St. Claire, and 30B containing the Annapolis suburbs. Senate District 25 starts at the Baltimore City border and covers the southern half of Glen Burnie extending eastward to Lake Shore on the Chesapeake Bay. Senate District 29 covers the center of the County, with the component delegate districts covering Odenton and Gambrills (29A), Severna Park, Arden on Severn, and Herald Harbor (29B), and Crownsville and Crofton (29C). One delegate district (32C) of the crossover district into Prince George's County (Senate District 32) is drawn to cover all of Fort Meade.
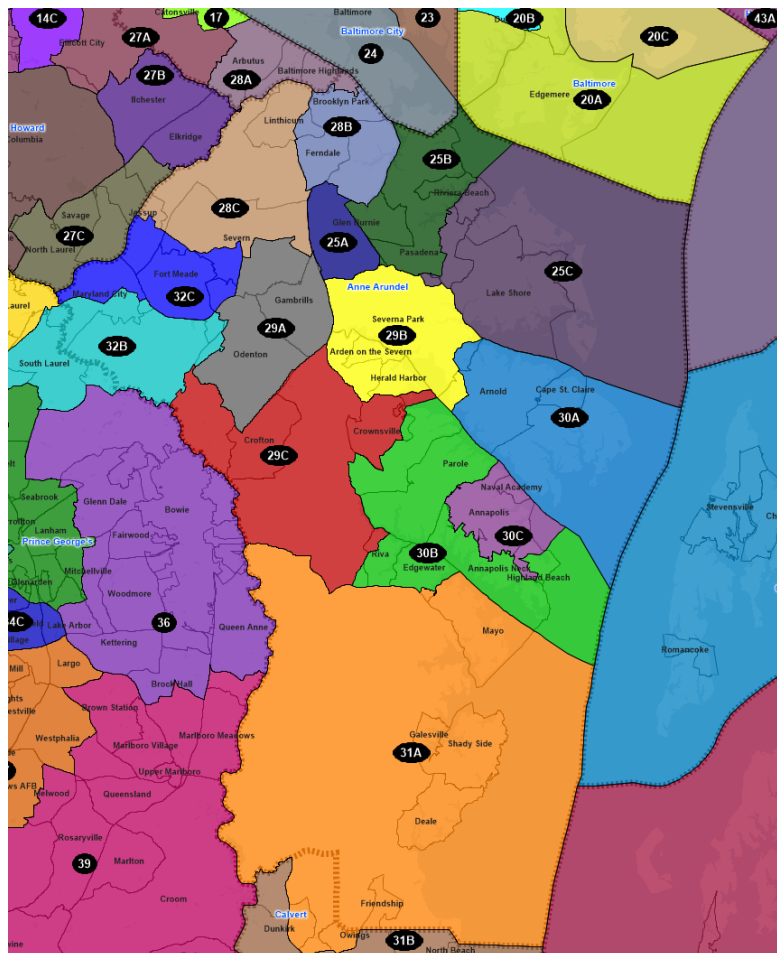
F. Prince George's County

In the Commission's plan, Prince George's County is home to eight Senate districts (in whole or in part): five of those are three-member delegate districts and the remainder are broken into seven single-member delegate districts. Two Senate Districts – 32 and 39 – cross over the Prince George's County border: Delegate District 32A crosses from Anne Arundel, and 39 from Charles County. All of the districts in Prince George's County are majority African American, except Delegate District 33A (which is 64.9% Hispanic VAP), 33C (which is just over 50% Hispanic VAP), District 34A (which is 54.6% Hispanic VAP), and 33B and 32A (in which no racial group constitutes a majority).

The districts in Prince George's County were drawn largely around the municipalities, which are quite contorted in shape and overlapping. Despite the strange shapes of the underlying municipalities, the districts are generally compact and follow physical and political boundaries. Beginning with the crossover district (32) from Anne Arundel, Delegate District 32B encompasses South Laurel and Delegate District 32A captures most of the municipality of Laurel and West Laurel and Konterra. Senate District 33 in the northwest corner of the County (adjoining Montgomery County and Washington, DC) is broken into three distinct delegate districts. 33A is a compact district centered in Adelphi, 33B encompasses all of College Park, University Park, and Berwyn Heights, and 33C occupies the corner where the Montgomery County border meets the DC border. 34A is a compact district encompassing Landover Hills, Woodlawn, East Riverdale, Edmonston and most of Riverdale Park, and Bladensburg. 34B contains the municipalities of Cheverly, Colmar Manor, Cottage City and Fairmont Heights, as well as most of Hyattsville, Brentwood and Mount Rainier. 34C contains the municipality of Seat Pleasant and the areas of Peppermill Village, Summerfield and Landover. District 35 is a large multimember district with its core comprised of the municipalities of New Carrollton and Greenbelt. Likewise, District 36 encompasses all of Bowie. 37 and 38 cleave to the D.C. border, with 37 covering the municipalities of Capitol Heights, District Heights and Morningside (as well as Joint Base Andrews Naval Air Facility) and 38 extending from Glassmanor all the way to Accokeek (including the municipality of Forest Heights). 39 is the large multimember district that covers all of southeastern Prince George's County and crosses over into Charles County. It extends from the municipality of Upper Marlboro (and its surroundings) southward all the way to Hughesville in Charles County.
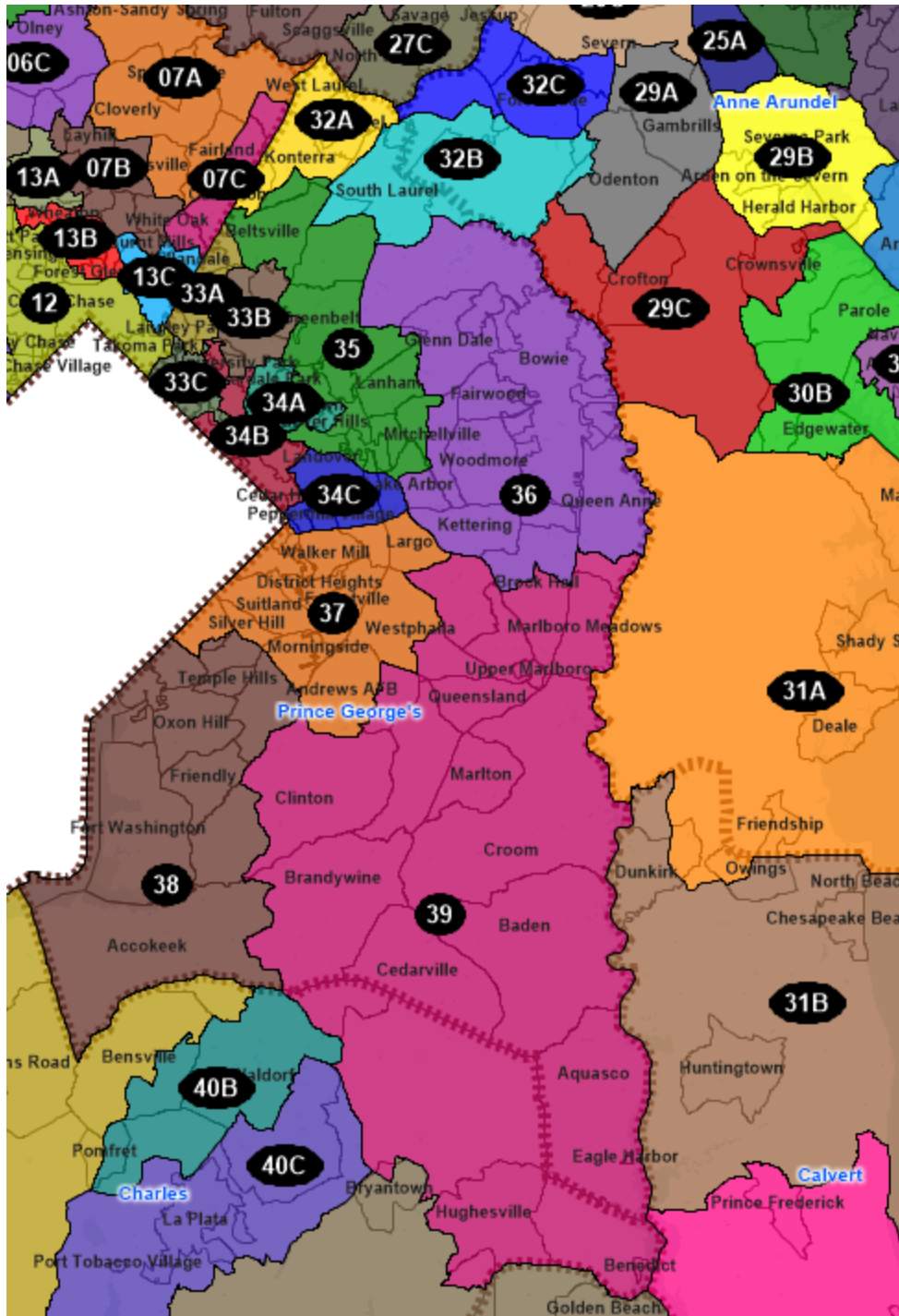
G. Southern Maryland

All of the districts in Southern Maryland (defined here as Charles, Calvert, and St. Mary's Counties) are broken into single-member Delegate districts. The Commission received spirited testimony regarding initial drafts of districts in Southern Maryland. Originally, in order to achieve population equality, District 31 dipped into St. Mary's County just over the Patuxent

River to access sufficient population. To address the public criticism for this move, the final plan does not have any crossover districts between Calvert and St. Mary's County. The decision to eliminate the crossover district into Calvert is what causes the crossover district (39) from Charles to Prince George's County, which is necessary to pick up the excess population caused by moving the Southern Maryland districts to the east.

The Districts in Charles County separate the county into east and west portions with the Delegate districts running north-south. Senate District 40, along with its component Delegate districts, is majority Black VAP. 40A occupies the westernmost portion of the county alongside the Potomac River, with 40C centered around the LaPlata municipality and 40B covering the geography in between.

Senate District 41 covers all of St. Mary's County and the remaining part of Charles County. The Delegate districts generally follow the geographic boundaries created by the three peninsulas in the south. District 41C stretches from the Patuxent River Airfield to the southernmost part of the county with the St. Mary's River Sanctuary and Route 471 as the border to the west. 41B then covers the next peninsula to the west, moving from St. George Island to the municipality of Leonardtown and up to the Patuxent River. 41A then covers the area straddling the Charles County – St. Mary County border.

