

# A Catalog of Proportional Systems for BC

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With contributions and editorial assistance from Charles Cares

## Introduction

In choosing one or more proportional voting systems to appear opposite First Past the Post (FPTP) on the upcoming BC referendum on electoral reform, one must sooner or later consider concrete options. This document enumerates eight possible systems and provides a one-page description of each.

The eight selected systems are listed in the table below. Five are forms of Mixed Member Proportional (MMP) that would result in a two-tier legislature consisting of district MLAs and regional MLAs (Systems 1, 2, 3, 5, and 7); the other three maintain a single tier of local MLAs but associate them with multi-member districts. Six of the models use a single-vote ballot (Systems 1 to 6), one introduces a 2nd vote (System 7), and one employs a ranked ballot (System 8). Four of the options entail competition among candidates of the same party (Systems 5 to 8).

System	Name	Regions	Tiers	Ballot	Intra-Party Competition
1	Closed-List MMP <i>with FPTP ballot</i>	4 to 8	2	1-vote	no
2	List-Free MMP <i>with FPTP ballot</i>	4 to 8	2	1-vote	no
3	List-Free MMP <i>with secondary candidates</i>	4 to 8	2	1-vote	no
4	Dual Member Proportional	1 to 5	1	1-vote	no
5	List-Free MMP <i>with rankable candidates</i>	4 to 8	2	1-vote	yes
6	Dual Member Proportional <i>with rankable candidates</i>	1 to 5	1	1-vote	yes
7	Open-List MMP <i>with Bavarian metrics</i>	7 to 8	2	2-vote	yes
8	Single Transferable Vote	16 to 22	1	ranked	yes

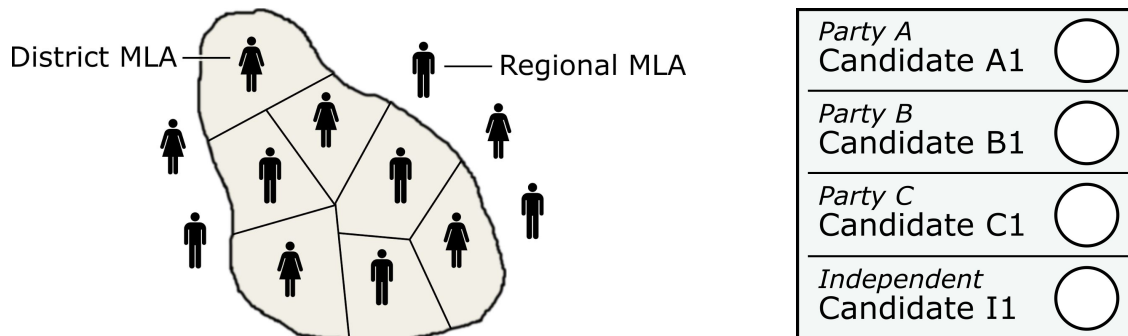
By submitting eight options for consideration, one of my objectives is to steer decision-makers away from inadvertently introducing ticket-splitting tactics into provincial elections. These tactics emerge under certain two-vote MMP models which exclude district votes from the calculations that allocate compensatory seats to parties. Under such systems, many British Columbians would have to endure appeals to give their district votes to a large party and their regional votes to a small party. These appeals would be based on the expectation that the small party could not win at the district level, whereas the large party may win so many district seats that it receives no regional seats. The eight selected systems minimize or avoid tactical considerations of this nature while collectively offering a diverse set of possibilities for voting and representation.

The system descriptions are followed by a discussion, a glossary, and recommended reading.

# System 1: Closed-List MMP *with FPTP ballot*

## Overview

In this simplest of MMP models, the province is divided into 4 to 8 regions, each with a fixed number of seats. Between 50% and 70% of each region's MLAs represent a single-member district within the region, whereas the other MLAs represent the region as a whole. Regional seats are filled by candidates from underrepresented parties according to regional lists prepared by parties prior to the election. The ballot remains the same as in FPTP. Voters mark one option.



