

# Comparing the Seven Map Proposals Submitted to the WI Supreme Court in 2024

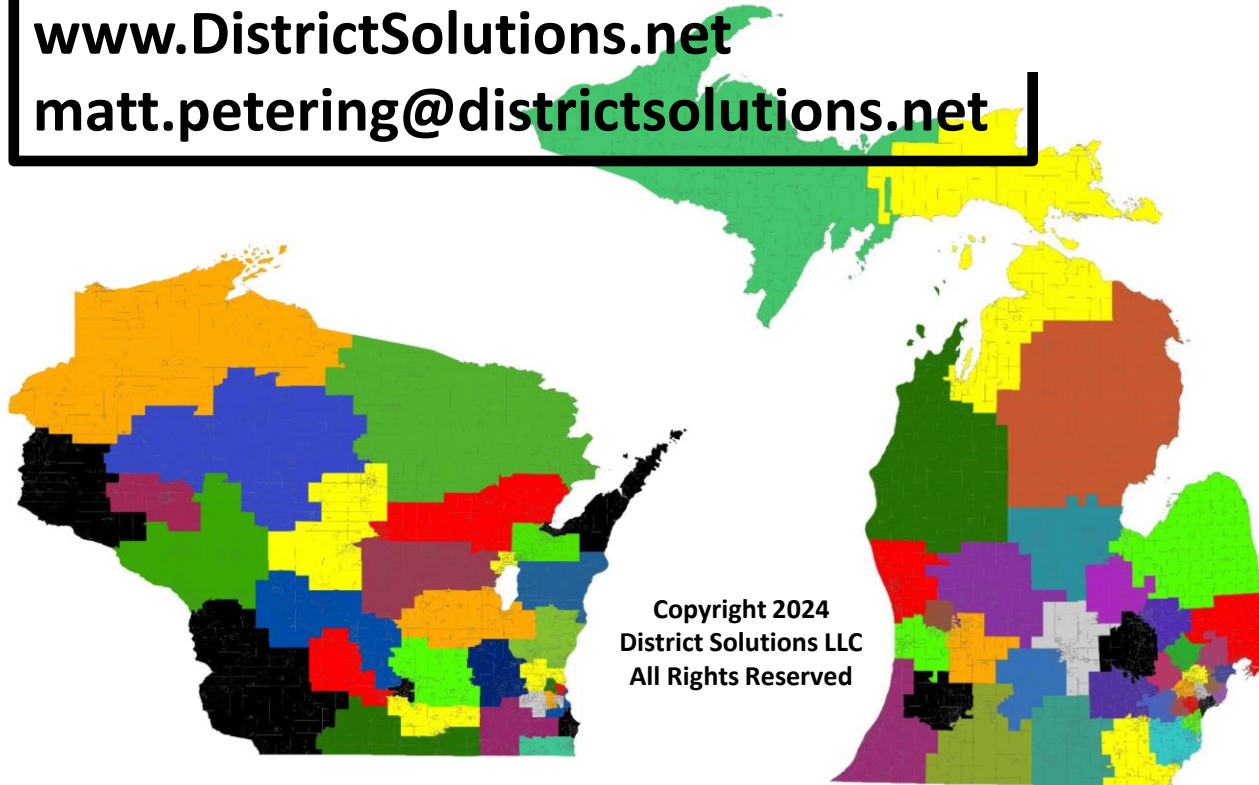
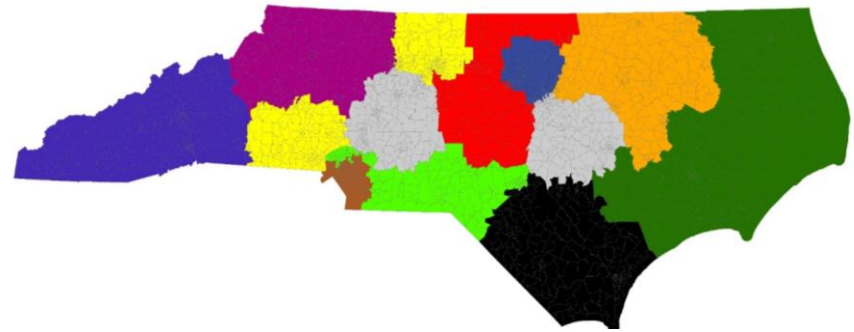
**Matt Petering, PhD**

**District Solutions LLC**

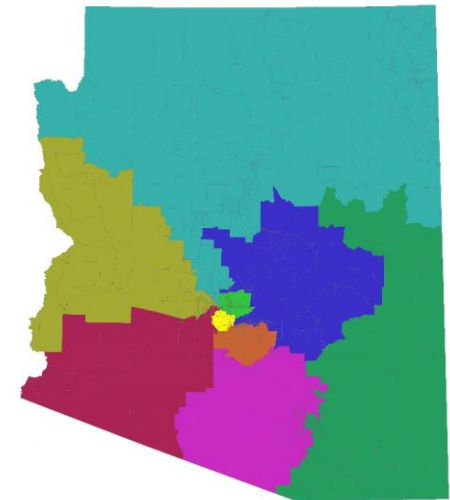
Feb. 24, 2024

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Images of maps made by the  
District Solutions *FastMap*  
redistricting algorithm

# Seven Map Proposals Submitted to Wisconsin Supreme Court (Jan. 12, 2024)

Two proposals from conservative groups:

**Legislature, Johnson**

Three proposals from progressive groups:

**Governor Evers, Clarke, Democratic Senators**

Two proposals from groups claiming to use the latest tools in computational redistricting:

**Wright, Petering (Petering proposal is named “173#008 FastMap Algorithm”)**

Each proposal (which can be accessed via the URL below) includes

**one map for Wisconsin’s 99 assembly districts +  
one map for Wisconsin’s 33 senate districts**

[https://www.therecombobulationarea.news/p/discussion-thread-new-wisconsin-state/comments?utm\\_source=substack&publication\\_id=10736&post\\_id=140633637&utm\\_medium=email&isFreemail=true&r=dfrr&utm\\_campaign=email-half-magic-comments&open=false](https://www.therecombobulationarea.news/p/discussion-thread-new-wisconsin-state/comments?utm_source=substack&publication_id=10736&post_id=140633637&utm_medium=email&isFreemail=true&r=dfrr&utm_campaign=email-half-magic-comments&open=false)

# Comparing the Seven Map Proposals

All proposals except Dem Senators meet strict legal requirements (nesting, pop. deviation, VRA, contiguity)

Rankings for other criteria (best at top, worst at bottom):

Political Neutrality	No. Competitive Districts	Compactness	County Splitting	Municipality Splitting	Native Americans
Petering	Petering	Petering	Johnson	Johnson	Petering
Dem Senators	Johnson	Evers	Petering	Clarke	Evers
Clarke	Wright	Johnson	Evers	Wright	Dem Senators
Wright	Dem Senators	Wright	Clarke	Evers	Wright
Evers	Evers	Dem Senators	Dem Senators	Petering	Legislature
Johnson	Legislature	Clarke	Wright	Dem Senators	Johnson
Legislature	Clarke	Legislature	Legislature	Legislature	Clarke

# Comparing the Seven Map Proposals

**For political neutrality...**

**The Petering proposal is the best for nine of the ten metrics of political neutrality that are measured by DavesRedistricting.org, and it is the second best for the tenth metric.**

**Disproportionality**

**Gamma Bias**

**Partisan Bias**

**Votes Bias**

**Lopsided Outcomes Bias**

**Efficiency Gap**

**Seats Bias**

**Declination**

**Global Asymmetry**

**Mean-Median Bias**

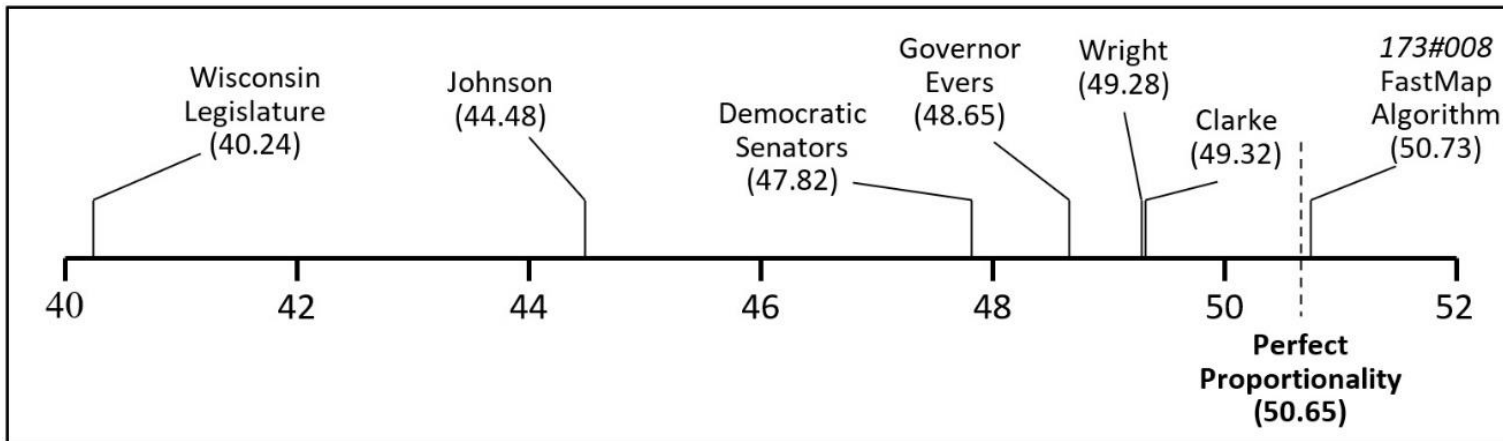
**(Using DavesRedistricting.org 2016-2022 composite election data)**