Calvert County is too small to contain its own Senate district. District 31 covers all of Calvert County. The component Delegate districts proceed as a ladder up the county and into Anne Arundel County. Districts 31C and 31B almost fully cover Calvert with just a single precinct adjoined to 31A, which covers southern Anne Arundel County.
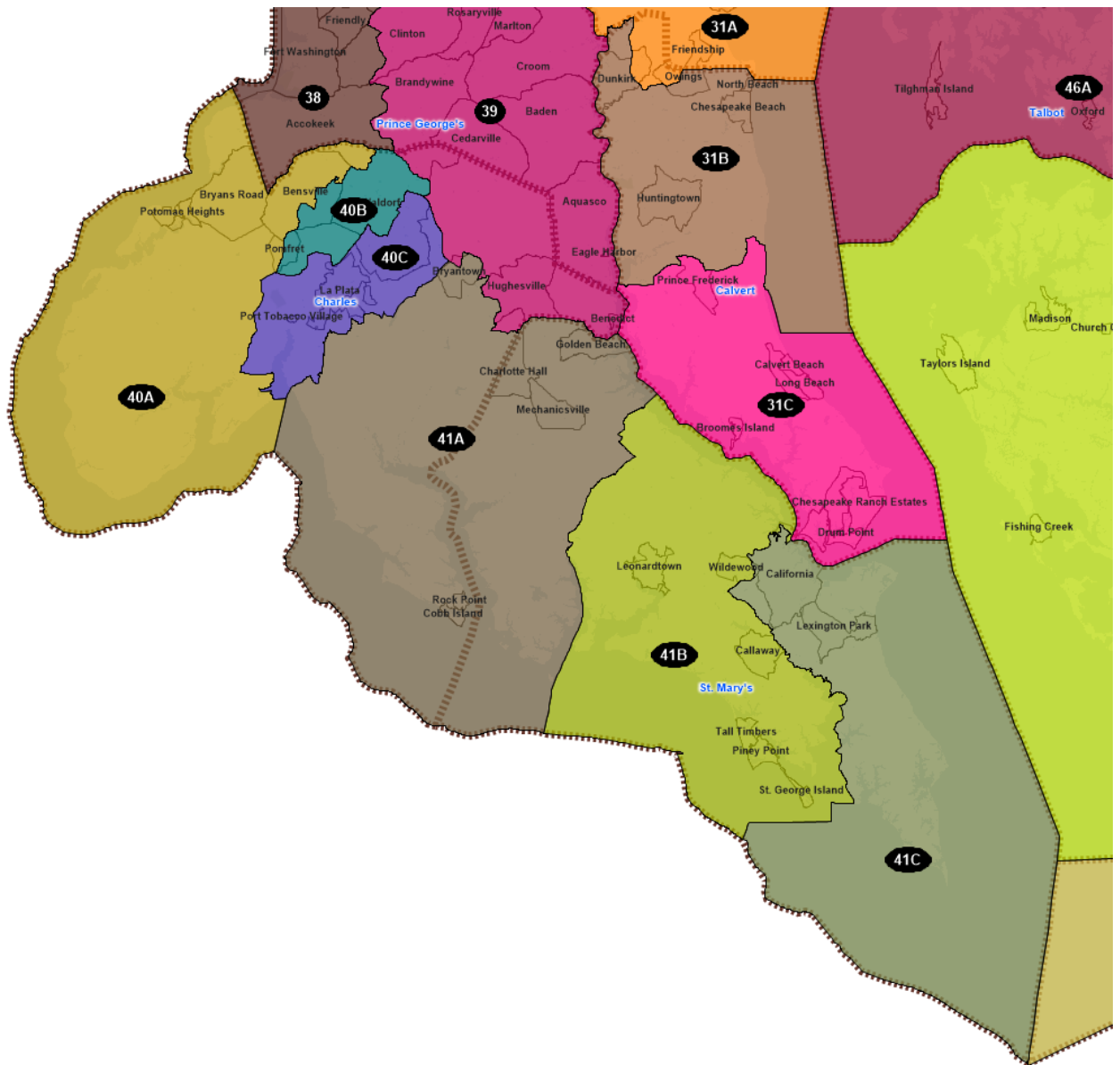
H. Harford County and Eastern Shore

All of the Senate districts in Harford County and the Eastern Shore are broken up into three single-member Delegate districts each. The topography of the Chesapeake Bay creates significant challenges to redistricting in this area. In particular, although water contiguity is inevitable for some parts of a plan in this region given the number of islands and inlets along the Chesapeake, travel contiguity (i.e., the ability to get from one part of a district to another through roads, bridges, or ferries) was one of the goals of the plan wherever possible.

The Harford County districts can be easily explained by the geographical features there and the municipalities. Senate District 43 straddles the border between Baltimore County and Harford County, with Delegate District 43A fully contained within Harford and covering the areas along the Chesapeake (Edgewood, Abingdon, Riverside and Perryman). Senate District 42 is centered around Bel Air, with Delegate District 42A fully covering the municipality of Bel Air and 42A and 42C covering the areas to the west and east respectively. Senate District 44 stretches over the border between Harford and Cecil County, covering Aberdeen and the rural areas to the north. Delegate District 44B includes the municipalities of Aberdeen and Havre de Grace, and Delegate District 44C in Cecil includes the municipalities of Port Deposit, Perryville, Charlestown and North East.

Senate District 45 covers parts of Cecil and Caroline Counties and all of Kent and Queen Anne's County. Delegate District 45A is full within southern Cecil County, 45B covers all of Kent and the eastern portions of Queen Anne's and Caroline Counties. 45C covers all of western Queen Anne's County.

The Commission received some understandable criticism for the way districts split Caroline County. Under the plan, Caroline County is split between Senate Districts 45 and 46 and between Delegate Districts 45B, 46A, and 46C. Several forces lead to the splits. First, to maintain travel contiguity within Districts 45C and 46A, each of those districts begins at the Chesapeake and then moves east within their respective counties (Queen Anne's and Talbot). Therefore, there is nowhere else for Delegate District 45B to go, except into Caroline County. The same is true for 46C. If it were to move into and split Talbot County, the effect on 46A would be to convert it into a horseshoe-shaped district going from the Chesapeake over (or perhaps splitting) the municipality of Easton and then into southern Caroline County. Because Caroline County is landlocked, the districts surrounding it enter into Caroline County to achieve population equality because they have nowhere else to go. They are bounded either by county lines or by the Chesapeake. The Commission considered various options, but all were inferior to the final plan in some respect.

Senate District 46 is centered in Talbot and Dorchester Counties but contains portions of Caroline and Wicomico. 46A, as mentioned above is a Talbot County district that moves into Caroline just enough to pick up the requisite population while not splitting the municipality of Denton. The shape of the other component Delegate districts is determined by the need to create a majority-Black Delegate district stretching from Salisbury to Cambridge. As mentioned above, a predecessor to this district was created pursuant to a successful lawsuit under Section 2 Voting Rights Act. Nevertheless, the Commission's version of 46B is more compact than the existing configuration while maintaining a voting age population that is 54.1% Black. 46C wraps around 46B to cover the rest of Dorchester and into Caroline and Wicomico in order to achieve population equality.

Senate District 47 rounds out the plan and captures the southeast corner of Maryland. 47A contains the parts of Salisbury not in 46B, as well as the municipality of Fruitland. 47C covers the rest of Wicomico County, moving eastward all the way to Ocean City. Finally, 47B contains the municipality of Berlin (which determines its northern border) and then the rest of Worcester County and all of Somerset County, including the municipalities of Snow Hill, Pocomoke City, Princess Anne, and Crisfield.

Conclusion

The Commission's Legislative District Plan complies with all the applicable legal criteria and provides a reasoned basis for the districts even beyond what was legally required. It complies with one person one vote, avoids race-based vote dilution or use of race as a predominant factor, and complies with the Voting Rights Act. It also abides by the natural boundary, political subdivision, and compactness requirements of the Executive Order. It does all this while ignoring partisan or incumbency-related considerations.

Appendices: District Details

Table A1. MCRC Senate Plan Demographics

District	Population	Deviation	Deviation %	% Non-Hispanic White VAP	% Black VAP	% Hispanic VAP	% Asian VAP
01	129,054	-2,338	-1.8%	87.2%	7.7%	1.8%	1.3%
02	129,713	-1,679	-1.3%	76.4%	13.0%	6.1%	2.5%
03	129,566	-1,826	-1.4%	83.6%	5.1%	5.5%	3.6%
04	128,867	-2,525	-1.9%	57.6%	17.7%	15.2%	8.4%
05	129,299	-2,093	-1.6%	87.5%	4.2%	3.7%	2.3%
06	133,628	2,236	1.7%	59.9%	13.1%	10.5%	15.2%
07	132,259	867	0.7%	**28.2%**	40.5%	15.8%	15.3%
08	133,738	2,346	1.8%	**31.2%**	24.5%	19.8%	24.1%
09	133,554	2,162	1.6%	**31.8%**	19.9%	28.6%	19.1%
10	133,258	1,866	1.4%	63.4%	5.9%	7.1%	22.2%
11	132,797	1,405	1.1%	**49.6%**	12.3%	15.7%	21.1%
12	133,506	2,114	1.6%	56.1%	21.8%	12.0%	9.3%
13	129,970	-1,422	-1.1%	**24.9%**	21.7%	41.1%	12.0%
14	130,563	-829	-0.6%	69.8%	7.0%	3.4%	18.2%
15	130,862	-530	-0.4%	**32.9%**	**54.1%**	7.0%	5.9%
16	133,517	2,125	1.6%	53.1%	34.4%	4.6%	7.0%
17	131,686	294	0.2%	**25.6%**	**60.4%**	5.3%	8.3%
18	133,568	2,176	1.7%	78.0%	7.9%	4.6%	8.0%
19	132,736	1,344	1.0%	55.1%	29.7%	5.3%	8.6%
20	133,533	2,141	1.6%	66.5%	19.3%	8.7%	2.6%
21	129,686	-1,706	-1.3%	**22.6%**	**67.4%**	3.7%	6.0%
22	128,957	-2,435	-1.9%	**26.2%**	**64.3%**	3.8%	5.3%
23	128,984	-2,408	-1.8%	**28.6%**	**54.3%**	13.4%	3.4%
24	128,878	-2,514	-1.9%	**34.7%**	**53.3%**	7.3%	3.9%
25	131,218	-174	-0.1%	66.9%	18.7%	7.3%	4.8%
26	129,420	-1,972	-1.5%	**49.7%**	25.1%	7.9%	16.4%
27	133,871	2,479	1.9%	**48.1%**	22.6%	8.2%	20.0%
28	133,732	2,340	1.8%	57.8%	21.6%	9.7%	9.1%
29	132,631	1,239	0.9%	73.0%	13.0%	5.4%	6.6%
30	131,110	-282	-0.2%	74.0%	11.3%	9.4%	3.6%

Figures in **bold** indicate majority-minority VAP and majority Black VAP districts.