## Details

In each district, the candidate with the most votes (the plurality winner) is elected as an MLA representing that district. Regional seats are then allocated to parties in a compensatory manner, meaning that a party's overall share of the seats in the region (district seats plus regional seats) ends up as close as possible to its share of the regional popular vote. Each party's regional seats are assigned to the candidates nearest the top of its party list who have not been elected at the district level. Every district candidate must be given a place on their party's regional list, and must be ranked higher than any list-only candidate. This rule promotes equality between the two types of MLAs, and avoids strategic decisions as to whether the most prominent candidates should be nominated in districts or on the list. This system was outlined as an option for Québec by Louis Massicotte (*In Search of a Compensatory Mixed Electoral System for Québec, 2004*).

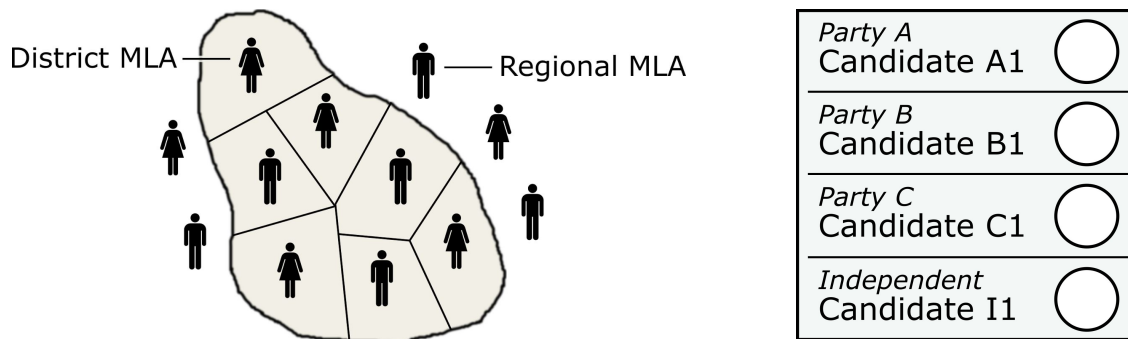
## Opinion

I hesitate to recommend this system for the BC referendum, as the use of closed party lists will be vigorously criticized. Nevertheless, if closed regional lists are to be introduced, this single-vote system is best. The more widely employed two-vote closed-list MMP models produce the same tactical incentives for district votes as FPTP, while in many cases introducing additional incentives to restrict regional votes to parties expected to win few if any district seats. By retaining the FPTP ballot, this MMP model avoids sophisticated tactics while dramatically easing the implementation and use of the new system. I argue that one vote gives electors more power than two in this case, since it allows any party to be effectively promoted in either the district or the regional tier. Applying the model separately in each of 4 to 8 regions, instead of province-wide, makes party lists easier to scrutinize and ensures a more geographically balanced legislature.

## System 2: List-Free MMP *with FPTP ballot*

### Overview

This model is similar to System 1, except that it avoids party lists. Each party's regional seats are filled by their top-performing not-yet elected district candidates. As in System 1, there would be 4 to 8 regions represented by district MLAs and regional MLAs. The ballot remains the same as in FPTP.



### Details

This variant of MMP can be understood by imagining a regional list consisting of all of a party's district candidates. The candidates on this imaginary "list" are ranked after the election strictly according to the percentage of votes they receive in their districts. Thus the best "near-winners" in each underrepresented party are elected as regional MLAs. A very similar system is used in the German state of Baden-Württemberg (see Massicotte 2004), except that in Baden-Württemberg the near-winners are ranked according to the total number of votes they receive instead of the percentage. Using vote shares (percentages) avoids favouring candidates in more heavily populated districts. A good resource for this system is a YouTube video titled [Near Winner Proportional](#).

One rarely discussed necessity is that parties must have the option of nominating an extra candidate in each district. The names of these reserve candidates are made public, and it could be required that they appear on the ballot. In the unlikely event a party wins more seats than the total number of districts in a region, reserve candidates are elected from the districts where the party had its strongest performances. This prevents the party from running out of candidates to fill the seats it is awarded.