# Comparing the Seven Map Proposals

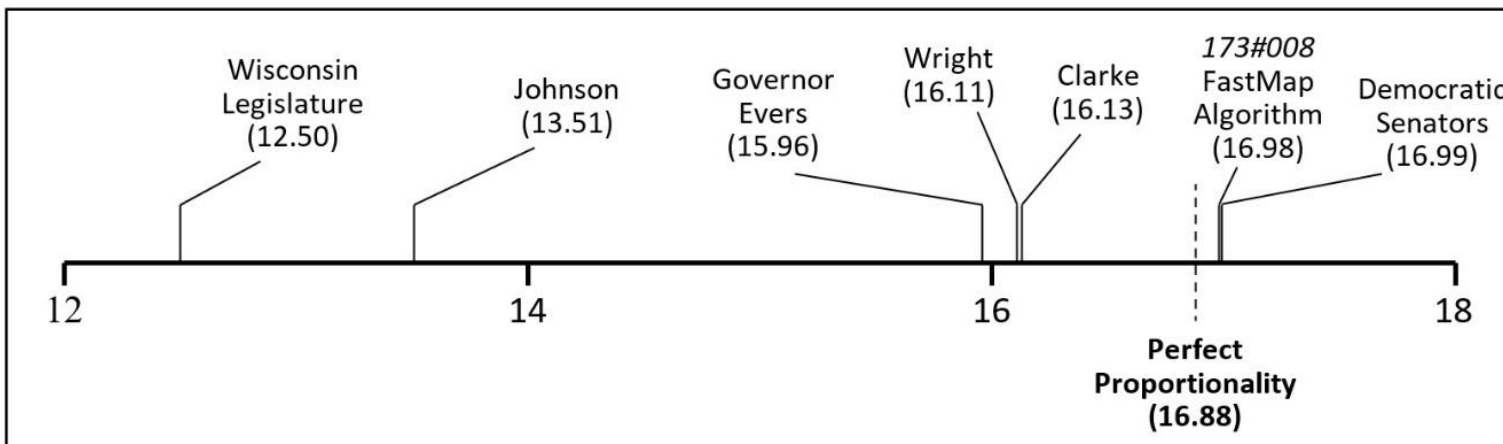
For political neutrality...

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**Predicted number of assembly seats won by Democrats (out of 99)**



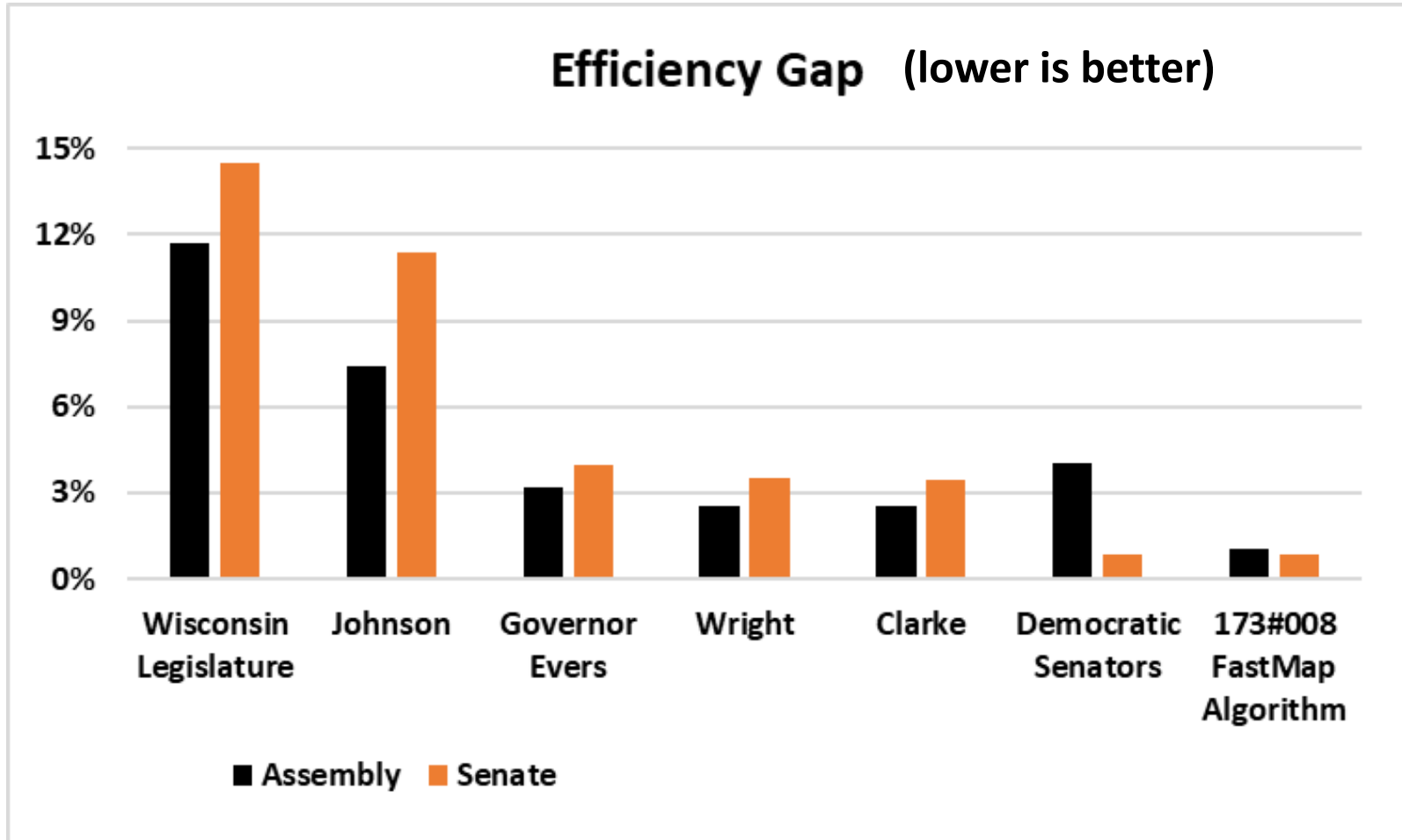
**Predicted number of senate seats won by Democrats (out of 33)**



Predictions are from  
DavesRedistricting.org  
2016-2022 composite  
election data.

# Comparing the Seven Map Proposals

For political neutrality...



(from DavesRedistricting.org 2016-2022 composite election data)

# Comparing the Seven Map Proposals

For  
 “majoritarianism”  
 in recent statewide  
 elections...

(Majoritarianism is  
 another metric for  
 political neutrality.)

