2020 Census Redistricting Study: Washington County

Date: 2022-08-02 (PRELIMINARY STUDY MATERIALS v9)





Fall colors in vines at the Tualatin Estate Vineyard (*Oregon State Archives*)

Background

The Washington County Charter, Chapter VIII, section 84 requires that Commissioner districts be reapportioned after the decennial reapportionment of the state legislative districts. The Oregon Supreme Court approved the reapportionment of the state districts effective January 1, 2022. A review of the 2020 Census data indicates Washington County commissioner districts must be reapportioned to achieve balance between districts. The Washington County Reapportionment Official requested from the Population Research Center (PRC) a proposal for five options for new boundaries that comply with the requirements in the County Charter, the Secretary of State directive dated 09/09/2021, and additional factors. This preliminary study describes the data and methodology used to conduct the reapportionment analysis, along with the five proposals in preliminary form (item 1.g in the Statement of Work).

Data

The Public Law 94-171 Redistricting Data File from the 2020 Census is the primary data source used for Washington County reapportionment. These data are limited to the total resident population by race/ethnicity and voting age (<18 or 18+). The analysis was conducted during census tabulation block level geography, which is the smallest geographic unit at which population and housing counts are available. Block boundaries for the 2020 Census were obtained from the US Census Bureau TIGER/Line GIS files. Blocks do not cross county lines, and no subdivision of blocks was necessary in the drawing of the proposals.

GIS data were consulted in development of the proposals, including UGB boundaries, school district boundaries, city limits, parks and recreation districts, and urban/rural areas (defined by the US Census Bureau from the 2010 census; new urban/rural classifications may come into effect in 2023 but were not available at time of writing). These data were obtained from the Washington County GIS or from the Oregon Spatial Data Library. Socioeconomic data were obtained from the 2016-2020 5-year summary file of the American Community Survey (ACS). Data are available at the county, city, tract, and block group level, not for individual blocks. The reliability of data and block group and tract levels varies due to the ACS sample size and design. To calculate income statistics for each current and proposed district, the ACS table B19001 was used from the 2016-2020 5-year ACS. Each tract was assigned to a single district based on its population weighted centroid, and statistics were combined for all tracts according to their assigned district. This method produces not an exact match, but an approximation.

Methodology

PRC developed a Geographic Information System (GIS) workflow to determine the current population of each board member zone and the total population of the district, and to generate new boundary proposals that are as equal in population as feasible, with the following guiding principles:

Proposal	Conceptual Goals
#	
1	Continuity with current boundaries. Minimal changes to achieve
	balance, following physical geography.
2b	Concentration of rural/urban areas. This scenario would have District 1
	with no rural area and minimize combinations of rural and urban areas.
3	Diffusion of rural areas. This scenario would have rural areas within
	each district.

4	Emphasis on geographic, political, and community boundaries: minimize
	splits of school districts, park districts, UGBs, and avoid concentration
	of population by SES.
5	Minimize city splits; consider UPAAs for delineating boundaries;
	northwestern expansion of D2 and D3 and eastern expansion of D4; keep
	North Plains, Gaston, Forest Grove, and Cornelius in one district.

Results

The population of Washington County as of the 2020 Census was 600,372 residents, translating into a target population district per district of 150,093. District 2 deviates the most from that target, at more than 10,000 persons over, whereas the other districts are below by 3-4,000 residents and will need to add population to achieve parity (**Table 1**).

Table 1: Population of Washington County Commissioner Districts (2020 Census)

Baseline: Current Districts	1	2	3	4	TOTAL	AVERAGE
TOTAL Population	147,203	160,402	146,891	145,876	600,372	150,093
Deviation:	-2,890	10,309	-3,202	-4,217		
Percent	-1.9%	6.9%	-2.1%	-2.8%		
Non-Hispanic, by race:						
White	83,586	92,927	102,850	85,869	365,232	91,308
Black	4,363	3,821	2,399	2,180	12,763	3,191
American Indian/Alaska Native (AIAN)	558	541	631	686	2,416	604
Asian	16,162	32,333	9,965	9,970	68,430	17,108
Native Hawaiian or Pacific Islander (NHPI)	923	596	1214	507	3,240	810
Other	826	877	652	741	3,096	774
Two or more races, by race:						
Black and White	1,470	1,336	1,222	876		
AIAN and White	1,943	1,694	2,051	2,290		
Asian and White	3,184	3,835	3,092	2,097		
Other combinations	3,198	3,418	3,035	2,812		
Hispanic or Latino:						
(Any race)	30,990	19,024	19,780	37,848	107,642	26,911