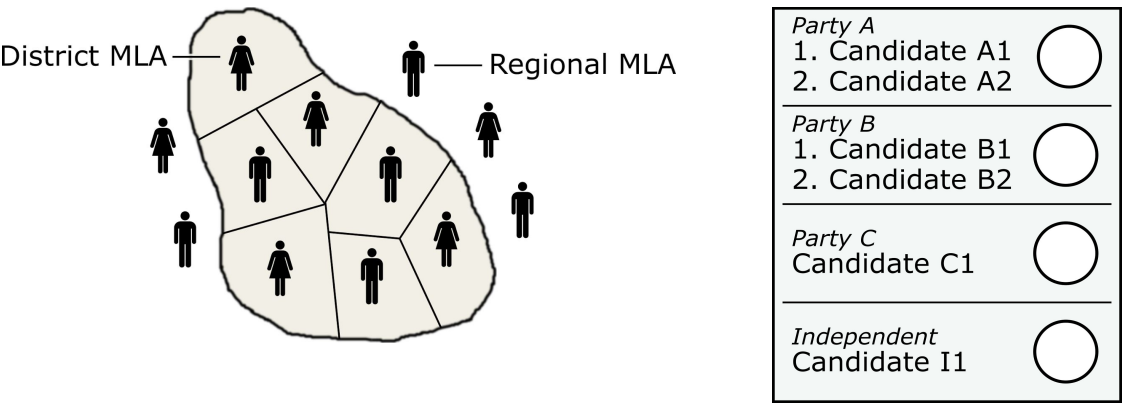
### Opinion

This is a practical option for BC, requiring essentially no change in the exercise of voting, the task of vote counting, or the manner in which candidates are nominated. As with any MMP model, every voter ends up with one district representative (party-affiliated or independent), plus a number of party-affiliated regional representatives. Unfortunately, the regional MLAs will have a strong incentive to prioritize the district they expect to contest in the subsequent election. Moreover, districts featuring close races will tend to produce a greater number of regional MLAs than districts exhibiting overwhelming support for a single party. To some extent, all reasonable MMP models risk introducing a degree of geographic imbalance and a hint of ambiguity as to whether MLAs should be loyal to their districts or the region. These risks may be slightly accentuated with List-Free MMP.

# System 3: List-Free MMP *with secondary candidates*

## Overview

In this variant of List-Free MMP, the reserve candidates of System 2 are replaced by secondary candidates who will have a better chance of being elected. If a party chooses to nominate a secondary candidate in a district, that candidate appears on the ballot below the primary candidate. As in FPTP, voters still mark one option, but a single vote may support two candidates instead of one.



## Details

With votes for two-person teams initially assigned to the primary candidates, all district seats are awarded to the plurality winners. If the winner of a district seat is a primary candidate, the secondary candidate is assigned 50% of the team's vote share and remains in the running. All other secondary candidates in the district are eliminated. The regional MLAs are then elected in the same manner as List-Free MMP (System 2), except that a party's regional seats are awarded to the candidates with the highest vote share regardless of whether they are primary or secondary candidates. It is possible for a regional seat to be assigned to a secondary candidate ahead of a primary candidate of the same party, provided the two competed in different districts.

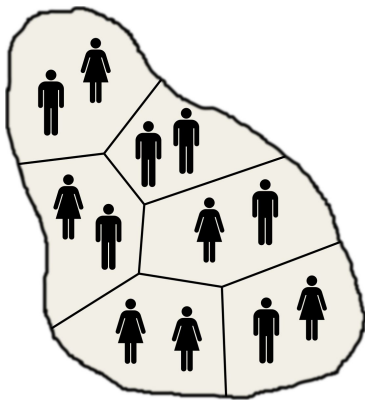
## Opinion

This model improves over System 2 in a number of ways. First, districts exhibiting overwhelming support for a single party are somewhat less disadvantaged in the awarding of regional seats. Second, parties have the option of exhibiting diversity in their local nominations. For example, a party can nominate one man and one woman in every district if it so chooses. Third, the improved opportunity to elect both candidates gives local teams an incentive to compete for every vote, even if they have a commanding lead in the polls.