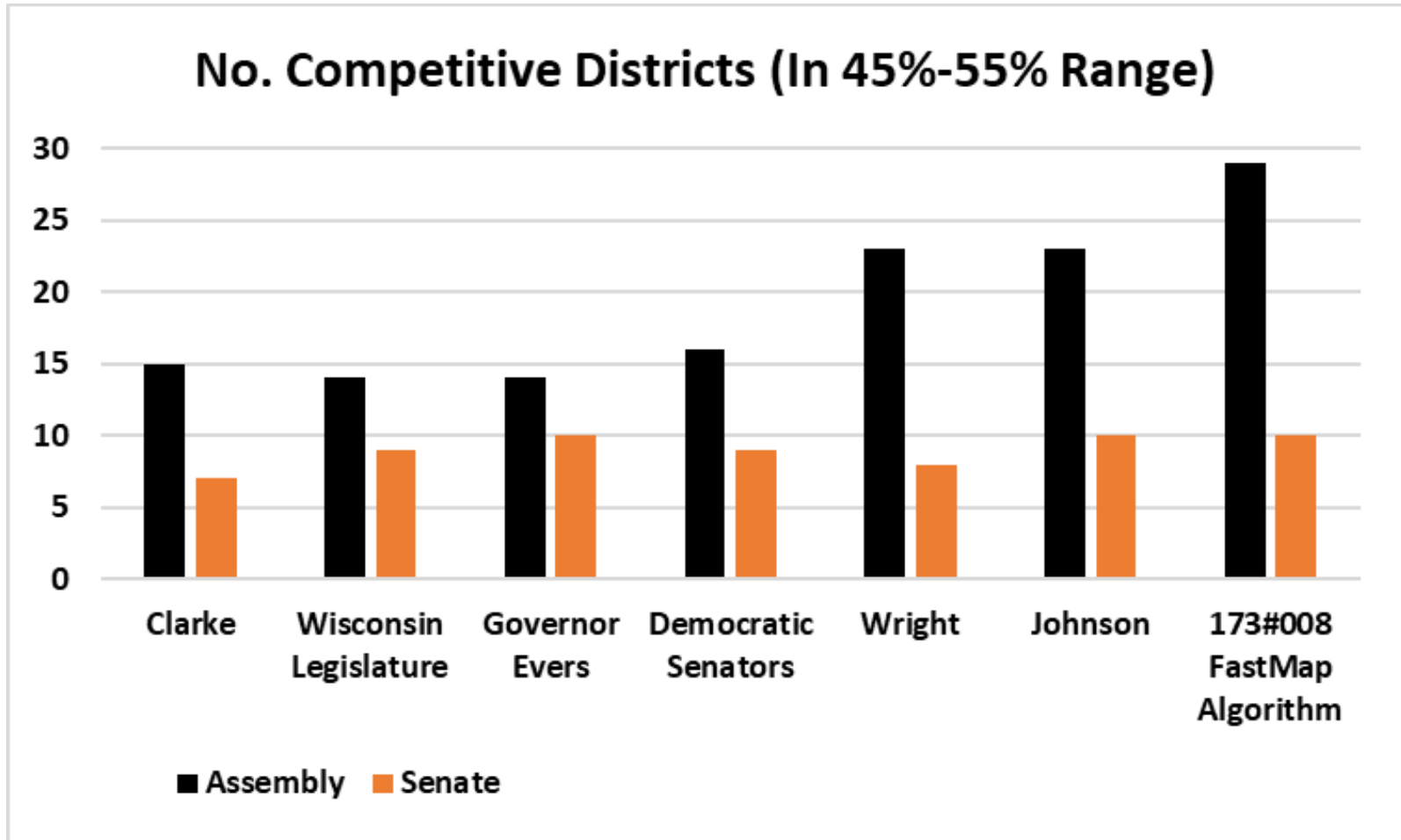
Sen = U.S. Senate  
 Tres = State Treasurer  
 Pres = U.S. President  
 SOS = Secretary of State  
 AG = Attorney General  
 Gov = Governor

Table 8. Plans’ adherence to majority rule in thirteen recent statewide elections. Majority rule is achieved (Y) if a majority of districts in the proposal are carried by the candidate who won the popular vote. If majority rule is not achieved, the cell is blank.

Assembly Election	Wisconsin Legislature	Johnson	Wright	Democratic Senators	Governor Evers	Clarke	173#008 FastMap Algorithm
2016 Sen	Y	Y	Y	Y	Y	Y	Y
2022 Tres	Y	Y		Y	Y	Y	
2022 Sen	Y	Y		Y	Y	Y	Y
2016 Pres	Y	Y	Y	Y	Y	Y	Y
2022 SOS			Y			Y	Y
2020 Pres			Y			Y	Y
2018 AG							Y
2018 Gov							Y
2022 AG			Y		Y	Y	Y
2022 Gov			Y	Y	Y	Y	Y
2018 Tres			Y	Y	Y	Y	Y
2018 SOS			Y	Y	Y	Y	Y
2018 Sen	Y	Y	Y	Y	Y	Y	Y
# Assembly Elections w/ Majority Rule	5	5	9	8	9	11	12
Senate Election	Wisconsin Legislature	Johnson	Wright	Democratic Senators	Governor Evers	Clarke	173#008 FastMap Algorithm
2016 Sen	Y	Y	Y	Y	Y	Y	Y
2022 Tres	Y	Y	Y		Y	Y	
2022 Sen	Y	Y			Y	Y	
2016 Pres	Y	Y		Y	Y	Y	Y
2022 SOS			Y	Y	Y		Y
2020 Pres			Y	Y	Y	Y	Y
2018 AG				Y			Y
2018 Gov				Y			Y
2022 AG			Y	Y	Y		Y
2022 Gov			Y	Y	Y	Y	Y
2018 Tres				Y	Y	Y	Y
2018 SOS				Y	Y	Y	Y
2018 Sen	Y	Y	Y	Y	Y	Y	Y
# Senate Elections w/ Majority Rule	5	5	8	11	11	9	11
<b>Total # Majoritarian Asm. + Sen. Elections</b>	<b>10</b>	<b>10</b>	<b>17</b>	<b>19</b>	<b>20</b>	<b>20</b>	<b>23</b>

# Comparing the Seven Map Proposals

For number of competitive districts...



(from DavesRedistricting.org 2016-2022 composite election data)



# Comparing the Seven Map Proposals

For district shapes...

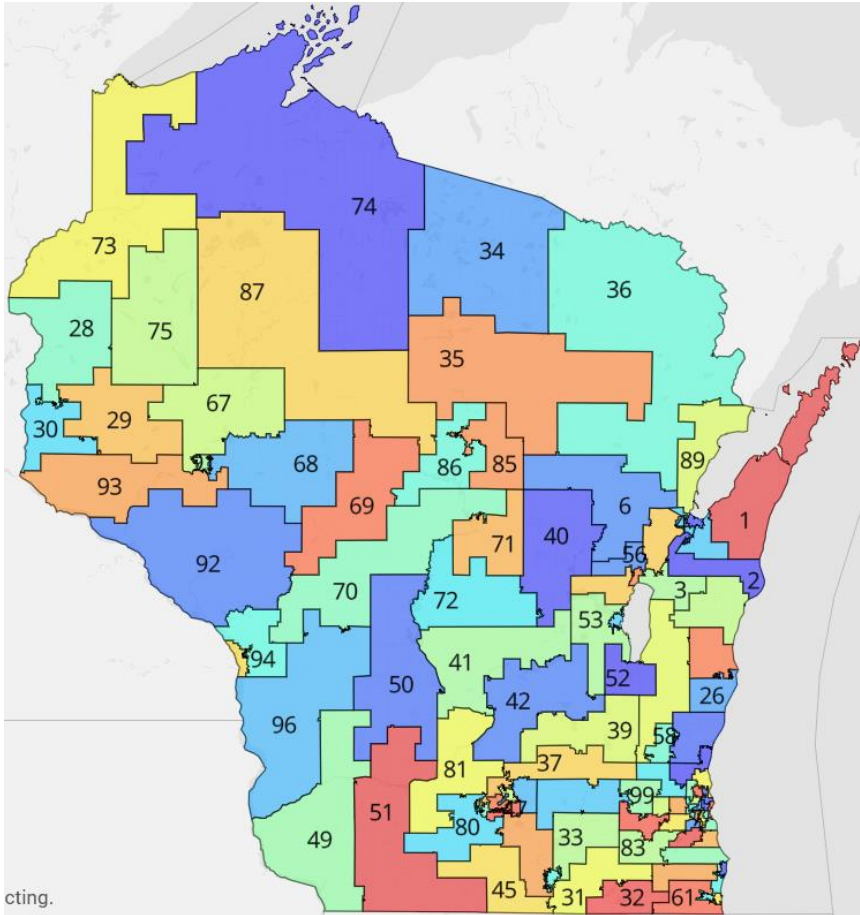
District compactness scores (higher is better)

Proposal	Assembly Reock Score	Assembly Polsby-Popper Score	Senate Reock Score	Senate Polsby-Popper Score	Sum
Wisconsin Legislature	0.3612	0.2437	0.3687	0.2257	1.199
Clarke	0.3867	0.2995	0.3852	0.2516	1.323
Democratic Senators	0.3932	0.3145	0.3577	0.2596	1.325
Wright	0.3869	0.3098	0.3805	0.2533	1.331
Johnson	0.4128	0.3472	0.3877	0.2793	1.427
Governor Evers	0.3919	0.3488	0.3769	0.3133	1.431
173#008 FastMap Algorithm	0.4443	0.3747	0.3867	0.3233	1.529