District	Population	Deviation	Deviation %	% Non-Hispanic White VAP	% Black VAP	% Hispanic VAP	% Asian VAP
31	133,471	2,079	1.6%	77.7%	13.0%	4.2%	2.5%
32	130,948	-444	-0.3%	**23.7%**	**52.2%**	15.7%	8.5%
33	130,594	-798	-0.6%	**21.9%**	27.8%	41.0%	9.9%
34	130,738	-654	-0.5%	**10.2%**	**57.7%**	29.6%	3.0%
35	133,072	1,680	1.3%	**13.1%**	**57.4%**	22.8%	7.3%
36	130,113	-1,279	-1.0%	**18.7%**	**70.4%**	6.3%	4.9%
37	129,598	-1,794	-1.4%	**4.1%**	**87.1%**	7.7%	1.6%
38	129,346	-2,046	-1.6%	**7.4%**	**74.0%**	13.6%	5.3%
39	130,955	-437	-0.3%	**15.9%**	**74.9%**	6.6%	2.7%
40	129,781	-1,611	-1.2%	**31.4%**	**56.7%**	6.0%	5.0%
41	129,120	-2,272	-1.7%	73.1%	15.9%	4.7%	4.0%
42	131,268	-124	-0.1%	82.5%	7.0%	3.8%	4.8%
43	132,707	1,315	1.0%	60.1%	26.8%	5.2%	6.2%
44	133,548	2,156	1.6%	81.7%	9.6%	3.9%	2.1%
45	133,417	2,025	1.5%	80.1%	10.5%	5.4%	1.9%
46	129,613	-1,779	-1.4%	65.7%	25.7%	5.4%	1.7%
47	132,953	1,561	1.2%	71.4%	19.8%	4.1%	2.9%

Figures in **bold** indicate majority-minority VAP and majority Black VAP districts.

Table A2. MCRC House Plan Demographics

District	Population	Deviation	Deviation %	% Non-Hispanic White VAP	% Black VAP	% Hispanic VAP	% Asian VAP
01A	42,775	-1,022	-2.3%	93.5%	2.6%	1.0%	0.9%
01B	43,158	-639	-1.5%	84.8%	10.3%	1.4%	1.4%
01C	43,121	-676	-1.5%	83.6%	10.0%	3.0%	1.5%
02A	43,882	85	0.2%	66.2%	21.4%	7.9%	2.7%
02B	42,923	-874	-2.0%	80.5%	8.6%	6.0%	3.0%
02C	42,908	-889	-2.0%	82.0%	9.4%	4.4%	1.9%
03A	42,750	-1,047	-2.4%	80.7%	6.4%	6.7%	4.4%
03B	42,994	-803	-1.8%	86.6%	4.6%	4.5%	2.0%
03C	43,822	25	0.1%	83.5%	4.3%	5.3%	4.4%
04A	42,676	-1,121	-2.6%	64.3%	17.6%	10.4%	6.4%
04B	43,025	-772	-1.8%	**47.4%**	21.3%	23.7%	6.8%
04C	43,166	-631	-1.4%	61.0%	14.1%	11.3%	12.2%
05A	42,619	-1,178	-2.7%	89.3%	3.3%	3.3%	1.8%
05B	43,206	-591	-1.3%	83.1%	6.6%	5.2%	3.1%
05C	43,474	-323	-0.7%	90.2%	2.8%	2.6%	1.9%
06A	44,179	382	0.9%	60.0%	9.4%	9.2%	20.3%
06B	45,057	1,260	2.9%	64.1%	11.1%	11.4%	11.8%
06C	44,392	595	1.4%	55.8%	18.5%	10.9%	13.8%
07A	45,092	1,295	3.0%	**35.7%**	30.4%	14.6%	18.5%
07B	44,082	285	0.7%	**33.6%**	33.9%	17.5%	14.5%
07C	43,085	-712	-1.6%	**14.1%**	**58.8%**	15.4%	12.7%
08	133,738	2,347	1.8%	**31.2%**	24.5%	19.8%	24.1%
	133,738	2,347	1.8%	**31.2%**	24.5%	19.8%	24.1%
	133,738	2,347	1.8%	**31.2%**	24.5%	19.8%	24.1%
09	133,554	2,163	1.6%	**31.8%**	19.9%	28.6%	19.1%
	133,554	2,163	1.6%	**31.8%**	19.9%	28.6%	19.1%
	133,554	2,163	1.6%	**31.8%**	19.9%	28.6%	19.1%
10	133,258	1,867	1.4%	63.4%	5.9%	7.1%	22.2%
	133,258	1,867	1.4%	63.4%	5.9%	7.1%	22.2%
	133,258	1,867	1.4%	63.4%	5.9%	7.1%	22.2%
11	132,797	1,406	1.1%	**49.6%**	12.3%	15.7%	21.1%
	132,797	1,406	1.1%	**49.6%**	12.3%	15.7%	21.1%
	132,797	1,406	1.1%	**49.6%**	12.3%	15.7%	21.1%
12	133,506	2,115	1.6%	56.1%	21.8%	12.0%	9.3%
	133,506	2,115	1.6%	56.1%	21.8%	12.0%	9.3%
	133,506	2,115	1.6%	56.1%	21.8%	12.0%	9.3%

Figures in **bold** indicate majority-minority VAP, majority Black VAP, and majority Hispanic VAP districts.

District	Population	Deviation	Deviation %	% Non-Hispanic White VAP	% Black VAP	% Hispanic VAP	% Asian VAP
13A	44,650	853	1.9%	**14.1%**	17.6%	**55.2%**	11.7%
13B	42,775	-1,022	-2.3%	**33.6%**	23.0%	30.3%	12.9%
13C	42,545	-1,252	-2.9%	**27.0%**	24.7%	37.5%	11.2%
14A	43,341	-456	-1.0%	85.3%	5.3%	3.3%	4.1%
14B	43,077	-720	-1.6%	68.9%	6.6%	3.0%	19.9%
14C	44,145	348	0.8%	54.7%	9.1%	3.9%	31.1%
15	130,862	-529	-0.4%	**32.9%**	**54.1%**	7.0%	5.9%
	130,862	-529	-0.4%	**32.9%**	**54.1%**	7.0%	5.9%
	130,862	-529	-0.4%	**32.9%**	**54.1%**	7.0%	5.9%
16A	44,863	1,066	2.4%	58.2%	31.0%	5.3%	3.7%
16B	43,667	-130	-0.3%	**34.9%**	**51.5%**	3.7%	9.5%
16C	44,987	1,190	2.7%	66.3%	20.7%	5.0%	7.5%
17	131,686	295	0.2%	**25.6%**	**60.4%**	5.3%	8.3%
	131,686	295	0.2%	**25.6%**	**60.4%**	5.3%	8.3%
	131,686	295	0.2%	**25.6%**	**60.4%**	5.3%	8.3%
18A	44,650	853	1.9%	85.9%	4.8%	2.7%	4.7%
18B	44,863	1,066	2.4%	70.5%	12.0%	7.3%	8.7%
18C	44,055	258	0.6%	77.5%	7.0%	3.8%	10.7%
19	132,736	1,345	1.0%	55.1%	29.7%	5.3%	8.6%
	132,736	1,345	1.0%	55.1%	29.7%	5.3%	8.6%
	132,736	1,345	1.0%	55.1%	29.7%	5.3%	8.6%
20A	44,781	984	2.2%	72.0%	15.7%	7.1%	2.2%
20B	44,512	715	1.6%	70.0%	10.6%	13.0%	3.0%
20C	44,240	443	1.0%	57.3%	31.8%	6.0%	2.6%
21	129,686	-1,705	-1.3%	**22.6%**	**67.4%**	3.7%	6.0%
	129,686	-1,705	-1.3%	**22.6%**	**67.4%**	3.7%	6.0%
	129,686	-1,705	-1.3%	**22.6%**	**67.4%**	3.7%	6.0%
22	128,957	-2,434	-1.9%	**26.2%**	**64.3%**	3.8%	5.3%
	128,957	-2,434	-1.9%	**26.2%**	**64.3%**	3.8%	5.3%
	128,957	-2,434	-1.9%	**26.2%**	**64.3%**	3.8%	5.3%
23	128,984	-2,407	-1.8%	**28.6%**	**54.3%**	13.4%	3.4%
	128,984	-2,407	-1.8%	**28.6%**	**54.3%**	13.4%	3.4%
	128,984	-2,407	-1.8%	**28.6%**	**54.3%**	13.4%	3.4%
24	128,878	-2,513	-1.9%	**34.7%**	**53.3%**	7.3%	3.9%
	128,878	-2,513	-1.9%	**34.7%**	**53.3%**	7.3%	3.9%
	128,878	-2,513	-1.9%	**34.7%**	**53.3%**	7.3%	3.9%

Figures in **bold** indicate majority-minority VAP, majority Black VAP, and majority Hispanic VAP districts.