# System 4: Dual Member Proportional

## Overview

Dual Member Proportional (DMP) is a proportional system with 100% local candidates competing in two-member districts. The 1st MLA elected in every district is the candidate with the most votes, similar to FPTP. The 2nd MLA is determined such that the overall seat distribution closely matches the popular vote. Similar to List-Free MMP, DMP favours near-winners in awarding compensatory seats. The difference is that DMP elects exactly two MLAs in every district. The ballot is the same as in System 3, with a single vote supporting a primary candidate, and potentially a secondary candidate.



<i>Party A</i>	
1. Candidate A1	<input type="radio"/>
2. Candidate A2	<input type="radio"/>
<i>Party B</i>	
1. Candidate B1	<input type="radio"/>
2. Candidate B2	<input type="radio"/>
<i>Party C</i>	
Candidate C1	<input type="radio"/>
<i>Independent</i>	
Candidate I1	<input type="radio"/>

## Details

With votes for two-person teams initially assigned to the primary candidates, the 1st seat in each district is awarded to the plurality winner. If the winner is a primary candidate, 50% of their team's vote share is transferred to the secondary candidate. All other secondary candidates are eliminated. Next, any independent who finishes 2nd is awarded their district's 2nd seat. Then the remaining seats are allocated to the parties in a compensatory manner. Finally, parties are awarded their allocated seats in the districts where their not-yet elected candidates (a) obtained the highest percentages of the local vote, and (b) are not surpassed by opponents in the same district who are themselves being awarded seats in this stage of the process. The end result is that two local candidates—in some cases from the same party—are elected to represent each district. DMP is described at [dmpforcanada.com](http://dmpforcanada.com) and in the full report available on the [How it Works](#) page of that site. It was one of five options on Prince Edward Island's 2016 plebiscite on democratic renewal.

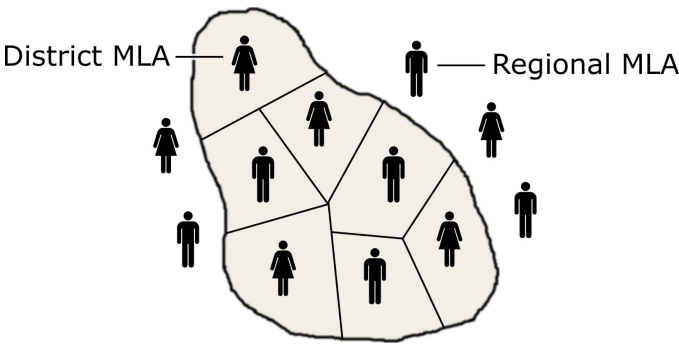
## Opinion

DMP respects tradition by maintaining a simple ballot and keeping all MLAs local in the smallest possible multi-member districts. On the other hand, district-winning candidates are accompanied not necessarily by 2nd-place finishers, but sometimes by 3rd- or 4th-place finishers. It may be challenging to explain how it is that such outcomes are fair and in voters' best interests, but they are the means by which a truly proportional result is achieved. DMP should be applied in 1 to 5 large regions of no fewer than 14 MLAs. Using a single province-wide region would give equal weight to all votes, making it justifiable to add up to 13 seats in rural areas. This would limit the expansion of BC's largest districts.

# System 5: List-Free MMP *with rankable candidates*

## Overview

This model is essentially the same as System 3, but a district's voters decide which of a party's two nominees should be treated as the primary candidate. A voter still marks one 'X' on the ballot, but they may have to indicate a preference between two candidates of their chosen party.



Party A	Candidate A1	<input type="radio"/>
	Candidate A2	<input type="radio"/>
Party B	Candidate B1	<input type="radio"/>
	Candidate B2	<input type="radio"/>
Party C	Candidate C1	<input type="radio"/>
Independent	Candidate I1	<input type="radio"/>

## Details

The first step in the calculations is to determine, for every team of two, which of the two candidates received more votes. This individual is treated as the primary candidate, and the other as the secondary candidate. The votes for both candidates are then combined, and the calculations proceed according to System 3.