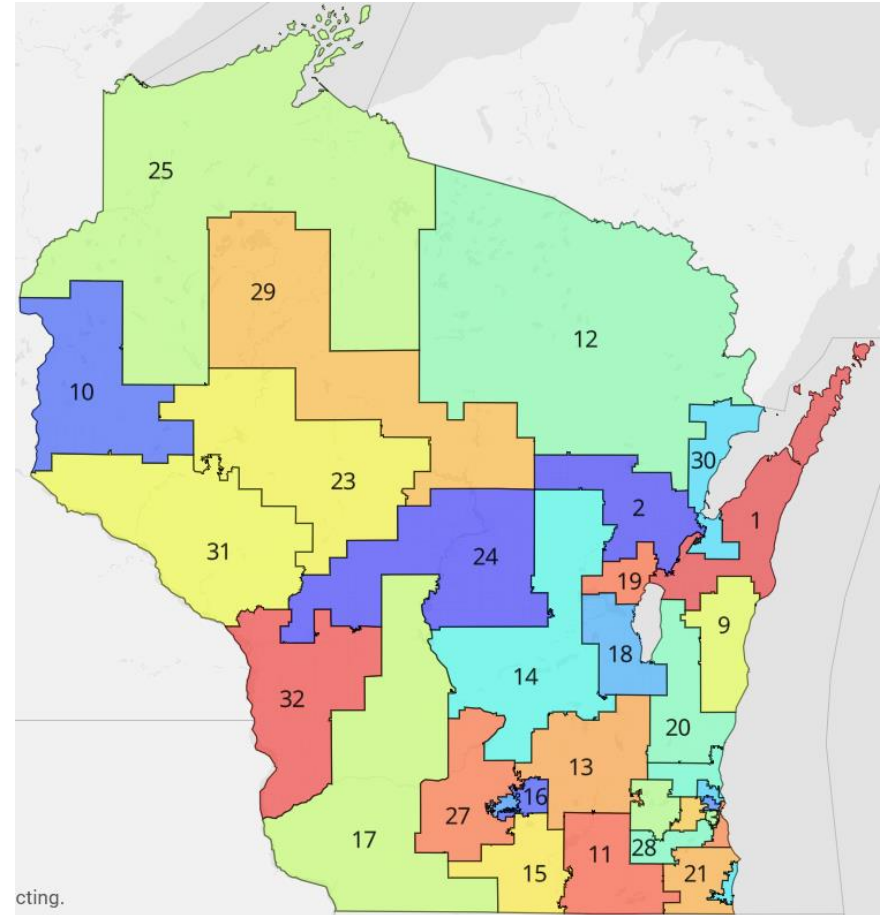
(from [DavesRedistricting.org](https://davesredistricting.org))

# Comparing the Seven Map Proposals

For district shapes...



Legislature assembly districts

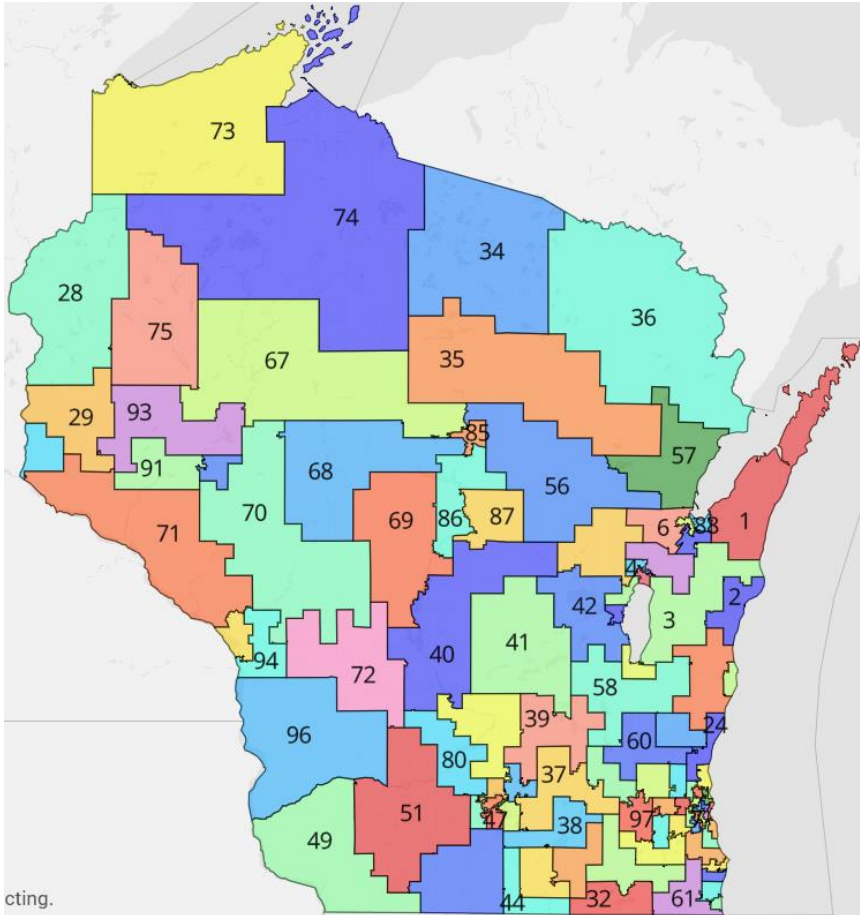


Legislature senate districts

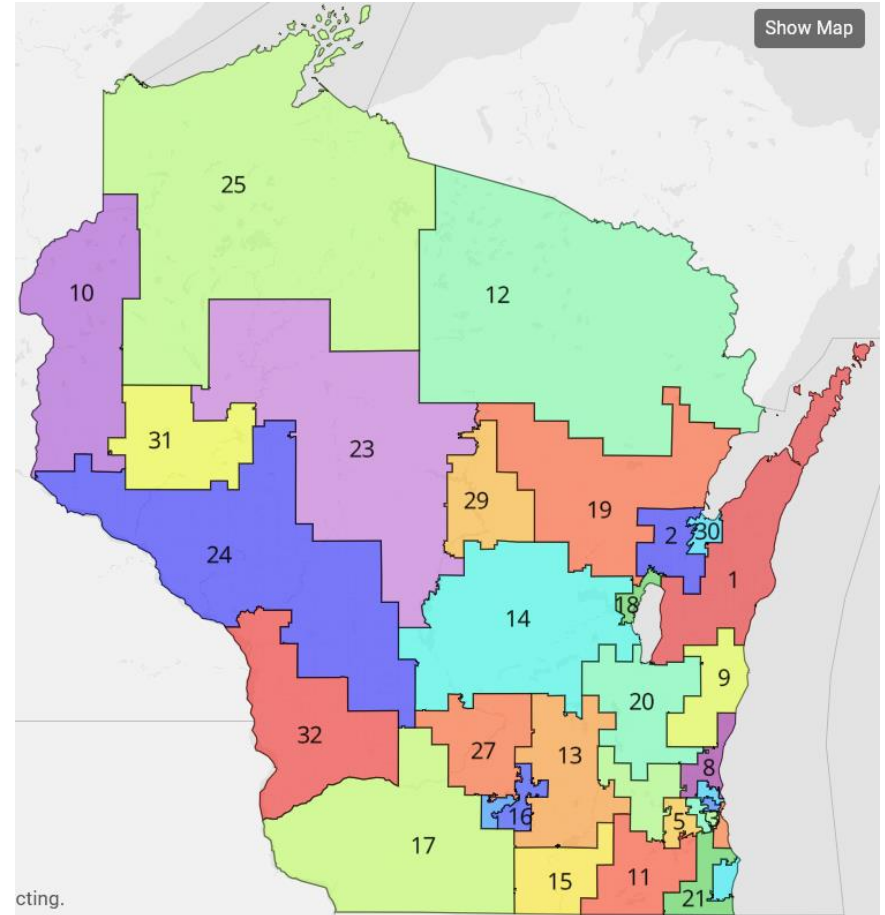
(Images from DavesRedistricting.org)

# Comparing the Seven Map Proposals

For district shapes...



