Washington State Redistricting Commission: Avoid map fragmentation

OVERVIEW:
A mathematical study of precinct sizes shows that redistricting tends to fragment the voting map into tiny pieces. To prevent this fragmentation, everyone who redraws district boundaries must consider other map layers besides their own.

Tiny map fragments lead to a proliferation of ballot styles, which increases the cost of administering elections. Every tiny balloting region requires printing yet another ballot style, **costing county auditors more money**.

When several independently drawn map layers overlay each other, the combined map regions have areas that follow a power law distribution. It is exactly like how colors fragment when you look through a dozen layers of stained glass windows. There are a few large regions, but many small regions.

ADVICE:
1. Draw new boundaries along existing boundaries in other map layers,
2. Follow physical infrastructure boundaries first, such as utility districts,
3. Never divide a precinct portion, because that guarantees fragmentation.

STUDY:
Using Snohomish County minor district data from August 25th, 2010, I counted how many voters would share each ballot style, ignoring PCO elections. Out of 414 ballot regions, the largest contained 16,476 voters, 100 regions contained 40 or fewer voters, and 49 tiny regions contained 10 or fewer voters. I plotted the results a log-linear graph (fig 1), where a perfect power law distribution would appear as a straight line.

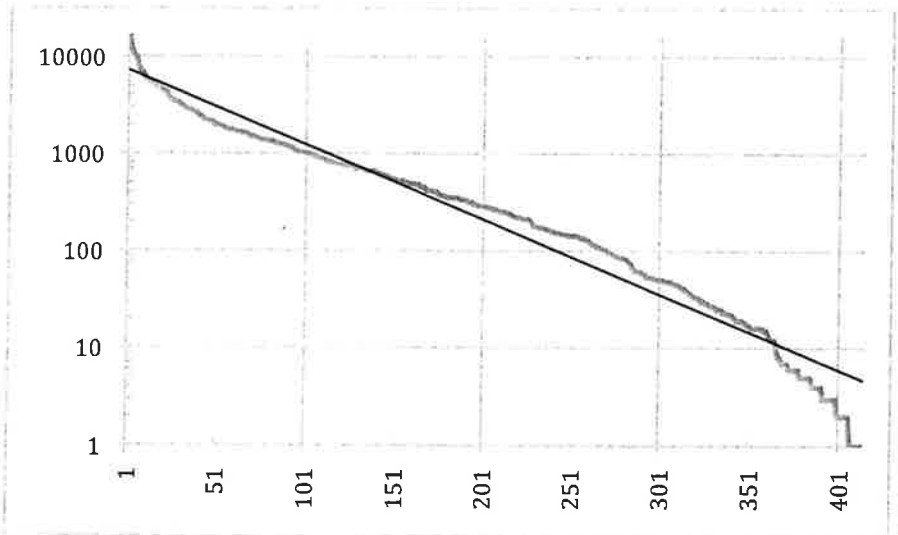

Fig 1. Number of Snohomish County Voters in Distinct Balloting Regions

Rick DeWitt, WA Democrats Technology Committee Chair, (425) 357-0605

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Rank	CCPCLC	Precinct Name	Precinct Portion	Voters
1	SN000391435.02	STILLAGUAMISH	02	1
2	SN000391407.04	BRYANT	04	1
3	SN000391435.03	STILLAGUAMISH	03	1
4	SN000382903.01	SPENCER	01	1
5	SN000442904.02	PEAK	02	1
6	SN000382264.02	EVERETT 64	02	1
7	SN000214903.00	NILE	00	1
8	SN000115410.03	MALTBY	03	1
9	SN000441402.03	EBEY	03	2
10	SN000445906.03	WELANGDON	03	2
11	SN000395218.04	MONROE 8	04	2
12	SN000382903.02	SPENCER	02	2
13	SN000395404.04	CATHCART	04	2
14	SN000213256.02	LYNNWOOD 6	02	2
15	SN000114444.02	GLENBAR	02	2
16	SN000395430.03	SHORTS	03	3
17	SN000395436.04	TUALCO	04	3
18	SN000395436.03	TUALCO	03	3
19	SN000101209.03	ARLINGTON 9	03	3
20	SN000445438.02	REES	02	3
21	SN000113901.00	LYNNWOOD 32	00	3
22	SN000445452.01	VILLE	01	4
23	SN000445220.03	SNOHOMISH 10	03	4
24	SN000391426.02	PACKWOOD	02	4
25	SN000444904.02	MILL CREEK 7	02	4
26	SN000212410.02	HIWAY	02	4
27	SN000212217.02	MUKILTEO 17	02	4
28	SN000391249.02	MARYSVILLE 33	02	5
29	SN000391210.02	ARLINGTON 10	02	5
30	SN000395436.05	TUALCO	05	5
31	SN000382900.00	EVERETT 70	00	5
32	SN000212204.01	MUKILTEO 4	01	5
33	SN000442405.03	VALMONT	03	5
34	SN000323251.02	WOODWAY 1	02	5
35	SN000444906.00	SLIVER	00	6
36	SN000395441.09	WOODS CREEK	09	6
37	SN000101421.02	TIMBER	02	6
38	SN000101421.01	TIMBER	01	6
39	SN000395404.03	CATHCART	03	6
40	SN000395410.05	HIGH BRIDGE	05	6
41	SN000445425.07	MARKS	07	7
42	SN000445425.06	MARKS	06	7
43	SN000442204.02	EVERETT 38	02	7
44	SN000391410.04	EDGECOMB	04	7
45	SN000101417.04	SILVANA	04	8

Table 1. Tiniest Precinct Portions in Snohomish County

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