## Opinion

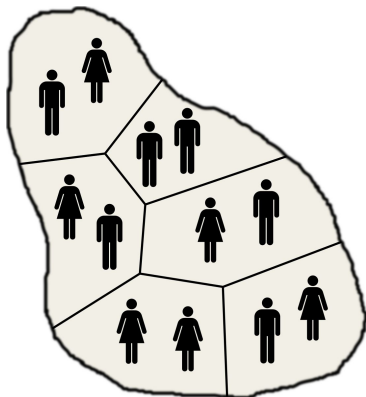
This model produces the same form of representation as System 3 while giving voters more control over the individuals elected to the legislature. One must acknowledge that the experience of voting would change substantially under this model. Some voters may dislike having to choose between candidates of the same party. Some voters may be concerned about vote-splitting between a party's candidates, even though the formula does avoid this problem.

An interesting aspect of this model is that the degree to which it introduces intra-party competition may be largely determined by voter demand. Most parties can choose to nominate only one candidate in the vast majority of districts, and face little risk of running out of individuals eligible for regional seats. By choosing to nominate lone candidates, a party would minimize the number of instances in which its candidates must compete against one another. Nevertheless, a party that runs two local candidates may be perceived as more democratic or more loyal to the district. If British Columbians decide with their votes that parties should let them choose between two nominees, then intra-party competition would become a prominent part of BC elections. Otherwise, most ballots would resemble FPTP ballots with one candidate per party.

# System 6: Dual Member Proportional *with rankable candidates*

## Overview

This model is essentially the same as System 4, except that, in the event a party that has nominated two candidates wins only one of the two district seats, it is the district voters who decide which of that party's two local candidates should be elected. The ballot is the same as in System 5.



Party A	Candidate A1	<input type="radio"/>
	Candidate A2	<input type="radio"/>
Party B	Candidate B1	<input type="radio"/>
	Candidate B2	<input type="radio"/>
Party C	Candidate C1	<input type="radio"/>
Independent	Candidate I1	<input type="radio"/>

## Details

The first step in the calculations is to determine, for every team of two candidates, which of the two candidates received more votes. This individual is treated as the primary candidate, and the other as the secondary candidate. The votes for both candidates are then combined, and the calculations proceed according to System 4.

## Opinion

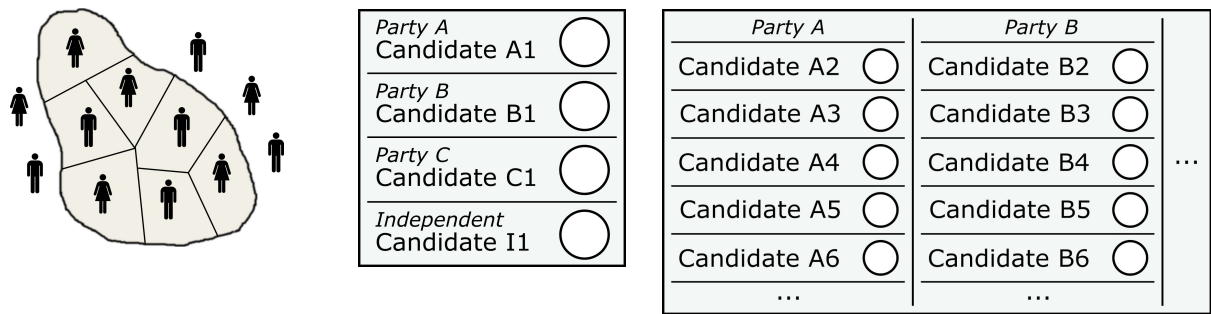
In the same way that System 5 introduces intra-party competition into List-Free MMP, this model introduces intra-party competition into DMP. However, the implications of rankable candidates are slightly different for DMP and List-Free MMP. In DMP, parties are strongly compelled to nominate two candidates. If a party nominates only one candidate in a district that it ends up winning, the party risks forfeiting a seat due to the absence of a not-yet elected candidate in that district. This risk of forfeiting a seat will compel parties to nominate two candidates in a greater number of districts, increasing the likelihood that intra-party competition becomes prominent in BC elections.