Clarke assembly districts

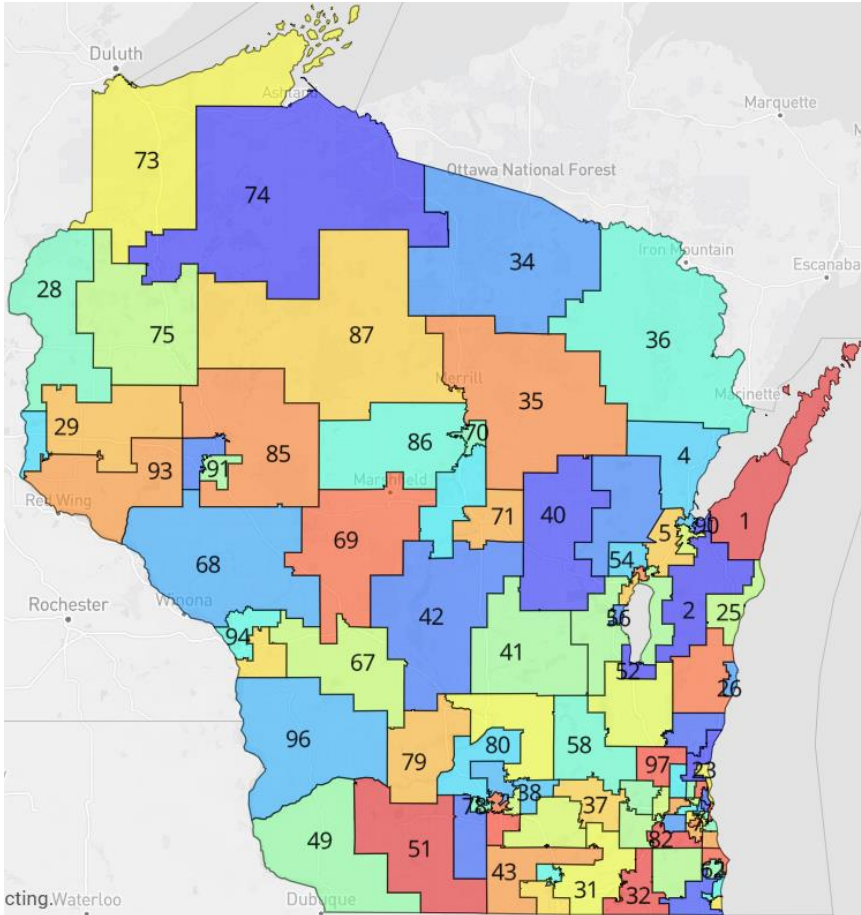


Clarke senate districts

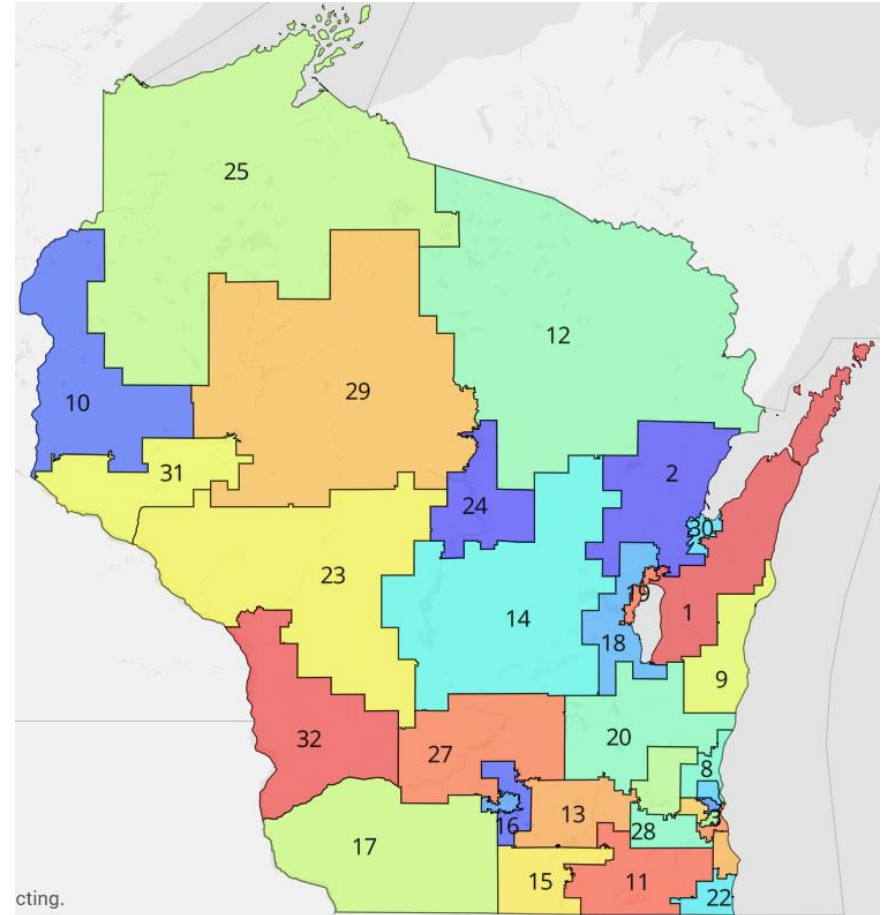
(Images from DavesRedistricting.org)

# Comparing the Seven Map Proposals

For district shapes...



**Dem Senators assembly districts**



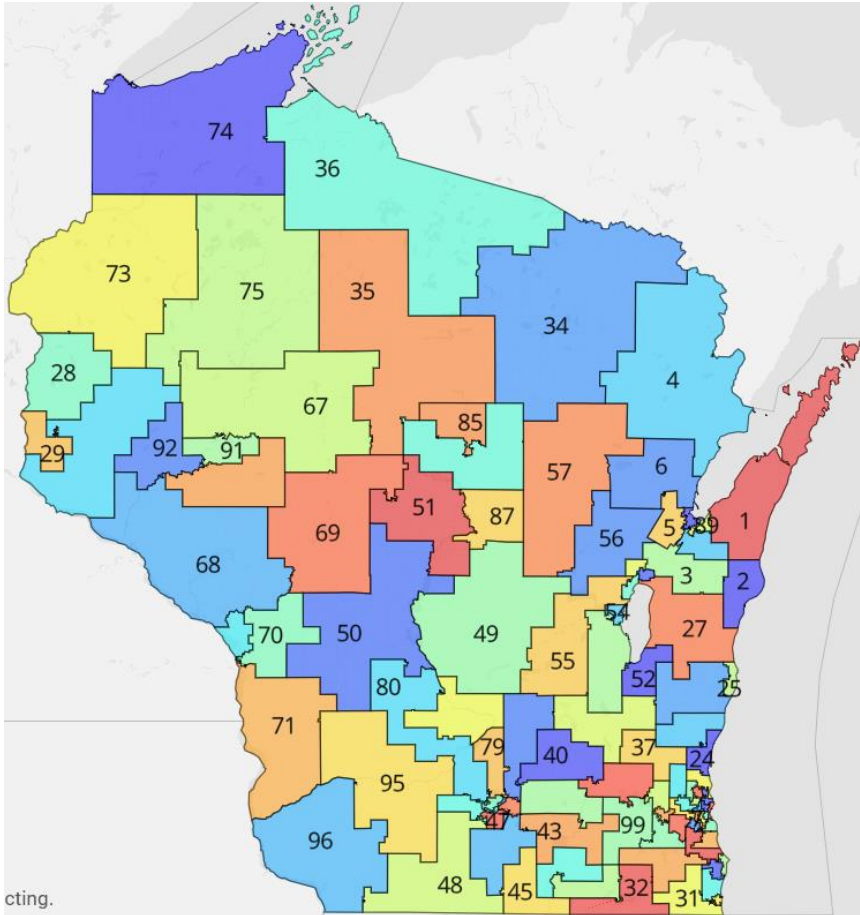
**Dem Senators senate districts**

(Images from DavesRedistricting.org)

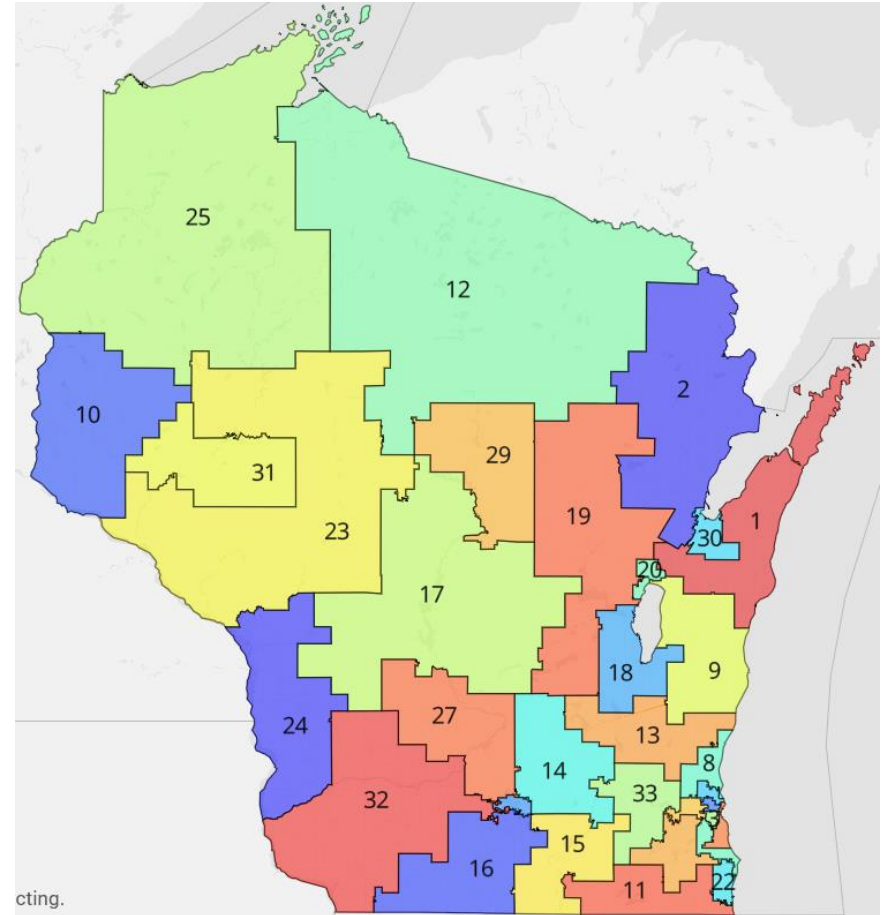


# Comparing the Seven Map Proposals

For district shapes...