Proposal 1 ("Continuity") makes a minimal set of changes that attains balance, following physical or political boundaries as appropriate. District 1 adds the area between Farmington Rd and Tile Flat Rd west of Grabhorn Rd and the area south of Walker Rd that is within Beaverton city limits. District 3 adds some areas west of Hillsboro Hwy/219 south of Bald Peak Rd, and also some area in the Garden Home/Raleigh Hills neighborhood south of Fanno Creek. District 4 adds blocks west of Cornelius Pass Rd and expands slightly eastward between Jackson School Rd and Jackson Quarry Rd/Logie Trail Rd. District 2 cedes areas to District 1, 3, and 4 (Figure 1, panel A).

Proposal 2b ("Urban Concentration") attempts to increase the population density of the districts by concentrating urban areas into districts, with most rural area concentrated in District 4. District 1 expands to include the area south of Sunset Hwy/26 that is east of the Beaverton-Tigard Hwy/217, as well as some of the Raleigh Hills and Whitford neighborhoods north Old Scholls Ferry Road and Montclair

Elementary. District 2 adds some area south of the Nike campus (formerly in District 1), and expands its footprint in Orenco slightly to add several blocks around Orenco Station. District 3 becomes focused on the urban parts of southeast Washington County, including the city and UGB areas of Tigard and Sherwood. District 4 expands to meet District 2 at the edge of the Rock Creek area and North Bethany (NW 185th Ave) and expands to include most of the non-urban area of District 3 that lies west of Ewert Rd/Roy Rogers Rd (Figure 1, panel B).

Proposal 3 ("Urban/Rural Balance") ensures that there is a balance of population and land area between rural and urban parts of the county. Each district covers part or whole of a city/UGB as well as significant unincorporated area. District 1 moves its eastern extent to the Beaverton-Tigard Hwy/217 and expands westward along River Rd and Laurel Rd on the south and following the Tualatin River and Tualatin Valley Hwy along its northern route, staying outside the cities of Hillsboro, Cornelius, and Forest Grove. District 1 cedes densely populated blocks southeast of Ronler Acres/Orenco Elementary and instead expands to include areas north of Evergreen Pkwy (north of Ronler Acres) westward to Glencoe Road, and all areas north of Sunset Hwy/26. District 3 expands to include additional area along the Yamhill county border, and also expands north to the Beaverton-Hillsdale Hwy (Figure 1, panel C).

Proposal 4 ("Community Boundaries") avoids splitting school districts and parks districts where possible, while also avoiding concentration of population by socioeconomic status (SES). District 4 gains densely populated blocks southeast of Ronler Acres/Orenco Elementary and cedes areas north of Evergreen Pkwy (north of Ronler Acres) westward to Glencoe Road, and all areas north of Sunset Hwy/26. District 4 contracts its eastern extent to the Beaverton-Tigard Hwy/217 and westward along River Rd and Laurel Rd on the south and following the Tualatin River and Tualatin Valley Hwy along its southern route. The resulting allocation of neighborhoods, parks districts, and school districts is as follows:

Proposed	School Districts	Parks and	Neighborhoods
District		Recreation	
		Districts	
1	Beaverton SD	Tualatin Hills PRD	Garden Home-Raleigh Hillsboro; Cooper Mtn-
	(southern part)	(southern part)	Aloha; West Beaverton; Vose; Hyland;
			Greenway; Neighbors SW; South Beaverton;
			Sexton Mountain; Central Beaverton; Denney
			Whitford/Raleigh West
2	Beaverton SD	Tualatin Hills PRD	Cedar Hills-Cedar Mill N; Sunset West/Rock
	(northern part)	(northern part)	Creek/Bethany; West Slope; Five Oaks/Triple
			Creek
3	Tigard-Tualatin	Tigard-Tualatin	Bull Mtn-Metzger; Sherwood-Tualatin; East
	SD; Sherwood SD;	Aquatic District	Tualatin; Ibach; Martinazzi Woods; Midwest;
	Newberg SD;		Riverpark
	Hillsboro SD		
	(southern part)		
4	Gaston SD; Forest	N/A	North Plains/Helvetia/Mountaindale;
	Grove SD; Banks		Hillsboro/Orenco; Gaston/Cherry
	SD; Hillsboro SD		Grove/Laurelwood; Forest Grove; Roy/Verboort;
	(northern part)		Banks/Buxton/Gales Creek/Manning/Timber