Part of the appeal of DMP (System 4) is its simple ballot with no more than one option for every party. I do worry about the voter confusion that may arise if DMP is introduced with the ability to choose between a party's candidates. My intuition is that it would be easier to adopt System 4 first, then transition to this variant at a future date if voters demand the ability to rank local candidates from the same party.

# System 7: Open-List MMP *with Bavarian metrics*

## Overview

Open-List MMP allows voters to directly choose a regional candidate. In this variant of Open-List MMP, the party popularity and candidate popularity metrics are borrowed from the system used in Bavaria. Voters select one option on each of two ballots. The district ballot is the same as in FPTP and Systems 1 and 2. On the regional ballot, the voter supports one candidate on one party's list.



## Details

The district seats go to the local candidates with the most district votes (the plurality winners). The regional seats are first allocated to parties in a compensatory manner, then assigned to their most popular not-yet elected candidates. As in Bavaria, the popular vote used to allocate seats is calculated by adding each party's district and regional votes together. Including district votes in the calculation ensures that both types of votes are of value to large and small parties alike, dramatically reducing the risk of introducing ticket-splitting tactics. To determine who obtains their parties' regional seats, not-yet elected candidates are ranked according to the total number of votes—district votes plus regional votes—that they receive. A district candidate's name appears in the list section of all ballots in the region except those of their own district (since candidates' names already appear in the district section of home-district ballots). List-only candidates are permitted, as otherwise some parties may run out of candidates in certain regions. BC would be divided into 7 or 8 regions, keeping the lists short and alleviating the need for thresholds. Details can be found in the [January 8, 2016 post](#) of Wilfred Day's Blog, which describes the Bavarian model and proposes modifications suitable for elections in Canada.

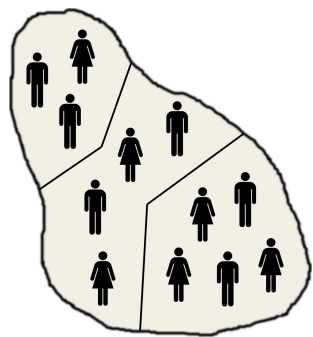
## Opinion

Along with STV (System 8), Open-List MMP is a favourite among proportional representation advocates. However, the variant most often discussed excludes district votes from the calculation that allocates seats to parties. To discourage ticket-splitting tactics, it is important to learn from Bavaria's example and use both ballots to measure party popularity. Some voters may find it onerous to familiarize themselves with regional candidates, so it would be important to communicate that the purpose of the regional ballot is to avoid closed party lists. Open-List MMP would incentivize intra-party competition, particularly among candidates whose best chances of being elected lie at the regional level.

# System 8: Single Transferable Vote

## Overview

The Single Transferable Vote (STV) is the system recommended by the BC Citizens’ Assembly and voted on in 2005 and 2009. Candidates compete within multi-member districts of 2 to 7 seats. Parties may nominate multiple candidates in a district. Voters would ideally rank as many candidates as desired, though if necessary a limit of 10 or so preferences could be imposed.



		1	2	3	4	5	6	7	8	9
Party A	Candidate A1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Candidate A2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Candidate A3	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Party B	Candidate B1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
	Candidate B2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Party C	Candidate C1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Independent	Candidate I1	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Independent	Candidate I2	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>

## Details

STV is a flexible and well-tested system with many educational resources. First, a quota (a certain number of votes) is calculated based on the total number of valid ballots in a district and the number of district seats. If a candidate reaches the quota, they are elected and their “excess votes” (votes in excess of the quota) are transferred to their voters’ next preferences. If no candidate reaches the quota, the least popular candidate is eliminated and their votes are transferred to their voters’ next preferences. The process repeats until the district’s seats are all filled.