**Wright assembly districts**

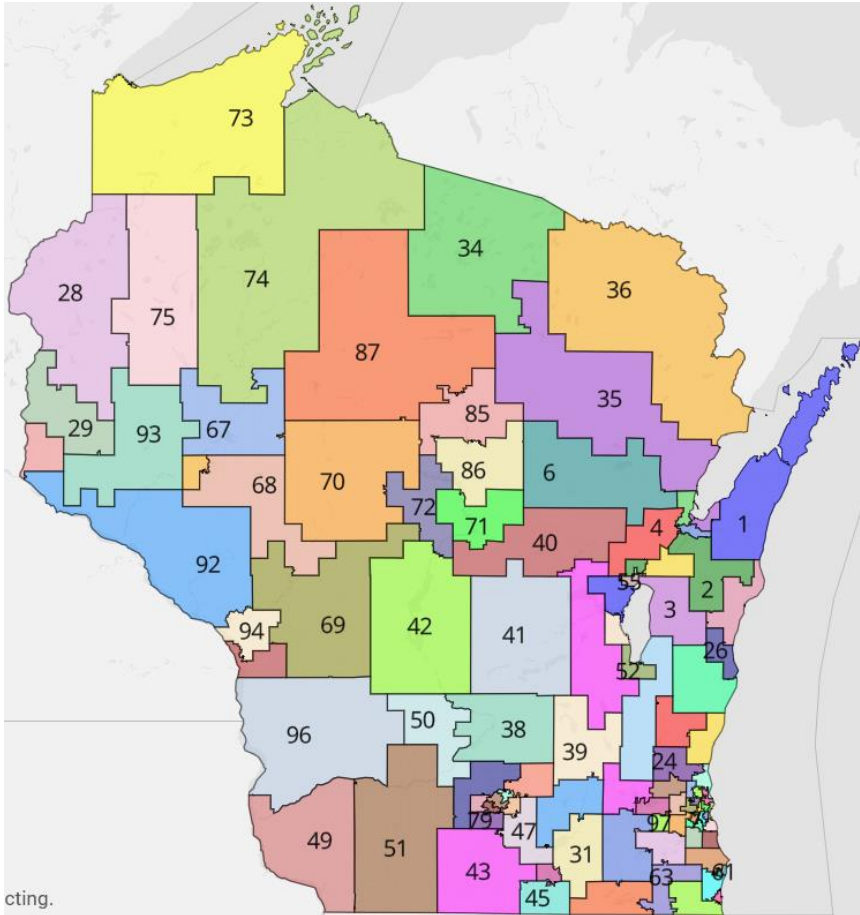


**Wright senate districts**

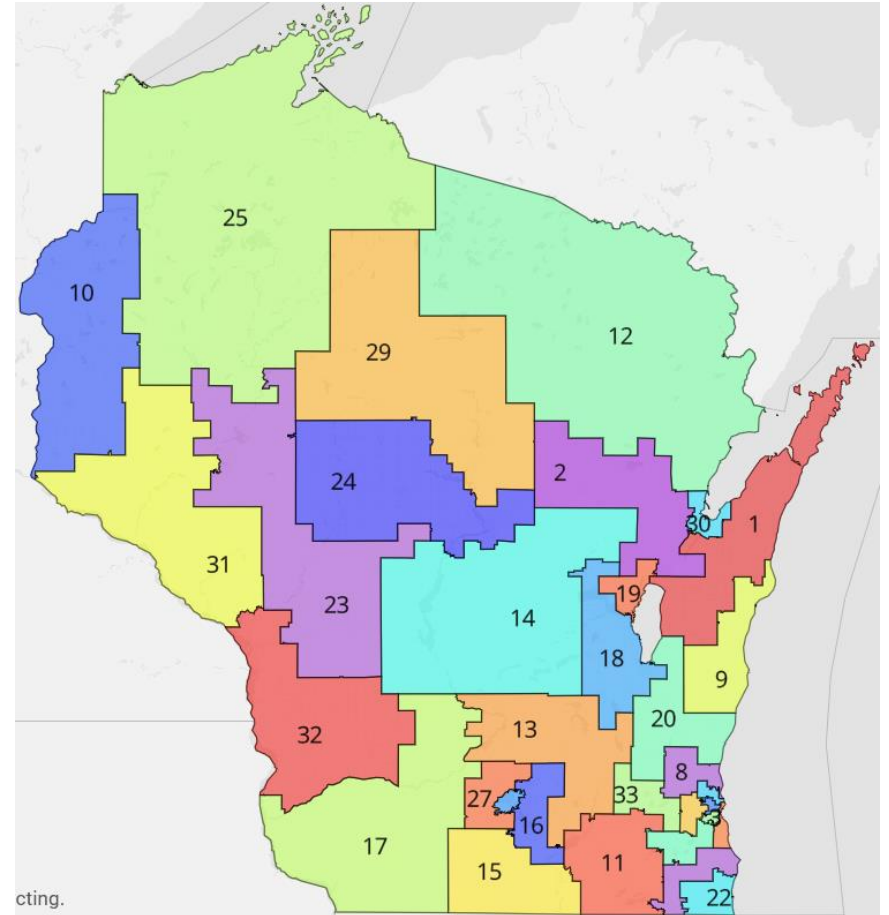
(Images from DavesRedistricting.org)

# Comparing the Seven Map Proposals

For district shapes...



**Johnson assembly districts**

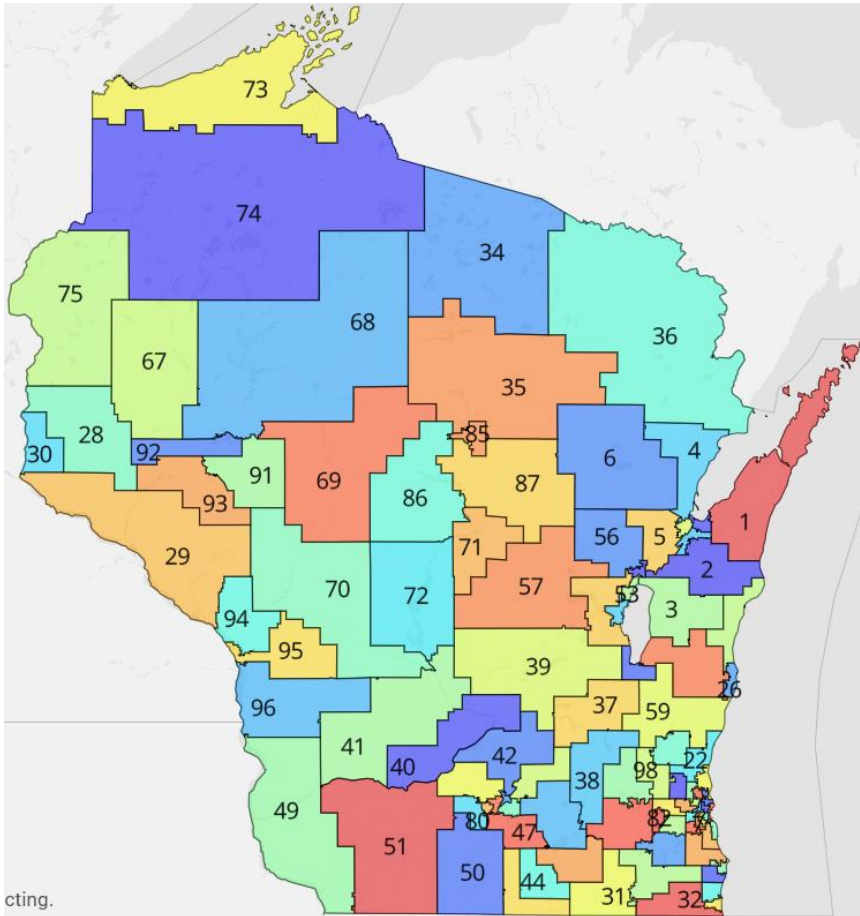


**Johnson senate districts**

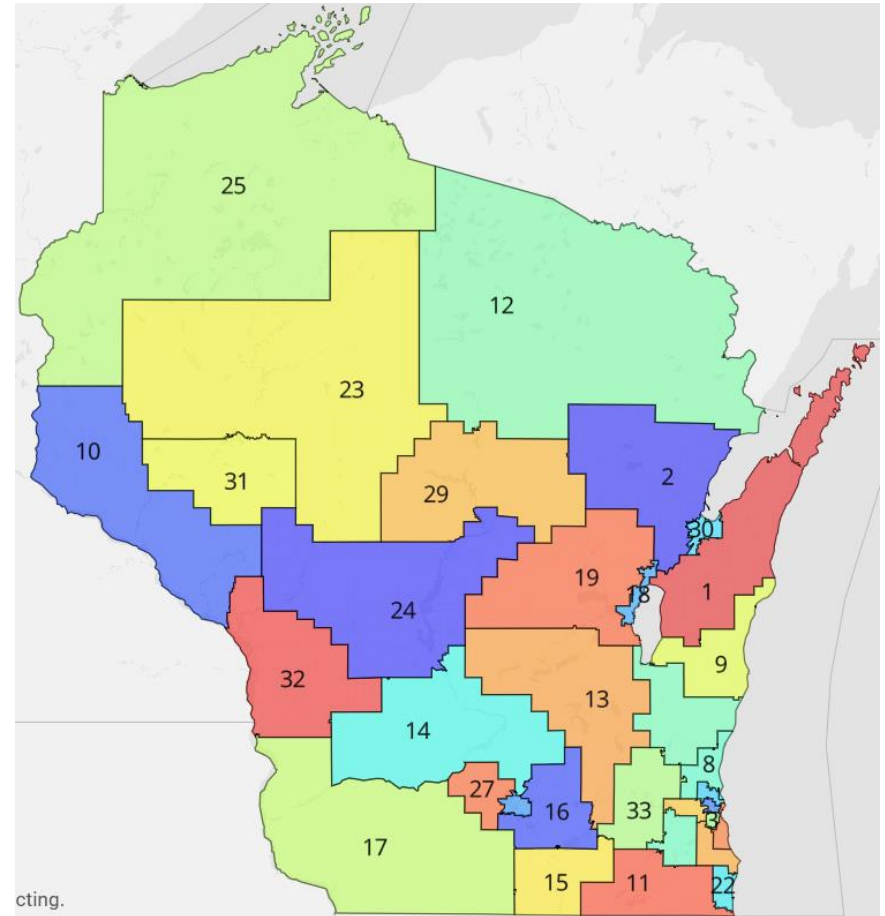
(Images from DavesRedistricting.org)

# Comparing the Seven Map Proposals

For district shapes...