Proposal 5 ("City and UPAA integrity" This plan was intended to meet the following goals: (1) move the border of D4 further east in Hillsboro; (2) keep Helvetia in D2; (3) minimize the number of splits of urban

areas, so that each city has preferably only 1 split/2 commissioners; (4) consider UPAA boundaries; (5) allow D3 to move west; (6) keep Gaston, Forest Grove, Cornelius, and North Plains in the same district.

These goals were mostly able to be met. Beaverton is now divided between 2 districts (was 3); Hillsboro remains divided between 3 districts (was 3). A fundamental challenge is that Hillsboro, Forest Grove, and Cornelius together are too large for one single district. In this implementation, most of the Tanasbourne/Amberglen/Orenco/OHSU areas were moved from D2 to D4, except a small pocket of Tanasbourne. The tradeoff is that some southern parts of Hillsboro, south of the Tualatin Valley Highway, are moved into D3. D2 gains a more economically and racially diverse swath of Beaverton.

All five proposals achieve balanced population, but the demographic characteristics of the resulting commissioner districts vary between proposals. **Table 2** shows a comparison of each district at present to the county overall, where blue indicates higher representation of a race/ethnicity identity than the district overall, and red indicates lower. Significant differences are shaded more strongly.

To calculate the percentage distribution within any district, add the district percentages plus or minus the zone difference. For example, District 3 has a higher percentage of the population that is White alone, non-Hispanic or Latino (70.0%, i.e. 9.2 percentage points higher than the average of 60.8%), and District 2 has a higher concentration of Asian alone population (+8.8 percentage points over the average of 11.4%). Districts 1 and 4 have higher concentrations of Hispanic or Latino residents. There is no notable concentration of Black or NHPI residents.

Table 2: Comparison of Race/Ethnic Distribution between Districts (2020 Census)

	County	Differe	nce (Per	centage I	Points)
Baseline: District Differences from Average	Overall	1	2	3	4
Non-Hispanic, by race:					
White	60.8%	-4.1%	-2.9%	+9.2%	-2.0%
Black	2.1%	+0.8%	+0.3%	-0.5%	-0.6%
American Indian/Alaska Native (AIAN)	0.4%	-0.0%	-0.1%	+0.0%	+0.1%
Asian	11.4%	-0.4%	+8.8%	-4.6%	-4.6%
Native Hawaiian or Pacific Islander (NHPI)	0.5%	+0.1%	-0.2%	+0.3%	-0.2%
Other	0.5%	+0.0%	+0.0%	-0.1%	-0.0%
Two or more races	6.3%	+0.4%	+0.2%	+0.1%	-0.7%
of which:					
Black and White	0.8%	+0.2%	+0.0%	+0.0%	-0.2%
AIAN and White	1.3%	-0.0%	-0.3%	+0.1%	+0.2%
Asian and White	2.0%	+0.1%	+0.4%	+0.1%	-0.6%
Other combinations	2.1%	+0.1%	+0.1%	-0.0%	-0.1%
Hispanic or Latino:					
(Any race)	17.9%	+3.1%	-6.1%	-4.5%	+8.0%

Table 3 shows the number of households in the current districts, and the deviations from the average distribution by income between districts. The distribution of income is mostly equal between districts, with each district having a balance of low, middle, and high income earners. District 2 has a slightly higher concentration of the highest household income bracket, and District 1 slightly lower.