District	Population	Deviation	Deviation %	% Non-Hispanic White VAP	% Black VAP	% Hispanic VAP	% Asian VAP
25A	42,595	-1,202	-2.7%	51.2%	30.2%	10.9%	6.2%
25B	43,906	109	0.2%	62.1%	21.8%	8.2%	5.8%
25C	44,717	920	2.1%	86.3%	5.0%	3.1%	2.6%
26	129,420	-1,971	-1.5%	**49.7%**	25.1%	7.9%	16.4%
	129,420	-1,971	-1.5%	**49.7%**	25.1%	7.9%	16.4%
	129,420	-1,971	-1.5%	**49.7%**	25.1%	7.9%	16.4%
27A	44,514	717	1.6%	61.3%	12.0%	4.0%	21.3%
27B	44,371	574	1.3%	52.1%	17.8%	9.0%	20.1%
27C	44,986	1,189	2.7%	**30.6%**	38.2%	11.8%	18.7%
28A	44,509	712	1.6%	60.0%	16.9%	11.2%	9.7%
28B	44,810	1,013	2.3%	63.3%	20.1%	9.1%	5.1%
28C	44,413	616	1.4%	50.1%	27.4%	8.8%	12.6%
29A	45,080	1,283	2.9%	62.2%	20.6%	7.2%	8.1%
29B	44,034	237	0.5%	85.6%	4.6%	3.2%	4.6%
29C	43,517	-280	-0.6%	71.7%	13.6%	5.9%	7.2%
30A	44,499	702	1.6%	82.4%	6.2%	5.1%	4.0%
30B	43,019	-778	-1.8%	82.3%	6.7%	5.7%	3.4%
30C	43,592	-205	-0.5%	57.0%	21.0%	17.6%	3.4%
31A	44,703	906	2.1%	81.4%	8.6%	5.3%	2.2%
31B	44,137	340	0.8%	77.9%	12.9%	3.6%	3.1%
31C	44,631	834	1.9%	73.8%	17.6%	3.7%	2.3%
32A	43,759	-38	-0.1%	**22.7%**	47.7%	18.0%	11.4%
32B	43,421	-376	-0.9%	**20.6%**	**53.0%**	20.2%	6.5%
32C	43,768	-29	-0.1%	**27.5%**	**55.7%**	9.3%	7.5%
33A	43,333	-464	-1.1%	**5.8%**	25.4%	**64.9%**	4.9%
33B	44,134	337	0.8%	**48.5%**	16.9%	14.0%	20.2%
33C	43,127	-670	-1.5%	**5.5%**	43.3%	**50.1%**	2.6%
34A	44,157	360	0.8%	**7.1%**	36.1%	**54.6%**	2.8%
34B	43,927	130	0.3%	**20.6%**	**52.5%**	22.5%	4.8%
34C	42,654	-1,143	-2.6%	**2.1%**	**84.2%**	13.0%	1.4%
35	133,072	1,681	1.3%	**13.1%**	**57.4%**	22.8%	7.3%
	133,072	1,681	1.3%	**13.1%**	**57.4%**	22.8%	7.3%
	133,072	1,681	1.3%	**13.1%**	**57.4%**	22.8%	7.3%
36	130,113	-1,278	-1.0%	**18.7%**	**70.4%**	6.3%	4.9%
	130,113	-1,278	-1.0%	**18.7%**	**70.4%**	6.3%	4.9%
	130,113	-1,278	-1.0%	**18.7%**	**70.4%**	6.3%	4.9%

Figures in **bold** indicate majority-minority VAP, majority Black VAP, and majority Hispanic VAP districts.

District	Population	Deviation	Deviation %	% Non-Hispanic White VAP	% Black VAP	% Hispanic VAP	% Asian VAP
37	129,598	-1,793	-1.4%	**4.1%**	**87.1%**	7.7%	1.6%
	129,598	-1,793	-1.4%	**4.1%**	**87.1%**	7.7%	1.6%
	129,598	-1,793	-1.4%	**4.1%**	**87.1%**	7.7%	1.6%
38	129,346	-2,045	-1.6%	**7.4%**	**74.0%**	13.6%	5.3%
	129,346	-2,045	-1.6%	**7.4%**	**74.0%**	13.6%	5.3%
	129,346	-2,045	-1.6%	**7.4%**	**74.0%**	13.6%	5.3%
39	130,955	-436	-0.3%	**15.9%**	**74.9%**	6.6%	2.7%
	130,955	-436	-0.3%	**15.9%**	**74.9%**	6.6%	2.7%
	130,955	-436	-0.3%	**15.9%**	**74.9%**	6.6%	2.7%
40A	42,681	-1,116	-2.5%	**34.5%**	**53.8%**	5.5%	4.9%
40B	44,137	340	0.8%	**24.4%**	**62.1%**	7.2%	5.9%
40C	42,963	-834	-1.9%	**35.5%**	**54.1%**	5.2%	4.3%
41A	42,692	-1,105	-2.5%	80.1%	12.6%	2.6%	1.7%
41B	42,893	-904	-2.1%	81.4%	8.6%	3.5%	4.1%
41C	43,535	-262	-0.6%	58.1%	26.1%	7.8%	6.2%
42A	42,711	-1,086	-2.5%	82.0%	7.7%	3.7%	4.7%
42B	44,650	853	1.9%	84.9%	5.3%	3.7%	4.2%
42C	43,907	110	0.3%	80.6%	7.9%	3.9%	5.5%
43A	44,587	790	1.8%	**47.9%**	39.9%	7.0%	3.7%
43B	44,027	230	0.5%	58.9%	28.3%	5.4%	5.6%
43C	44,093	296	0.7%	73.0%	12.8%	3.2%	9.1%
44A	44,366	569	1.3%	91.9%	1.7%	2.2%	1.2%
44B	44,383	586	1.3%	68.1%	20.4%	5.9%	3.5%
44C	44,799	1,002	2.3%	85.2%	6.6%	3.6%	1.5%
45A	44,537	740	1.7%	77.5%	12.4%	5.4%	2.4%
45B	44,583	786	1.8%	76.6%	12.8%	7.2%	1.5%
45C	44,297	500	1.1%	86.2%	6.3%	3.5%	1.9%
46A	43,173	-624	-1.4%	78.8%	11.9%	6.2%	1.6%
46B	42,652	-1,145	-2.6%	**36.2%**	**54.1%**	7.2%	1.8%
46C	43,788	-9	0.0%	79.1%	14.0%	3.0%	1.8%
47A	44,637	840	1.9%	64.8%	22.1%	6.1%	5.3%
47B	44,408	611	1.4%	60.7%	32.8%	3.4%	1.5%
47C	43,908	111	0.3%	88.9%	4.1%	3.0%	2.1%

Figures in **bold** indicate majority-minority VAP, majority Black VAP, and majority Hispanic VAP districts.

Table A3. LRAC Senate Plan Demographics

District	Population	Deviation	Deviation %	% Non-Hispanic White VAP	% Black VAP	% Hispanic VAP	% Asian VAP
01	132,581	1,189	0.9%	88.3%	6.4%	2.1%	1.2%
02	128,391	-3,001	-2.3%	75.9%	14.0%	5.6%	2.6%
03	126,161	-5,231	-4.0%	57.8%	18.3%	15.3%	7.5%
04	126,536	-4,856	-3.7%	82.5%	4.9%	5.7%	4.6%
05	133,491	2,099	1.6%	85.9%	5.0%	4.0%	3.0%
06	131,282	-110	-0.1%	66.5%	19.4%	8.7%	2.6%
07	129,596	-1,796	-1.4%	77.5%	10.7%	3.2%	6.5%
08	128,487	-2,905	-2.2%	50.8%	33.4%	6.0%	8.5%
09	130,281	-1,111	-0.8%	57.6%	9.4%	5.2%	26.5%
10	126,173	-5,219	-4.0%	**32.5%**	**54.2%**	6.0%	6.9%
11	126,486	-4,906	-3.7%	57.9%	28.9%	5.0%	7.5%
12	131,907	515	0.4%	51.8%	25.8%	8.9%	12.3%
13	131,054	-338	-0.3%	**44.1%**	27.7%	9.9%	17.4%
14	127,947	-3,445	-2.6%	**43.5%**	28.5%	11.9%	15.6%
15	130,414	-978	-0.7%	**47.7%**	13.6%	9.8%	27.9%
16	132,983	1,591	1.2%	68.3%	6.5%	8.3%	15.4%
17	134,714	3,322	2.5%	**41.7%**	14.9%	20.5%	22.0%
18	127,768	-3,624	-2.8%	**45.2%**	16.0%	25.7%	12.3%
19	128,638	-2,754	-2.1%	**37.7%**	21.0%	24.7%	15.3%
20	130,259	-1,133	-0.9%	**33.0%**	35.5%	21.9%	9.7%
21	133,497	2,105	1.6%	**34.4%**	32.1%	19.7%	13.5%
22	136,451	5,059	3.9%	**15.5%**	48.9%	29.2%	6.9%
23	135,983	4,591	3.5%	**19.9%**	**68.3%**	7.5%	4.6%
24	135,504	4,112	3.1%	**5.9%**	**81.0%**	10.7%	3.1%
25	136,069	4,677	3.6%	**5.1%**	**85.6%**	7.7%	2.1%
26	135,704	4,312	3.3%	**7.1%**	**75.2%**	13.0%	5.0%
27	136,291	4,899	3.7%	50.5%	39.8%	5.1%	3.1%
28	136,503	5,111	3.9%	**38.3%**	**50.3%**	5.5%	4.8%
29	135,606	4,214	3.2%	73.0%	16.0%	4.7%	3.9%
30	126,540	-4,852	-3.7%	73.2%	12.4%	9.6%	3.0%

Figures in **bold** indicate majority-minority VAP and majority Black VAP districts.

District	Population	Deviation	Deviation %	% Non-Hispanic White VAP	% Black VAP	% Hispanic VAP	% Asian VAP
31	130,883	-509	-0.4%	77.9%	10.2%	4.9%	4.5%
32	135,064	3,672	2.8%	**43.8%**	35.9%	10.7%	8.6%
33	131,878	486	0.4%	72.9%	13.8%	5.7%	5.7%
34	131,935	543	0.4%	63.6%	24.4%	6.0%	4.4%
35	134,794	3,402	2.6%	87.2%	4.7%	2.9%	2.5%
36	134,994	3,602	2.7%	81.0%	9.6%	5.3%	1.8%
37	135,428	4,036	3.1%	66.8%	24.7%	5.3%	1.8%
38	134,250	2,858	2.2%	70.7%	20.5%	4.2%	2.9%
39	133,983	2,591	2.0%	**28.2%**	24.5%	26.7%	20.1%
40	126,162	-5,230	-4.0%	**23.5%**	**67.2%**	4.0%	4.9%
41	126,149	-5,243	-4.0%	**25.7%**	**66.3%**	3.8%	3.7%
42	127,603	-3,789	-2.9%	81.2%	7.2%	4.2%	5.5%
43	127,154	-4,238	-3.2%	**38.0%**	48.2%	4.8%	8.8%
44	132,982	1,590	1.2%	**38.5%**	44.4%	7.0%	9.1%
45	126,182	-5,210	-4.0%	**17.4%**	**75.1%**	5.2%	1.9%
46	126,149	-5,243	-4.0%	51.7%	26.1%	15.0%	6.1%
47	136,516	5,124	3.9%	**7.0%**	45.9%	44.9%	3.1%

Figures in **bold** indicate majority-minority VAP and majority Black VAP districts.