**Evers assembly districts**

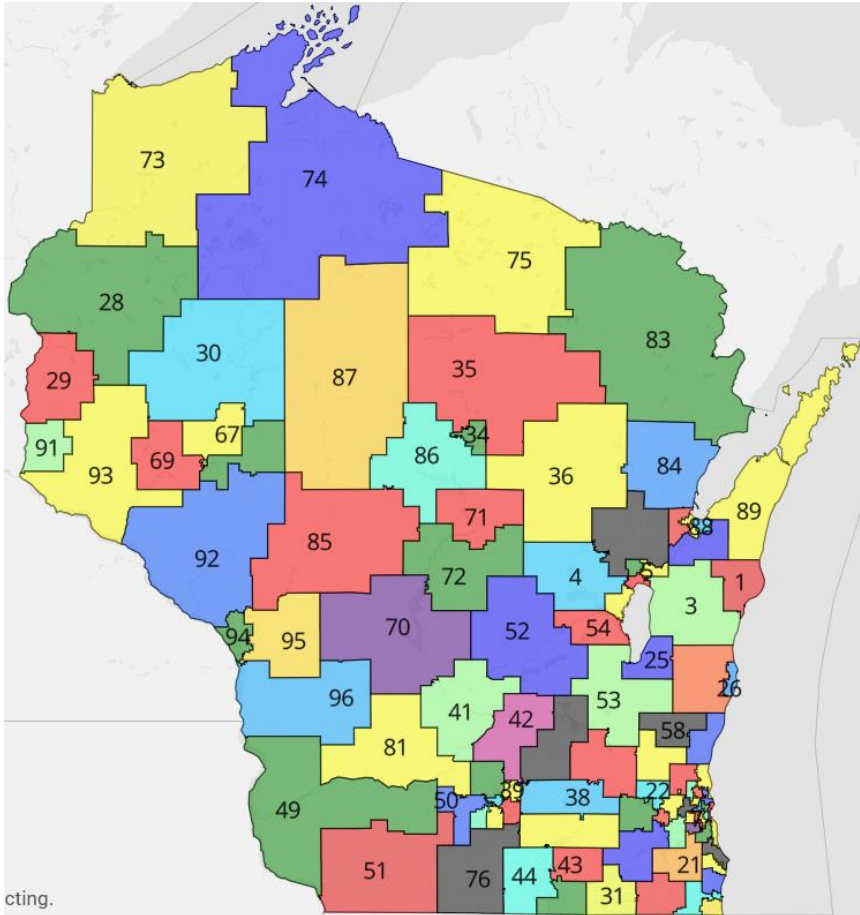


**Evers senate districts**

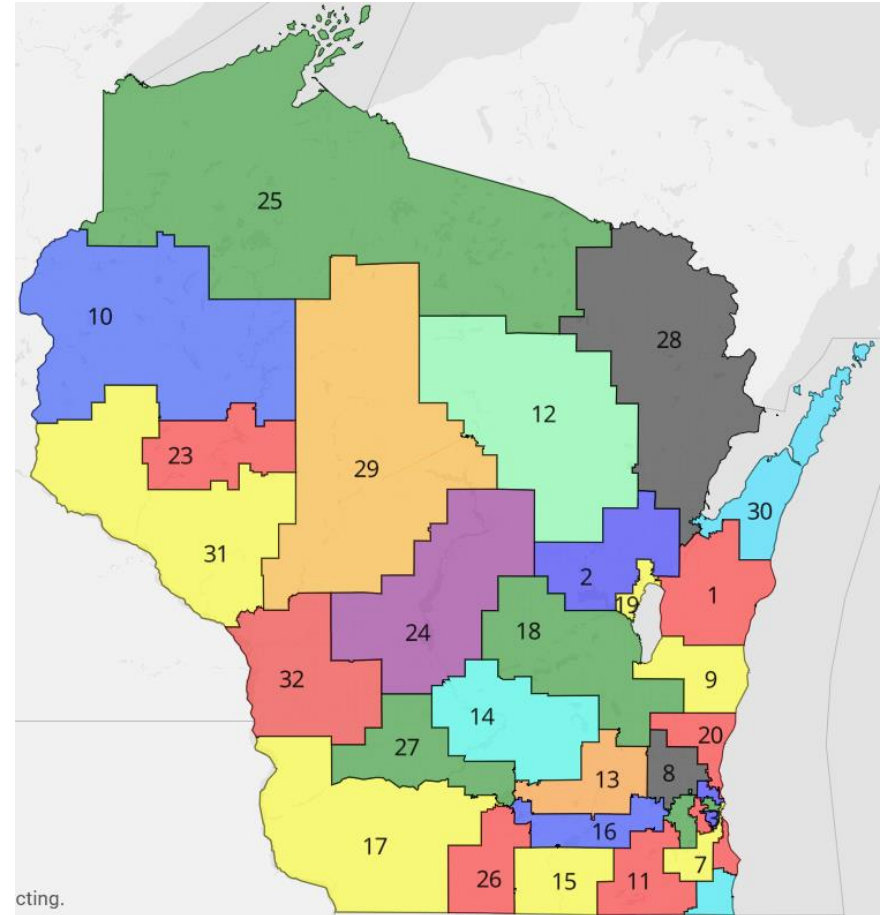
(Images from DavesRedistricting.org)

# Comparing the Seven Map Proposals

For district shapes...



**Petering assembly districts**



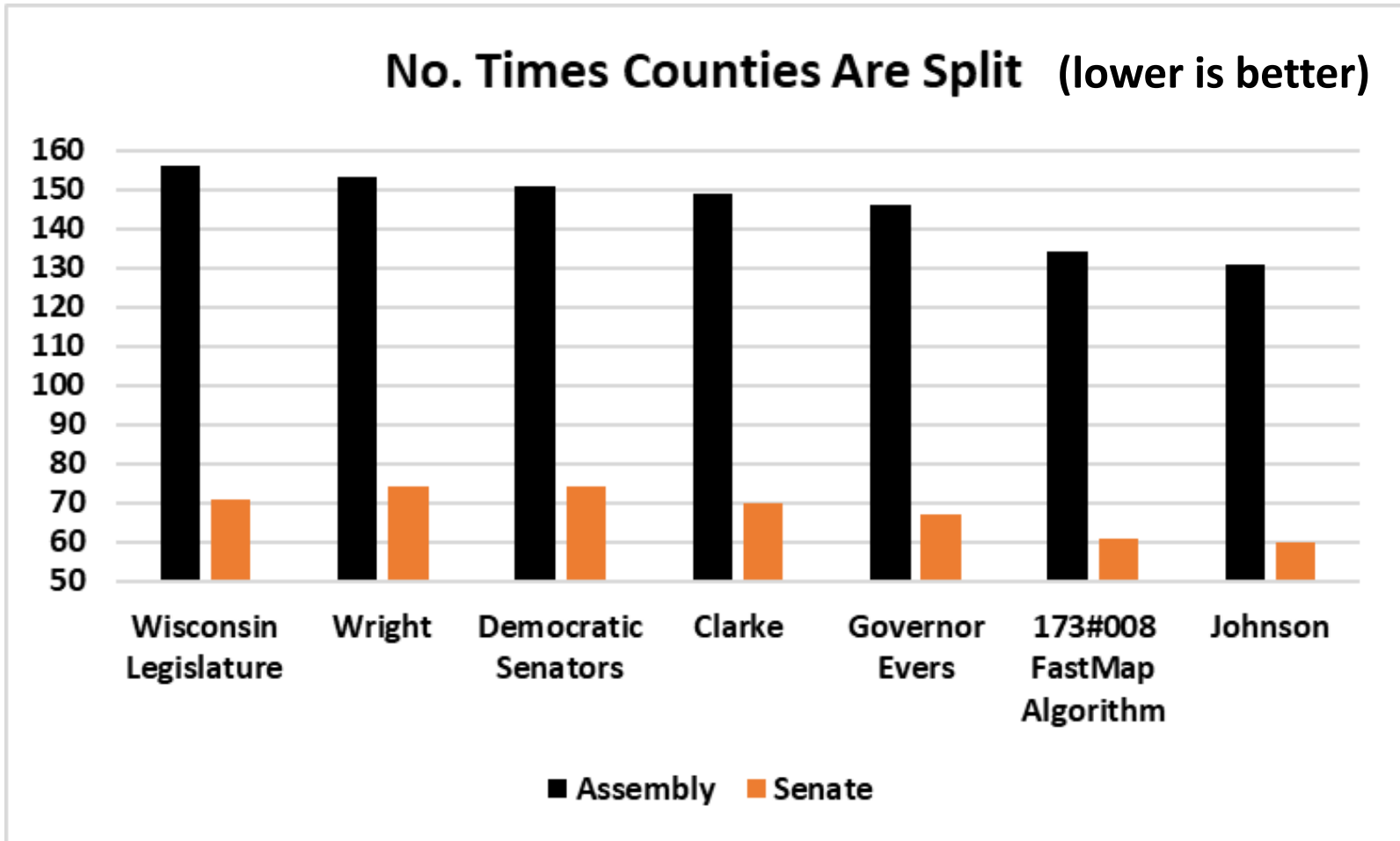
**Petering senate districts**

(Images from DavesRedistricting.org)