Table 3: Income distribution of Washington County Commissioner Districts (2020 ACS)

						District	Differe	oints)		
Baseline: Current Zones	1	2	3	4	TOTAL	Overall	1	2	3	4
TOTAL Households	55,315	59,481	56,635	51,609	223,040	100%	-	-	-	-
by Income:										
Less than \$25,000	6,861	5,221	6,561	5,309	23,952	10.7%	+1.7%	-2.0%	+0.8%	-0.5%
\$25,000 to \$29,999	1,660	1,833	1,717	1,236	6,446	2.9%	+0.1%	+0.2%	+0.1%	-0.5%
\$30,000 to \$34,999	1,874	1,696	1,956	1,903	7,429	3.3%	+0.1%	-0.5%	+0.1%	+0.4%
\$35,000 to \$39,999	1,955	2,063	1,678	2,043	7,739	3.5%	+0.1%	-0.0%	-0.5%	+0.5%
\$40,000 to \$44,999	1,753	2,099	1,833	1,720	7,405	3.3%	-0.2%	+0.2%	-0.1%	+0.0%
\$45,000 to \$49,999	2,029	1,655	1,473	1,511	6,668	3.0%	+0.7%	-0.2%	-0.4%	-0.1%
\$50,000 to \$59,999	4,217	3,867	3,793	3,470	15,347	6.9%	+0.7%	-0.4%	-0.2%	-0.2%
\$60,000 to \$74,999	5,976	5,256	5,038	5,551	21,821	9.8%	+1.0%	-0.9%	-0.9%	+1.0%
\$75,000 to \$99,999	7,811	7,584	7,977	7,085	30,457	13.7%	+0.5%	-0.9%	+0.4%	+0.1%
\$100,000 to \$124,999	6,759	6,640	7,144	6,498	27,041	12.1%	+0.1%	-1.0%	+0.5%	+0.5%
\$125,000 to \$149,999	4,803	5,064	4,748	5,095	19,710	8.8%	-0.2%	-0.3%	-0.5%	+1.0%
\$150,000 to \$199,999	5,630	6,577	6,552	5,540	24,299	10.9%	-0.7%	+0.2%	+0.7%	-0.2%
\$200,000 or more	3,987	9,926	6,165	4,648	24,726	11.1%	-3.9%	+5.6%	-0.2%	-2.1%

The following tables highlight the differences between proposals in demographic makeup and income distributions. The differences in race/ethnicity distribution between districts in each proposal is shown in **Table 4**. All five plans show similar patterns as baseline, although there are several important differences. Proposals 2-4, for example, show reduced Hispanic representation in District 1, but Proposal 3 shows increased concentration in District 4. Proposal 5 shows reduced concentration of race/ethnic groups except for increased Hispanic representation in District 4.

Table 5 shows the deviations from the average distribution of income for each proposal. There are not many significant differences between proposals, except that proposals 2, 4, and 5 slightly reduce the concentration of highest-earning households in District 2.

A map of the boundary differences between the baseline district and each proposal is in **Figure 1** (one panel for each proposal). Additional detailed maps of each proposal are included as PDF attachments, and as an interactive map application.

Enclosures

- 1. PDF detail maps of each proposal.
- 2. Interactive mapping application (with GIS downloads) at https://arcg.is/09uqeq0
- 3. 2020 Census PL94-171 data for census blocks in the State of Oregon are available in repackaged form at https://pdx.edu/prc/census-data-oregon

Table 4: Race/Ethnicity and Differentials per Districts by Proposal (2020 Census)