Table A4. LRAC House Plan Demographics

District	Population	Deviation	Deviation %	% Non-Hispanic White VAP	% Black VAP	% Hispanic VAP	% Asian VAP
01A	42,868	-929	-2.1	93.4	2.6	1.0	1.0
01B	44,733	936	2.1	85.3	9.9	1.4	1.3
01C	44,980	1,183	2.7	86.5	6.3	3.9	1.4
02A	84,500	-3,094	-3.5	80.3	10.7	4.5	2.5
	84,500	-3,094	-3.5	80.3	10.7	4.5	2.5
02B	43,891	94	0.2	66.2	21.3	8.0	2.8
03	126,161	-5,230	-4.0	57.8	18.3	15.3	7.5
	126,161	-5,230	-4.0	57.8	18.3	15.3	7.5
	126,161	-5,230	-4.0	57.8	18.3	15.3	7.5
04	126,536	-4,855	-3.7	82.5	4.9	5.7	4.6
	126,536	-4,855	-3.7	82.5	4.9	5.7	4.6
	126,536	-4,855	-3.7	82.5	4.9	5.7	4.6
05	133,491	2,100	1.6	85.9	5.0	4.0	3.0
	133,491	2,100	1.6	85.9	5.0	4.0	3.0
	133,491	2,100	1.6	85.9	5.0	4.0	3.0
06	131,282	-109	-0.1	66.5	19.4	8.7	2.6
	131,282	-109	-0.1	66.5	19.4	8.7	2.6
	131,282	-109	-0.1	66.5	19.4	8.7	2.6
07A	84,123	-3,471	-4.0	74.5	12.5	3.1	7.8
	84,123	-3,471	-4.0	74.5	12.5	3.1	7.8
07B	45,473	1,676	3.8	83.2	7.2	3.4	4.0
08	128,487	-2,904	-2.2	50.8	33.4	6.0	8.5
	128,487	-2,904	-2.2	50.8	33.4	6.0	8.5
	128,487	-2,904	-2.2	50.8	33.4	6.0	8.5
09A	85,573	-2,021	-2.3	61.0	8.6	5.6	23.5
	85,573	-2,021	-2.3	61.0	8.6	5.6	23.5
09B	44,708	911	2.1	51.3	11.0	4.3	32.2
10	126,173	-5,218	-4.0	**32.5**	**54.2**	6.0	6.9
	126,173	-5,218	-4.0	**32.5**	**54.2**	6.0	6.9
	126,173	-5,218	-4.0	**32.5**	**54.2**	6.0	6.9
11A	42,367	-1,430	-3.3	**34.0**	**51.2**	7.3	7.5
11B	84,119	-3,475	-4.0	69.9	17.7	3.8	7.5
	84,119	-3,475	-4.0	69.9	17.7	3.8	7.5
12A	86,473	-1,121	-1.3	50.6	25.2	7.7	15.7
	86,473	-1,121	-1.3	50.6	25.2	7.7	15.7
12B	45,434	1,637	3.7	53.9	27.0	11.4	5.7

Figures in **bold** indicate majority-minority VAP, majority Black VAP, and majority Hispanic VAP districts.

District	Population	Deviation	Deviation %	% Non-Hispanic White VAP	% Black VAP	% Hispanic VAP	% Asian VAP
13	131,054	-337	-0.3	**44.1**	27.7	9.9	17.4
	131,054	-337	-0.3	**44.1**	27.7	9.9	17.4
	131,054	-337	-0.3	**44.1**	27.7	9.9	17.4
14	127,947	-3,444	-2.6	**43.5**	28.5	11.9	15.6
	127,947	-3,444	-2.6	**43.5**	28.5	11.9	15.6
	127,947	-3,444	-2.6	**43.5**	28.5	11.9	15.6
15	130,414	-977	-0.7	**47.7**	13.6	9.8	27.9
	130,414	-977	-0.7	**47.7**	13.6	9.8	27.9
	130,414	-977	-0.7	**47.7**	13.6	9.8	27.9
16	132,983	1,592	1.2	68.3	6.5	8.3	15.4
	132,983	1,592	1.2	68.3	6.5	8.3	15.4
	132,983	1,592	1.2	68.3	6.5	8.3	15.4
17	134,714	3,323	2.5	**41.7**	14.9	20.5	22.0
	134,714	3,323	2.5	**41.7**	14.9	20.5	22.0
	134,714	3,323	2.5	**41.7**	14.9	20.5	22.0
18	127,768	-3,623	-2.8	**45.2**	16.0	25.7	12.3
	127,768	-3,623	-2.8	**45.2**	16.0	25.7	12.3
	127,768	-3,623	-2.8	**45.2**	16.0	25.7	12.3
19	128,638	-2,753	-2.1	**37.7**	21.0	24.7	15.3
	128,638	-2,753	-2.1	**37.7**	21.0	24.7	15.3
	128,638	-2,753	-2.1	**37.7**	21.0	24.7	15.3
20	130,259	-1,132	-0.9	**33.0**	35.5	21.9	9.7
	130,259	-1,132	-0.9	**33.0**	35.5	21.9	9.7
	130,259	-1,132	-0.9	**33.0**	35.5	21.9	9.7
21	133,497	2,106	1.6	**34.4**	32.1	19.7	13.5
	133,497	2,106	1.6	**34.4**	32.1	19.7	13.5
	133,497	2,106	1.6	**34.4**	32.1	19.7	13.5
22	136,451	5,060	3.9	**15.5**	48.9	29.2	6.9
	136,451	5,060	3.9	**15.5**	48.9	29.2	6.9
	136,451	5,060	3.9	**15.5**	48.9	29.2	6.9
23	135,983	4,592	3.5	**19.9**	**68.3**	7.5	4.6
	135,983	4,592	3.5	**19.9**	**68.3**	7.5	4.6
	135,983	4,592	3.5	**19.9**	**68.3**	7.5	4.6
24	135,504	4,113	3.1	**5.9**	**81.0**	10.7	3.1
	135,504	4,113	3.1	**5.9**	**81.0**	10.7	3.1
	135,504	4,113	3.1	**5.9**	**81.0**	10.7	3.1

Figures in **bold** indicate majority-minority VAP, majority Black VAP, and majority Hispanic VAP districts.

District	Population	Deviation	Deviation %	% Non-Hispanic White VAP	% Black VAP	% Hispanic VAP	% Asian VAP
25	136,069	4,678	3.6	**5.1**	**85.6**	7.7	2.1
	136,069	4,678	3.6	**5.1**	**85.6**	7.7	2.1
	136,069	4,678	3.6	**5.1**	**85.6**	7.7	2.1
26	135,704	4,313	3.3	**7.1**	**75.2**	13.0	5.0
	135,704	4,313	3.3	**7.1**	**75.2**	13.0	5.0
	135,704	4,313	3.3	**7.1**	**75.2**	13.0	5.0
27A	45,471	1,674	3.8	**24.1**	**64.9**	6.9	3.5
27B	45,304	1,507	3.4	51.8	38.9	5.0	2.9
27C	45,516	1,719	3.9	75.5	15.7	3.5	2.7
28	136,503	5,112	3.9	**38.3**	**50.3**	5.5	4.8
	136,503	5,112	3.9	**38.3**	**50.3**	5.5	4.8
	136,503	5,112	3.9	**38.3**	**50.3**	5.5	4.8
29A	45,464	1,667	3.8	82.1	10.5	2.6	2.2
29B	44,663	866	2.0	58.0	26.0	7.9	6.4
29C	45,479	1,682	3.8	78.5	11.8	3.7	3.3
30A	84,165	-3,429	-3.9	69.3	14.4	11.5	3.4
30A	84,165	-3,429	-3.9	69.3	14.4	11.5	3.4
30B	42,375	-1,422	-3.2	81.3	8.3	5.7	2.2
31	130,883	-508	-0.4	77.9	10.2	4.9	4.5
	130,883	-508	-0.4	77.9	10.2	4.9	4.5
	130,883	-508	-0.4	77.9	10.2	4.9	4.5
32	135,064	3,673	2.8	**43.8**	35.9	10.7	8.6
	135,064	3,673	2.8	**43.8**	35.9	10.7	8.6
	135,064	3,673	2.8	**43.8**	35.9	10.7	8.6
33A	42,189	-1,608	-3.7	54.9	28.2	7.4	8.1
33B	45,469	1,672	3.8	80.3	8.1	4.8	4.8
33C	44,220	423	1.0	82.5	5.9	5.0	4.4
34A	86,564	-1,030	-1.2	55.5	32.4	6.6	3.8
34A	86,564	-1,030	-1.2	55.5	32.4	6.6	3.8
34B	45,371	1,574	3.6	78.8	9.4	4.7	5.4
35A	89,285	1,691	1.9	87.9	4.0	2.7	3.0
35A	89,285	1,691	1.9	87.9	4.0	2.7	3.0
35B	45,509	1,712	3.9	85.7	6.3	3.4	1.6
36	134,994	3,603	2.7	81.0	9.6	5.3	1.8
	134,994	3,603	2.7	81.0	9.6	5.3	1.8
	134,994	3,603	2.7	81.0	9.6	5.3	1.8

Figures in **bold** indicate majority-minority VAP, majority Black VAP, and majority Hispanic VAP districts.