# Comparing the Seven Map Proposals

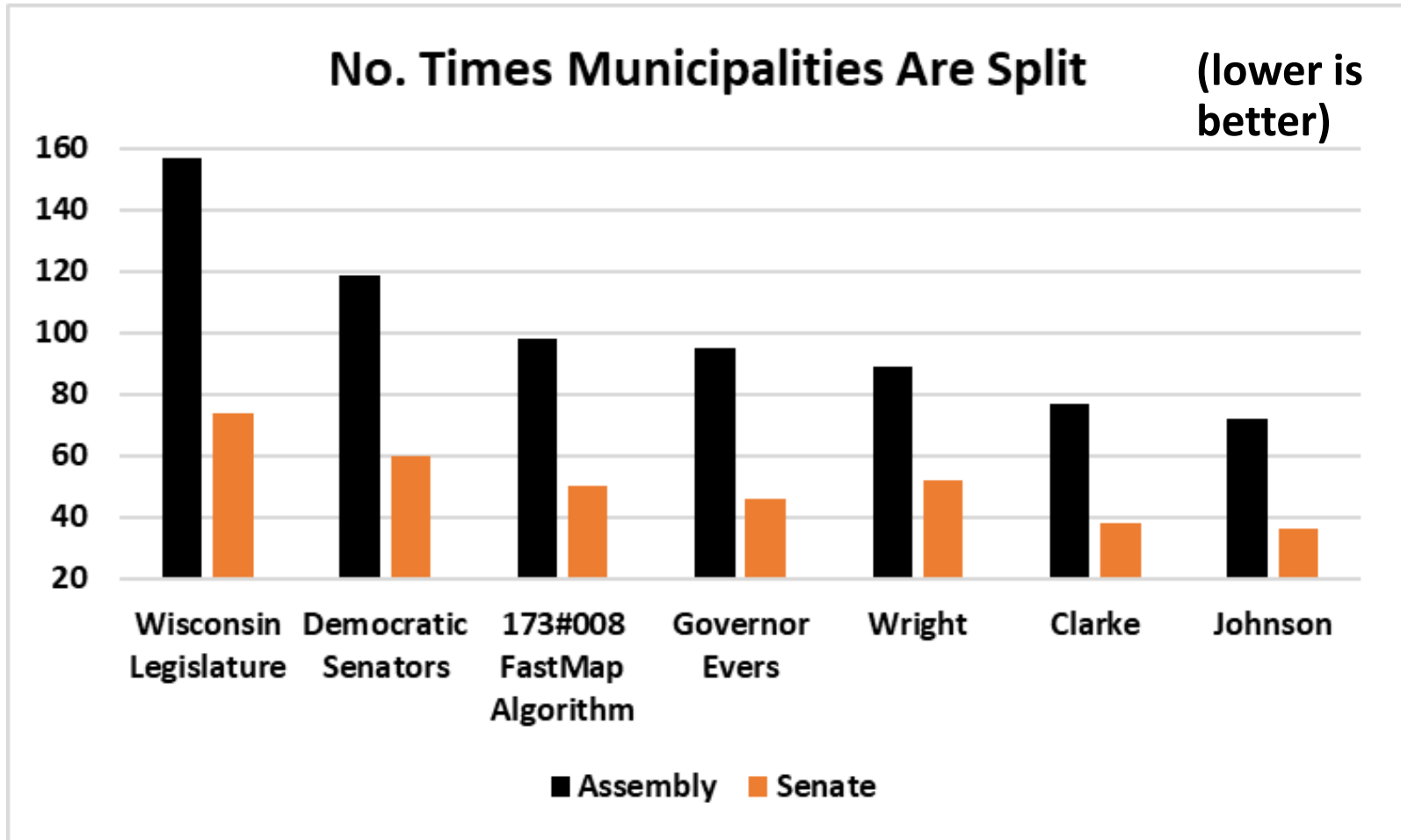
For county splitting...



(from DavesRedistricting.org)

# Comparing the Seven Map Proposals

For municipality splitting...



(from Feb. 1, 2024 report by Court-appointed consultants and Petering's January 12, 2024 expert report)

# Comparing the Seven Map Proposals

## For Native Americans...

Two assembly and two senate districts with the highest Native American voting-age population (VAP) percentages in each proposal (higher is better)

Proposal	Two Asm. Dists. With Highest Native American VAP %		Two Sen. Dists. With Highest Native American VAP %		Sum of Four Native American VAP % Values
	Native American VAP %	Native American VAP %	Native American VAP %	Native American VAP %	
Clarke	74, 6	9.66%, 7.35%	25, 12	6.09%, 5.13%	28.23%
Johnson	74, 6	9.53%, 7.52%	25, 2	6.07%, 5.54%	28.66%
Wisconsin Legislature	36, 74	10.45%, 7.75%	2, 12	5.84%, 5.72%	29.76%
Wright	57, 5	9.67%, 9.64%	25, 2	5.41%, 5.40%	30.12%
Democratic Senators	74, 35	12.77%, 9.21%	25, 12	7.38%, 4.92%	34.28%
Governor Evers	6, 73	12.55%, 9.18%	2, 25	7.52%, 6.42%	35.67%
173#008 FastMap Algorithm	74, 36	14.88%, 12.01%	25, 12	7.08%, 5.23%	39.20%

(from [DavesRedistricting.org](https://davesredistricting.org))

# One Proposal Does Not Satisfy Legal Criteria

Democratic Senators proposal has some noncontiguous districts

Political Neutrality	No. Competitive Districts	Compactness	County Splitting	Municipality Splitting	Native Americans
Petering	Petering	Petering	Johnson	Johnson	Petering
<b>Dem Senators</b>	Johnson	Evers	Petering	Clarke	Evers
Clarke	Wright	Johnson	Evers	Wright	<b>Dem Senators</b>
Wright	<b>Dem Senators</b>	Wright	Clarke	Evers	Wright
Evers	Evers	<b>Dem Senators</b>	<b>Dem Senators</b>	Petering	Legislature
Johnson	Legislature	Clarke	Wright	<b>Dem Senators</b>	Johnson
Legislature	Clarke	Legislature	Legislature	Legislature	Clarke

# Governor Evers Proposal

(Signed into law Feb. 19, 2024)

Rankings for criteria (best at top, worst at bottom):

Political Neutrality	No. Competitive Districts	Compactness	County Splitting	Municipality Splitting	Native Americans
Petering	Petering	Petering	Johnson	Johnson	Petering
Dem Senators	Johnson	<b>Evers</b>	Petering	Clarke	<b>Evers</b>
Clarke	Wright	Johnson	<b>Evers</b>	Wright	Dem Senators
Wright	Dem Senators	Wright	Clarke	<b>Evers</b>	Wright
<b>Evers</b>	<b>Evers</b>	Dem Senators	Dem Senators	Petering	Legislature
Johnson	Legislature	Clarke	Wright	Dem Senators	Johnson
Legislature	Clarke	Legislature	Legislature	Legislature	Clarke

# Governor Evers Proposal

(Signed into law Feb. 19, 2024)

<b>Proposal</b>	<b>Democrats' Chances of Winning a Majority in the Assembly</b>	<b>Republicans' Chances of Winning a Majority in the Assembly</b>	<b>Democrats' Chances of Winning a Majority in the Senate</b>	<b>Republicans' Chances of Winning a Majority in the Senate</b>
Wisconsin Legislature Johnson	15 in a million 1.3%	99.9985% 98.7%	0.3% 2.4%	99.7% 97.6%
<b>Governor Evers</b>	<b>32.2%</b>	<b>67.8%</b>	<b>34.3%</b>	<b>65.7%</b>
Clarke	45.0%	55.0%	38.2%	61.8%
Wright	44.4%	55.6%	38.5%	61.5%
Democratic Senators	19.0%	81.0%	64.2%	35.8%
173#008 FastMap Algorithm	67.5%	32.5%	64.4%	35.6%

(from District Solutions LLC's election simulator)