	Proposal 1				Proposal 2b				Proposal 3				Proposal 4				Proposal 5			
	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4
TOTAL Population	150,092	150,090 ⁻	150,088	150,102	150,179	150,025	150,087	150,081	150,082	150,116	150,104	150,070	150,024	149,436	150,969	149,943	149,982	149,923	149,894	150,573
Deviation:	-1	-3	-5	9	86	-68	-6	-12	-11	23	11	-23	-69	-657	876	-150	-111	-170	-199	480
Percent	0.0%	0.0%	0.0%	0.0%	0.1%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	0.0%	-0.4%	0.6%	-0.1%	-0.1%	-0.1%	-0.1%	0.3%
Non-Hispanic, by race:																				
White	85,062	86,800	105,381	87,989	88,707	82,038	104,227	90,260	87,951	87,751	106,307	83,223	90,565	83,469		87,212		85,468	103,677	85,841
Black	4,394	3,561	2,454	2,354	4,207	3,906	2,559	2,091	4,203	3,291	2,405	2,864	4,052	3,909	2,620	2,182	3,923	3,469	2,585	2,786
American Indian/Alaska Native (AIAN)	565	505	648	698	572	504	623	717	569	531	645	671	535	516	666	699	548	501	668	699
Asian	16,322	31,068	10,076	10,964	14,406	33,945	10,999	9,080	15,761	30,065	9,118	13,486	14,109	32,282	10,697	11,342	15,246	30,070	10,389	12,725
Native Hawaiian or Pacific Islander (NHPI)	931	542	1,226	541	906	590	1,235	509	857	523	1,229	631	852	578	1225	585	889	570	1,211	570
Other	840	822	662	772	849	816	651	780	835	849	664	748	816	839	685	756	792	869	682	753
Two or more races (all combinations)	9,951	9,599	9,630	8,373	9,865	9,605	9,733	8,350	9,972	9,475	9,565	8,541	9,951	9,646	9,498	8,458	10,068	9,588	9,369	8,528
Hispanic (any race):	32,027	17,193	20,011	38,411	30,652	18,704	20,060	38,226	29,934	17,631	20,171	39,906	29,144	18,197	21,592	38,709	28,270	19,388	21,313	38,671
Difference from Average:																				
Non-Hispanic, by race:																				
White	-4.2%	-3.0%	+9.4%	-2.2%	-1.8%	-6.2%	+8.6%	-0.7%	-2.2%	-2.4%	+10.0%	-5.4%	-0.5%	-5.0%	+8.0%	-2.7%	-0.7%	-3.8%	+8.3%	-3.8%
Black	+0.8%	+0.2%	-0.5%	-0.6%	+0.7%	+0.5%	-0.4%	-0.7%	+0.7%	+0.1%	-0.5%	-0.2%	+0.6%	+0.5%	-0.4%	-0.7%	+0.5%	+0.2%	-0.4%	-0.3%
American Indian/Alaska Native (AIAN)	-0.0%	-0.1%	+0.0%	+0.1%	-0.0%	-0.1%	+0.0%	+0.1%	-0.0%	-0.0%	+0.0%	+0.0%	-0.0%	-0.1%	+0.0%	+0.1%	-0.0%	-0.1%	+0.0%	+0.1%
Asian	-0.5%	+9.3%	-4.7%	-4.1%	-1.8%	+11.2%	-4.1%	-5.3%	-0.9%	+8.6%	-5.3%	-2.4%		+10.2%	-4.3%	-3.8%	-1.2%	+8.7%	-4.5%	-2.9%
Native Hawaiian or Pacific Islander (NHPI)	+0.1%	-0.2%	+0.3%	-0.2%	+0.1%	-0.1%	+0.3%	-0.2%	+0.0%	-0.2%	+0.3%	-0.1%	+0.0%	-0.2%	+0.3%	-0.1%	+0.1%	-0.2%	+0.3%	-0.2%
Other	+0.0%	+0.0%	-0.1%	-0.0%		+0.0%	-0.1%	+0.0%	+0.0%	+0.0%	-0.1%	-0.0%	+0.0%	+0.0%	-0.1%	-0.0%	+0.0%	+0.1%	-0.1%	-0.0%
Two or more races (all combinations)	+0.4%	+0.1%	+0.2%	-0.7%	+0.3%	+0.1%	+0.2%	-0.7%	+0.4%	+0.1%	+0.1%	-0.6%	+0.4%	+0.2%	+0.0%	-0.6%	+0.5%	+0.1%	-0.0%	-0.6%
Hispanic (any race):	+3.4%	-6.5%	-4.6%	+7.7%	+2.5%	-5.5%	-4.6%	+7.5%	+2.0%	-6.2%	-4.5%	+8.7%	+1.5%	-5.8%	-3.6%	+7.9%	+0.9%	-5.0%	-3.7%	+7.8%

Table 5: Income Distribution Differentials per District by Proposal (2020 ACS)