District	Population	Deviation	Deviation %	% Non-Hispanic White VAP	% Black VAP	% Hispanic VAP	% Asian VAP
37A	44,467	670	1.5	**38.6**	**51.9**	7.0	1.7
37B	90,961	3,367	3.8	79.5	12.5	4.5	1.8
	90,961	3,367	3.8	79.5	12.5	4.5	1.8
38A	45,483	1,686	3.8	61.6	31.9	3.3	1.6
38B	44,005	208	0.5	62.1	24.7	6.3	5.4
38C	44,762	965	2.2	88.3	4.7	3.1	1.9
39	133,983	2,592	2.0	**28.2**	24.5	26.7	20.1
	133,983	2,592	2.0	**28.2**	24.5	26.7	20.1
	133,983	2,592	2.0	**28.2**	24.5	26.7	20.1
40	126,162	-5,229	-4.0	**23.5**	**67.2**	4.0	4.9
	126,162	-5,229	-4.0	**23.5**	**67.2**	4.0	4.9
	126,162	-5,229	-4.0	**23.5**	**67.2**	4.0	4.9
41	126,149	-5,242	-4.0	**25.7**	**66.3**	3.8	3.7
	126,149	-5,242	-4.0	**25.7**	**66.3**	3.8	3.7
	126,149	-5,242	-4.0	**25.7**	**66.3**	3.8	3.7
42A	42,855	-942	-2.2	89.1	2.5	2.3	3.9
42B	42,068	-1,729	-3.9	64.3	16.4	7.7	10.6
42C	42,680	-1,117	-2.6	90.1	2.8	2.6	2.0
43A	84,937	-2,657	-3.0	**25.9**	**60.1**	4.4	9.3
43A	84,937	-2,657	-3.0	**25.9**	**60.1**	4.4	9.3
43B	42,217	-1,580	-3.6	62.4	23.9	5.5	7.7
44A	45,093	1,296	3.0	54.8	21.7	10.5	11.4
44B	87,889	295	0.3	**30.5**	**55.5**	5.3	8.1
44B	87,889	295	0.3	**30.5**	**55.5**	5.3	8.1
45	126,182	-5,209	-4.0	**17.4**	**75.1**	5.2	1.9
	126,182	-5,209	-4.0	**17.4**	**75.1**	5.2	1.9
	126,182	-5,209	-4.0	**17.4**	**75.1**	5.2	1.9
46	126,149	-5,242	-4.0	51.7	26.1	15.0	6.1
	126,149	-5,242	-4.0	51.7	26.1	15.0	6.1
	126,149	-5,242	-4.0	51.7	26.1	15.0	6.1
47A	91,043	3,449	3.9	**7.8**	**54.7**	35.9	2.5
47A	91,043	3,449	3.9	**7.8**	**54.7**	35.9	2.5
47B	45,473	1,676	3.8	**5.3**	28.2	**63.3**	4.4

Figures in **bold** indicate majority-minority VAP, majority Black VAP, and majority Hispanic VAP districts.

Table A5. MCRC Senate Plan Compactness Statistics

District	Reock	Schwartz-berg	Alternate Schwartz-berg	Polsby-Popper	Population Polygon	Population Circle	Area/ Convex Hull	Ehrenberg	Perimeter
01	0.17	2.35	2.92	0.12	0.84	0.48	0.73	0.28	377.48
02	0.36	1.78	1.97	0.26	0.80	0.65	0.41	0.29	116.43
03	0.51	1.98	2.24	0.20	0.48	0.78	0.33	0.25	184.09
04	0.38	1.74	1.94	0.27	0.90	0.75	0.71	0.30	56.98
05	0.45	1.53	1.72	0.34	0.81	0.75	0.45	0.51	119.51
06	0.44	2.01	2.21	0.21	0.25	0.70	0.17	0.27	130.01
07	0.56	1.55	1.73	0.33	0.82	0.81	0.51	0.55	45.28
08	0.49	1.77	2.01	0.25	0.72	0.69	0.52	0.33	42.52
09	0.49	1.46	1.52	0.43	0.90	0.83	0.64	0.46	25.79
10	0.41	1.51	1.61	0.38	0.82	0.79	0.38	0.36	41.75
11	0.48	1.59	1.67	0.36	0.80	0.77	0.51	0.40	31.94
12	0.38	1.87	1.92	0.27	0.75	0.65	0.43	0.36	29.96
13	0.26	2.20	2.30	0.19	0.73	0.60	0.37	0.17	31.74
14	0.57	1.38	1.61	0.38	0.83	0.80	0.45	0.43	84.51
15	0.40	1.71	1.76	0.32	0.71	0.73	0.54	0.40	41.85
16	0.46	1.55	1.56	0.41	0.75	0.79	0.55	0.37	27.89
17	0.26	1.77	2.17	0.21	0.55	0.69	0.21	0.23	63.16
18	0.60	1.30	1.39	0.52	0.80	0.86	0.43	0.55	88.99
19	0.51	1.69	1.73	0.33	0.68	0.69	0.48	0.34	32.80
20	0.62	1.16	1.18	0.72	0.94	0.92	0.79	0.58	42.40
21	0.37	1.55	1.60	0.39	0.73	0.76	0.42	0.33	21.95
22	0.55	1.31	1.32	0.58	0.85	0.90	0.53	0.46	18.70
23	0.34	1.49	1.50	0.45	0.91	0.89	0.47	0.42	23.54
24	0.29	1.49	1.52	0.43	0.78	0.84	0.24	0.28	29.69
25	0.44	1.39	1.41	0.51	0.84	0.84	0.47	0.46	51.92
26	0.53	1.34	1.45	0.48	0.93	0.86	0.62	0.46	39.13
27	0.36	1.77	1.86	0.29	0.64	0.67	0.38	0.31	48.41
28	0.56	1.51	1.57	0.40	0.72	0.80	0.47	0.38	42.24
29	0.57	1.53	1.63	0.38	0.79	0.81	0.50	0.38	58.45
30	0.58	1.37	1.41	0.50	0.93	0.85	0.80	0.59	52.12
31	0.30	1.46	1.54	0.42	0.92	0.80	0.26	0.29	125.87
32	0.37	1.70	1.81	0.30	0.73	0.74	0.38	0.40	50.17
33	0.44	1.97	2.07	0.23	0.80	0.76	0.50	0.32	30.95
34	0.34	2.10	2.22	0.20	0.73	0.75	0.42	0.25	37.90
35	0.35	2.09	2.18	0.21	0.65	0.68	0.37	0.19	47.58

District	Reock	Schwartz-berg	Alternate Schwartz-berg	Polsby-Popper	Population Polygon	Population Circle	Area/ Convex Hull	Ehrenberg	Perimeter
36	0.51	1.42	1.57	0.40	0.78	0.84	0.42	0.43	50.90
37	0.48	1.50	1.55	0.41	0.82	0.79	0.54	0.56	35.14
38	0.40	1.48	1.60	0.39	0.83	0.76	0.55	0.34	51.58
39	0.44	1.64	1.79	0.31	0.79	0.80	0.38	0.43	100.73
40	0.53	1.15	1.39	0.52	0.93	0.89	0.84	0.48	94.07
41	0.36	1.41	1.50	0.45	0.85	0.86	0.65	0.40	166.12
42	0.46	1.59	1.82	0.30	0.87	0.75	0.65	0.43	70.48
43	0.48	1.67	1.94	0.26	0.66	0.74	0.46	0.40	85.94
44	0.35	1.96	2.24	0.20	0.43	0.72	0.34	0.28	179.32
45	0.34	1.57	1.68	0.35	0.86	0.84	0.06	0.53	216.70
46	0.61	1.42	1.52	0.43	0.77	0.86	0.38	0.64	231.58
47	0.31	1.57	1.68	0.35	0.78	0.85	0.62	0.39	229.20

Table A6. MCRC House Plan Compactness Statistics

District	Reock	Schwartz-berg	Alternate Schwartz-berg	Polsby-Popper	Population Polygon	Population Circle	Area/ Convex Hull	Ehrenberg	Perimeter
01A	0.44	1.33	1.56	0.41	0.87	0.88	0.77	0.50	150.7
01B	0.59	1.42	1.64	0.37	0.89	0.84	0.84	0.47	57.0
01C	0.18	2.31	2.90	0.12	0.56	0.51	0.42	0.26	228.1
02A	0.36	3.23	4.11	0.06	0.78	0.62	0.63	0.32	50.9
02B	0.27	2.58	2.88	0.12	0.44	0.73	0.37	0.25	90.1
02C	0.31	1.94	2.21	0.20	0.53	0.62	0.15	0.27	107.4
03A	0.36	1.82	1.98	0.25	0.28	0.67	0.19	0.26	88.5
03B	0.55	1.55	1.74	0.33	0.80	0.78	0.24	0.41	103.6
03C	0.49	1.63	1.77	0.32	0.80	0.78	0.52	0.38	62.1
04A	0.46	1.58	1.79	0.31	0.94	0.76	0.53	0.48	25.6
04B	0.47	1.62	1.71	0.34	0.70	0.72	0.50	0.33	23.0
04C	0.40	1.72	1.86	0.29	0.83	0.66	0.56	0.26	40.7
05A	0.34	1.74	1.96	0.26	0.63	0.63	0.27	0.31	94.1
05B	0.41	1.52	1.56	0.41	0.89	0.75	0.60	0.33	51.7
05C	0.35	1.40	1.51	0.44	0.79	0.84	0.33	0.34	57.0
06A	0.36	1.62	1.76	0.32	0.20	0.74	0.09	0.41	83.7
06B	0.42	1.54	1.69	0.35	0.55	0.77	0.26	0.42	52.1
06C	0.57	1.52	1.64	0.37	0.80	0.84	0.52	0.45	25.9
07A	0.44	1.63	1.84	0.30	0.62	0.73	0.29	0.36	38.4
07B	0.38	1.72	1.83	0.30	0.59	0.74	0.27	0.36	22.7
07C	0.23	1.60	1.62	0.38	0.87	0.80	0.40	0.23	15.9
08	0.49	1.77	2.01	0.25	0.72	0.69	0.52	0.33	42.5
09	0.49	1.46	1.52	0.43	0.90	0.83	0.64	0.46	25.8
10	0.41	1.51	1.61	0.38	0.82	0.79	0.38	0.36	41.8
11	0.48	1.59	1.67	0.36	0.80	0.77	0.51	0.40	31.9
12	0.38	1.87	1.92	0.27	0.75	0.65	0.43	0.36	30.0