		Propos	sal 1		Proposal 2b				Proposal 3					Propo	sal 4		Proposal 5				
Household Income:	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	1	2	3	4	
Less than \$25,000	+1.7%	-2.1%	+0.9%	-0.5%	+1.5%	-1.9%	+0.8%	-0.7%	+0.9%	-2.3%	+1.0%	+0.5%	+1.3%	-2.1%	+0.4%	+0.2%	+0.8%	-1.9%	+0.6%	+0.5%	
\$25,000 to \$29,999	+0.1%	+0.3%	+0.0%	-0.5%	+0.4%	-0.1%	+0.0%	-0.3%	-0.2%	+0.8%	-0.0%	-0.6%	+0.3%	+0.0%	-0.1%	-0.3%	-0.2%	+0.7%	-0.1%	-0.3%	
\$30,000 to \$34,999	+0.1%	-0.5%	+0.1%	+0.3%	+0.3%	-0.8%	-0.0%	+0.4%	-0.2%	-0.3%	+0.3%	+0.2%	+0.5%	-0.8%	-0.2%	+0.5%	+0.2%	-0.4%	-0.1%	+0.3%	
\$35,000 to \$39,999	+0.1%	+0.1%	-0.5%	+0.4%	+0.0%	-0.3%	-0.1%	+0.4%	+0.4%	-0.3%	-0.4%	+0.5%	+0.2%	+0.1%	-0.2%	-0.2%	-0.3%	+0.1%	-0.2%	+0.4%	
\$40,000 to \$44,999	-0.2%	+0.4%	-0.2%	-0.0%	+0.3%	-0.1%	-0.1%	-0.1%	-0.2%	+0.2%	+0.0%	-0.1%	+0.2%	+0.0%	-0.3%	-0.0%	-0.2%	+0.4%	-0.2%	-0.0%	
\$45,000 to \$49,999	+0.7%	-0.2%	-0.3%	-0.1%	+0.6%	-0.2%	-0.3%	-0.2%	+0.5%	-0.3%	-0.1%	-0.2%	+0.6%	-0.3%	-0.1%	-0.2%	+0.2%	-0.1%	-0.1%	+0.0%	
\$50,000 to \$59,999	+0.7%	-0.7%	-0.1%	+0.1%	+0.5%	-0.3%	+0.2%	-0.4%	+0.7%	-1.5%	-0.0%	+1.0%	+0.8%	-0.8%	-0.2%	+0.2%	+0.9%	-1.8%	-0.1%	+1.0%	
\$60,000 to \$74,999	+1.0%	-0.7%	-1.0%	+0.8%	+1.5%	-0.9%	-1.0%	+0.4%	+1.1%	-0.9%	-1.0%	+0.9%	+1.2%	-0.8%	-1.4%	+1.0%	+0.7%	-1.0%	-1.1%	+1.5%	
\$75,000 to \$99,999	+0.5%	-1.1%	+0.5%	+0.1%	+0.1%	+0.1%	+0.1%	-0.3%	+1.0%	-1.4%	-0.1%	+0.6%	+0.3%	-0.5%	+0.3%	-0.1%	-0.4%	-0.9%	+0.5%	+0.8%	
\$100,000 to \$124,999	+0.1%	-0.8%	+0.3%	+0.4%	-0.5%	-0.3%	+0.1%	+0.8%	+0.2%	-1.0%	+0.1%	+0.8%	-1.1%	-0.1%	+0.7%	+0.7%	-1.5%	+0.2%	+1.1%	+0.4%	
\$125,000 to \$149,999	-0.2%	-0.3%	-0.4%	+0.9%	-0.4%	+0.1%	-0.4%	+0.7%	+0.0%	+0.4%	-0.4%	-0.0%	-0.7%	-0.2%	-0.1%	+1.1%	-0.4%	-0.2%	+0.1%	+0.7%	
\$150,000 to \$199,999	-0.7%	+0.1%	+0.5%	+0.0%	-1.5%	+0.4%	+0.6%	+0.6%	-0.3%	+1.0%	+0.2%	-1.1%	-0.9%	+0.6%	+1.1%	-0.8%	-1.2%	+0.3%	+1.2%	-0.1%	
\$200,000 or more	-3.9%	+5.5%	+0.1%	-1.9%	-2.9%	+4.3%	+0.2%	-1.2%	-3.9%	+5.6%	+0.4%	-2.4%	-2.5%	+4.7%	+0.1%	-2.3%	-3.2%	+5.1%	+0.2%	-2.0%	

Figure 1: Current and Proposed Boundary Changes for Washington County Commissioner Districts