District	Reock	Schwartz-berg	Alternate Schwartz-berg	Polsby-Popper	Population Polygon	Population Circle	Area/Convex Hull	Ehrenberg	Perimeter
13A	0.46	1.76	1.80	0.31	0.80	0.70	0.62	0.47	13.1
13B	0.32	1.72	1.81	0.30	0.79	0.77	0.42	0.39	14.7
13C	0.46	1.54	1.60	0.39	0.84	0.82	0.44	0.43	13.5
14A	0.58	1.23	1.56	0.41	0.95	0.85	0.80	0.61	45.7
14B	0.49	1.28	1.44	0.48	0.74	0.87	0.30	0.51	58.7
14C	0.52	1.47	1.62	0.38	0.82	0.77	0.58	0.47	24.8
15	0.40	1.71	1.76	0.32	0.71	0.73	0.54	0.40	41.8
16A	0.50	1.27	1.28	0.61	0.89	0.88	0.63	0.51	12.7
16B	0.50	1.38	1.39	0.52	0.78	0.80	0.51	0.52	13.3
16C	0.55	1.28	1.29	0.60	0.89	0.93	0.52	0.51	14.7
17	0.26	1.77	2.17	0.21	0.55	0.69	0.21	0.23	63.2
18A	0.55	1.32	1.37	0.53	0.67	0.88	0.29	0.53	72.6
18B	0.59	1.40	1.59	0.40	0.81	0.81	0.50	0.42	51.8
18C	0.52	1.42	1.52	0.43	0.78	0.83	0.36	0.35	24.8
19	0.51	1.69	1.73	0.33	0.68	0.69	0.48	0.34	32.8
20A	0.41	1.50	1.53	0.43	0.72	0.74	0.37	0.31	40.8
20B	0.56	1.23	1.25	0.64	0.92	0.90	0.50	0.68	16.0
20C	0.30	1.50	1.55	0.42	0.78	0.79	0.37	0.35	31.8
21	0.37	1.55	1.60	0.39	0.73	0.76	0.42	0.33	22.0
22	0.55	1.31	1.32	0.58	0.85	0.90	0.53	0.46	18.7
23	0.34	1.49	1.50	0.45	0.91	0.89	0.47	0.42	23.5
24	0.29	1.49	1.52	0.43	0.78	0.84	0.24	0.28	29.7
25A	0.53	1.24	1.24	0.65	0.94	0.92	0.63	0.54	12.3
25B	0.47	1.49	1.55	0.42	0.66	0.70	0.51	0.35	25.8
25C	0.58	1.20	1.22	0.68	0.89	0.95	0.42	0.64	38.2

District	Reock	Schwartz-berg	Alternate Schwartz-berg	Polsby-Popper	Population Polygon	Population Circle	Area/ Convex Hull	Ehrenberg	Perimeter
26	0.53	1.34	1.45	0.48	0.93	0.86	0.62	0.46	39.1
27A	0.41	1.60	1.68	0.35	0.75	0.74	0.32	0.38	26.0
27B	0.61	1.29	1.42	0.49	0.87	0.85	0.71	0.55	21.0
27C	0.35	1.50	1.54	0.42	0.80	0.76	0.35	0.33	22.9
28A	0.36	1.52	1.60	0.39	0.86	0.76	0.43	0.42	19.2
28B	0.67	1.24	1.27	0.62	0.90	0.91	0.73	0.70	17.5
28C	0.47	1.45	1.52	0.43	0.72	0.84	0.30	0.45	30.0
29A	0.46	1.34	1.41	0.50	0.82	0.87	0.42	0.52	25.3
29B	0.58	1.25	1.30	0.60	0.90	0.85	0.67	0.72	23.7
29C	0.46	1.73	1.88	0.28	0.64	0.66	0.35	0.36	47.4
30A	0.45	1.24	1.25	0.64	0.98	0.92	0.39	0.57	31.5
30B	0.33	2.08	2.25	0.20	0.46	0.65	0.35	0.16	54.6
30C	0.52	1.56	1.80	0.31	0.93	0.80	0.83	0.48	21.8
31A	0.57	1.28	1.38	0.53	0.72	0.88	0.30	0.71	67.9
31B	0.40	1.53	1.62	0.38	0.77	0.78	0.60	0.48	73.0
31C	0.38	1.37	1.42	0.49	0.95	0.84	0.44	0.34	66.8
32A	0.37	1.50	1.57	0.41	0.84	0.78	0.37	0.56	20.4
32B	0.34	1.52	1.63	0.38	0.82	0.80	0.29	0.34	31.6
32C	0.35	1.50	1.54	0.42	0.75	0.74	0.44	0.35	22.7
33A	0.27	1.59	1.61	0.39	0.90	0.77	0.35	0.30	12.9
33B	0.55	1.43	1.53	0.43	0.86	0.83	0.61	0.42	15.8
33C	0.42	1.86	1.94	0.27	0.67	0.69	0.51	0.36	14.2
34A	0.52	1.60	1.74	0.33	0.77	0.79	0.58	0.45	14.9
34B	0.24	2.35	2.44	0.17	0.49	0.61	0.26	0.22	25.6
34C	0.55	1.24	1.25	0.64	0.93	0.91	0.64	0.51	13.1
35	0.35	2.09	2.18	0.21	0.65	0.68	0.37	0.19	47.6
36	0.51	1.42	1.57	0.40	0.78	0.84	0.42	0.43	50.9
37	0.48	1.50	1.55	0.41	0.82	0.79	0.54	0.56	35.1
38	0.40	1.48	1.60	0.39	0.83	0.76	0.55	0.34	51.6

District	Reock	Schwartz-berg	Alternate Schwartz-berg	Polsby-Popper	Population Polygon	Population Circle	Area/ Convex Hull	Ehrenberg	Perimeter
39	0.44	1.64	1.79	0.31	0.79	0.80	0.38	0.43	100.7
40A	0.43	1.30	1.59	0.40	0.60	0.80	0.31	0.47	93.3
40B	0.35	1.61	1.70	0.35	0.76	0.79	0.42	0.28	32.4
40C	0.35	1.67	1.75	0.32	0.82	0.77	0.43	0.25	48.0
41A	0.62	1.30	1.41	0.51	0.87	0.89	0.51	0.55	97.9
41B	0.46	1.44	1.66	0.36	0.57	0.81	0.36	0.33	94.3
41C	0.36	1.47	1.62	0.38	0.78	0.80	0.60	0.37	105.3
42A	0.30	1.60	1.80	0.31	0.73	0.76	0.21	0.30	48.8
42B	0.48	1.51	1.59	0.40	0.85	0.82	0.69	0.47	21.9
42C	0.40	1.62	1.82	0.30	0.62	0.70	0.33	0.29	43.4
43A	0.27	1.71	2.06	0.24	0.87	0.70	0.34	0.21	63.6
43B	0.51	1.32	1.39	0.52	0.81	0.87	0.40	0.60	31.5
43C	0.51	1.38	1.47	0.46	0.77	0.85	0.44	0.52	32.4
44A	0.29	1.65	1.78	0.31	0.77	0.79	0.18	0.35	90.8
44B	0.40	1.51	1.74	0.33	0.66	0.79	0.19	0.31	80.0
44C	0.38	1.79	2.03	0.24	0.78	0.75	0.46	0.38	83.4
45A	0.45	1.50	1.68	0.35	0.74	0.83	0.42	0.65	91.3
45B	0.44	1.79	1.95	0.26	0.70	0.71	0.48	0.21	179.9
45C	0.35	1.63	1.86	0.29	0.92	0.73	0.22	0.33	132.4
46A	0.46	1.43	1.58	0.40	0.84	0.80	0.43	0.45	131.1
46B	0.17	2.84	3.02	0.11	0.64	0.45	0.39	0.17	127.9
46C	0.42	2.24	2.41	0.17	0.39	0.69	0.19	0.31	292.0
47A	0.32	2.19	2.42	0.17	0.62	0.66	0.53	0.24	57.5
47B	0.28	1.49	1.61	0.39	0.90	0.84	0.25	0.30	192.1
47C	0.31	1.60	1.69	0.35	0.78	0.83	0.37	0.35	102.3

Table A7. LRAC Senate Plan Compactness Statistics

District	Reock	Schwartz-berg	Alternate Schwartz-berg	Polsby-Popper	Population Polygon	Population Circle	Area/ Convex Hull	Ehrenberg	Perimeter
1	0.16	2.18	2.70	0.14	0.93	0.61	0.63	0.29	343.39
2	0.28	2.13	2.51	0.16	0.76	0.60	0.32	0.20	165.03
3	0.54	1.66	1.87	0.29	0.93	0.81	0.81	0.54	53.15
4	0.62	1.94	2.20	0.21	0.47	0.82	0.39	0.19	178.34
5	0.41	2.23	2.67	0.14	0.74	0.61	0.49	0.26	171.60
6	0.61	1.15	1.16	0.74	0.98	0.94	0.77	0.58	41.64
7	0.24	2.15	2.30	0.19	0.49	0.65	0.13	0.24	115.37
8	0.40	1.96	2.03	0.24	0.65	0.65	0.42	0.35	37.33
9	0.27	1.86	2.05	0.24	0.59	0.67	0.13	0.29	99.92
10	0.21	2.21	2.60	0.15	0.37	0.55	0.11	0.22	92.49
11	0.63	1.53	1.58	0.40	0.69	0.87	0.42	0.67	47.95
12	0.14	2.87	3.01	0.11	0.49	0.43	0.15	0.17	70.78
13	0.32	1.94	2.11	0.22	0.67	0.65	0.36	0.36	61.80
14	0.32	1.78	1.97	0.26	0.59	0.72	0.15	0.20	75.82
15	0.45	1.48	1.58	0.40	0.47	0.81	0.28	0.42	75.68
16	0.54	1.54	1.68	0.36	0.78	0.73	0.69	0.30	38.29
17	0.34	2.08	2.25	0.20	0.75	0.70	0.49	0.21	39.80
18	0.41	1.64	1.76	0.32	0.80	0.83	0.45	0.43	28.27
19	0.27	2.06	2.28	0.19	0.66	0.69	0.26	0.22	50.93
20	0.42	1.65	1.72	0.34	0.73	0.76	0.46	0.30	26.60
21	0.29	2.56	2.83	0.13	0.42	0.50	0.20	0.14	82.78
22	0.45	2.80	2.94	0.12	0.61	0.64	0.48	0.24	56.98
23	0.24	2.38	2.76	0.13	0.44	0.55	0.15	0.22	104.10
24	0.22	3.18	3.46	0.08	0.58	0.57	0.25	0.10	76.13
25	0.44	2.25	2.36	0.18	0.58	0.67	0.38	0.38	67.70
26	0.32	1.81	1.94	0.27	0.78	0.77	0.47	0.32	60.08
27	0.46	1.65	1.82	0.30	0.69	0.79	0.42	0.39	135.19
28	0.50	1.50	1.76	0.32	0.75	0.72	0.59	0.36	151.34
29	0.40	1.47	1.56	0.41	0.90	0.83	0.81	0.32	160.57
30	0.49	1.54	1.66	0.36	0.88	0.84	0.50	0.42	89.77
31	0.41	1.93	1.96	0.26	0.55	0.72	0.33	0.39	78.82
32	0.36	1.80	1.88	0.28	0.79	0.75	0.41	0.29	48.93
33	0.34	2.50	2.67	0.14	0.50	0.57	0.29	0.18	106.47
34	0.44	1.63	1.74	0.33	0.76	0.76	0.59	0.38	89.25
35	0.41	1.66	1.76	0.32	0.65	0.85	0.46	0.36	120.72

District	Reock	Schwartz-berg	Alternate Schwartz-berg	Polsby-Popper	Population Polygon	Population Circle	Area/ Convex Hull	Ehrenberg	Perimeter
36	0.32	1.57	1.66	0.36	0.86	0.86	0.06	0.51	211.28
37	0.56	1.49	1.61	0.39	0.79	0.85	0.45	0.62	248.53
38	0.31	1.60	1.73	0.33	0.79	0.86	0.63	0.39	235.40
39	0.46	2.06	2.17	0.21	0.62	0.63	0.52	0.22	41.46
40	0.46	1.74	1.78	0.32	0.81	0.81	0.51	0.44	23.84
41	0.38	1.71	1.73	0.33	0.68	0.73	0.31	0.18	28.00
42	0.46	2.15	2.39	0.18	0.46	0.69	0.20	0.37	162.08
43	0.35	1.76	1.82	0.30	0.82	0.78	0.45	0.29	24.80
44	0.26	1.88	1.94	0.27	0.58	0.58	0.22	0.20	37.45
45	0.47	1.51	1.52	0.43	0.82	0.82	0.45	0.39	21.75
46	0.59	1.32	1.33	0.57	0.79	0.90	0.50	0.61	26.61
47	0.27	2.72	2.81	0.13	0.52	0.47	0.37	0.23	43.07

Table A8. LRAC House Plan Compactness Statistics

District	Reock	Schwartz-berg	Alternate Schwartz-berg	Polsby-Popper	Population Polygon	Population Circle	Area/ Convex Hull	Ehrenberg	Perimeter
01A	0.43	1.49	1.74	0.33	0.82	0.85	0.74	0.51	166.72
01B	0.37	1.71	1.97	0.26	0.88	0.80	0.80	0.40	74.69
01C	0.17	2.04	2.59	0.15	0.77	0.66	0.43	0.30	191.74
02A	0.27	2.32	2.72	0.13	0.51	0.58	0.22	0.17	175.65
02B	0.37	3.22	4.07	0.06	0.78	0.63	0.63	0.32	50.90
3	0.54	1.66	1.87	0.29	0.93	0.81	0.81	0.54	53.15
4	0.62	1.94	2.20	0.21	0.47	0.82	0.39	0.19	178.34
5	0.41	2.23	2.67	0.14	0.74	0.61	0.49	0.26	171.60
6	0.61	1.15	1.16	0.74	0.98	0.94	0.77	0.58	41.64
07A	0.37	1.83	2.01	0.25	0.52	0.76	0.19	0.25	70.97
07B	0.19	2.05	2.24	0.20	0.43	0.59	0.11	0.27	79.86
8	0.40	1.96	2.03	0.24	0.65	0.65	0.42	0.35	37.33
09A	0.25	2.03	2.23	0.20	0.52	0.65	0.11	0.24	102.57
09B	0.36	1.93	2.06	0.24	0.66	0.65	0.34	0.23	32.61
10	0.21	2.21	2.60	0.15	0.37	0.55	0.11	0.22	92.49
11A	0.25	2.28	2.46	0.17	0.65	0.55	0.27	0.21	41.65
11B	0.52	1.73	1.84	0.30	0.63	0.79	0.38	0.49	46.17
12A	0.25	1.96	2.13	0.22	0.62	0.62	0.31	0.27	39.83
12B	0.23	2.44	2.55	0.15	0.51	0.44	0.26	0.24	36.40

District	Reock	Schwartz-berg	Alternate Schwartz-berg	Polsby-Popper	Population Polygon	Population Circle	Area/ Convex Hull	Ehrenberg	Perimeter
13	0.32	1.94	2.11	0.22	0.66	0.65	0.36	0.36	61.80
14	0.32	1.78	1.97	0.26	0.59	0.72	0.15	0.20	75.82
15	0.45	1.48	1.58	0.40	0.47	0.81	0.28	0.42	75.68
16	0.54	1.54	1.68	0.36	0.78	0.73	0.69	0.30	38.29
17	0.34	2.08	2.25	0.20	0.75	0.70	0.49	0.21	39.80
18	0.41	1.64	1.76	0.32	0.80	0.83	0.45	0.43	28.27
19	0.27	2.06	2.28	0.19	0.66	0.69	0.26	0.22	50.93
20	0.42	1.65	1.72	0.34	0.73	0.76	0.46	0.30	26.60
21	0.29	2.56	2.83	0.13	0.42	0.50	0.20	0.14	82.78
22	0.45	2.80	2.94	0.12	0.61	0.64	0.49	0.24	56.98
23	0.24	2.38	2.76	0.13	0.44	0.55	0.15	0.22	104.10
24	0.22	3.18	3.46	0.08	0.58	0.57	0.25	0.10	76.13

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District	Reock	Schwartz-berg	Alternate Schwartz-berg	Polsby-Popper	Population Polygon	Population Circle	Area/ Convex Hull	Ehrenberg	Perimeter
25	0.44	2.25	2.36	0.18	0.58	0.67	0.38	0.38	67.70
26	0.32	1.81	1.94	0.27	0.78	0.77	0.47	0.32	60.08
27A	0.33	1.75	1.85	0.29	0.55	0.67	0.29	0.40	58.70
27B	0.38	1.95	2.22	0.20	0.52	0.61	0.27	0.30	92.09
27C	0.51	1.54	1.72	0.34	0.78	0.87	0.64	0.55	91.13
28	0.50	1.50	1.76	0.32	0.75	0.72	0.59	0.36	151.34
29A	0.46	1.44	1.56	0.41	0.76	0.75	0.52	0.51	87.92
29B	0.36	1.46	1.53	0.43	0.77	0.80	0.63	0.42	99.00
29C	0.37	2.06	2.27	0.19	0.44	0.63	0.34	0.25	129.14
30A	0.44	1.50	1.61	0.39	0.87	0.79	0.60	0.44	45.31
30B	0.65	1.42	1.52	0.43	0.76	0.86	0.53	0.57	70.16
31	0.41	1.93	1.96	0.26	0.55	0.72	0.33	0.39	78.82
32	0.36	1.80	1.88	0.28	0.80	0.75	0.41	0.29	48.93
33A	0.39	1.87	2.01	0.25	0.84	0.64	0.70	0.24	25.33
33B	0.40	1.77	1.91	0.27	0.59	0.77	0.20	0.28	58.39
33C	0.28	1.76	1.84	0.29	0.76	0.78	0.29	0.45	40.80
34A	0.41	1.40	1.47	0.46	0.88	0.86	0.40	0.41	72.21
34B	0.41	1.60	1.72	0.34	0.71	0.76	0.55	0.48	25.84
35A	0.66	1.47	1.57	0.41	0.73	0.89	0.52	0.52	86.12
35B	0.55	1.57	1.64	0.37	0.85	0.82	0.59	0.64	67.73
36	0.32	1.57	1.66	0.36	0.86	0.86	0.06	0.51	211.28

District	Reock	Schwartz-berg	Alternate Schwartz-berg	Polsby-Popper	Population Polygon	Population Circle	Area/ Convex Hull	Ehrenberg	Perimeter
37A	0.18	3.97	4.64	0.05	0.63	0.38	0.40	0.11	202.88
37B	0.52	2.27	2.55	0.15	0.57	0.80	0.30	0.21	378.55
38A	0.29	1.60	1.85	0.29	0.78	0.81	0.31	0.35	203.79
38B	0.28	2.67	3.04	0.11	0.64	0.60	0.53	0.14	58.95
38C	0.41	1.84	2.13	0.22	0.74	0.70	0.41	0.21	164.43
39	0.46	2.06	2.17	0.21	0.62	0.63	0.52	0.22	41.46
40	0.46	1.74	1.78	0.32	0.81	0.81	0.50	0.44	23.84
41	0.38	1.71	1.73	0.33	0.68	0.73	0.31	0.18	28.00
42A	0.50	1.63	1.72	0.34	0.48	0.79	0.26	0.59	92.12
42B	0.23	2.60	2.85	0.12	0.59	0.49	0.41	0.17	39.30
42C	0.36	2.09	2.38	0.18	0.52	0.73	0.31	0.23	94.16
43A	0.43	1.62	1.66	0.36	0.86	0.83	0.49	0.51	17.15
43B	0.58	1.40	1.45	0.47	0.82	0.81	0.58	0.60	12.84
44A	0.17	1.88	1.90	0.28	0.61	0.58	0.21	0.20	19.44
44B	0.22	2.22	2.27	0.19	0.53	0.57	0.20	0.26	37.24
45	0.47	1.51	1.52	0.43	0.81	0.82	0.45	0.39	21.75
46	0.59	1.32	1.33	0.57	0.79	0.90	0.51	0.61	26.61
47A	0.28	2.10	2.13	0.22	0.55	0.59	0.38	0.30	28.45
47B	0.24	2.27	2.43	0.17	0.72	0.58	0.33	0.20	18.20