## Opinion

Despite its sophisticated formula and poor performance in the 2009 referendum, the endorsement of the Citizens’ Assembly still lends credibility to this option. It is also helpful that there are a number of online videos which effectively explain the calculations. In BC, I suspect the multi-member districts of STV would be easier to design than the larger regions required by Open-List MMP (System 7). Although I regard the single-vote models (Systems 1 through 6) as offering a higher degree of voter equality, STV provides more voters with a local MLA they directly supported as one of their preferences.

## Discussion

Different values and priorities lead to different rankings of the eight presented models. I personally favour systems that prioritize voter equality, maintain simplicity in the tasks of voting and ballot counting, and are likely to achieve widespread acceptance. This leads me to the following ranking of the systems, from most favourable to least:

- System 4: Dual Member Proportional
- System 3: List-Free MMP *with secondary candidates*
- System 8: Single Transferable Vote
- System 7: Open-List MMP *with Bavarian metrics*
- System 5: List-Free MMP *with rankable candidates*
- System 6: Dual Member Proportional *with rankable candidates*
- System 2: List-Free MMP *with FPTP ballot*
- System 1: Closed-List MMP *with FPTP ballot*

As indicated, I most strongly recommend Systems 4 and 3. Both models have the same ballot, where electors cast a single vote that may support a team of two pre-ranked party-affiliated candidates. I regard System 4 (DMP) as the model that creates the most desirable incentives for parties and politicians, and therefore serves voters best. Moreover, the option of ensuring equal vote weight with a province-sized region, and adding up to 13 MLAs in rural areas only, strikes me as a highly principled reform that is only practical with a model similar to DMP. That said, I suspect System 3 (List-Free MMP) to be perceived as less controversial, since the MLAs dedicated to districts are always district winners and never 3rd- or 4th-place finishers. Certainly DMP is the more ambitious option.

After the two models with pre-ranked local candidates, I prefer the two options with multiple votes. STV (System 8) is a well-established model that does, as the Citizens' Assembly concluded, seem well-suited to BC. Open-List MMP (System 7), in my understanding, is used nowhere other than Bavaria. If adopted, it is important to adhere to the Bavarian seat allocation and candidate ranking conventions. I strongly discourage modifications that would exclude district votes from the popular vote calculation, or allow a voter to support the same candidate on both the district and regional ballot.

Of the systems on the bottom half of my list, I feel the two models featuring a pair of rankable party-affiliated candidates deserve consideration. System 5 (List-Free MMP with rankable candidates) in particular seems to provide voters with the opportunity to make MLAs more loyal to constituents by favouring parties that choose to offer competing candidates. I am less enthusiastic about System 6 (DMP with rankable candidates), which would impose intra-party competition on the major parties. If System 4 is adopted first, then System 6 could be evaluated later based on public demand.

Although Systems 2 and 1 have the advantage of retaining the current ballot, they are my least favourite among the eight models. If implemented with a FPTP ballot, List-Free MMP would favour the districts within each region where support is split relatively evenly among two or three parties. Also, the model requires reserve candidates who almost never get elected even if their party performs exceptionally well in their district. I rank System 1 last since the use of closed lists will be perceived by many as giving more power to the parties. Yet in comparison with the status quo, all eight systems would benefit electors by incentivizing competition for every person's vote in every district.

# Glossary

## **District**

A geographic area within which all voters are given the same ballot options (i.e. the same parties and the same candidates). Districts are also known as “constituencies” or “ridings”. Each district elects one district MLA under First Past The Post and Mixed Member Proportional; two district MLAs under Dual Member Proportional; and two or more district MLAs under the Single Transferable Vote.

## **Dual Member Proportional (DMP)**

A proportional voting system featuring two-member districts.

## **First Past the Post (FPTP)**

The non-proportional, plurality voting system currently used for all Canadian federal and provincial elections. Each district elects the candidate with the most votes.

## **Intra-Party Competition**

A feature of certain concrete voting systems whereby voters can choose from among multiple candidates of the same party. This creates an incentive for competition within each party.

## **Mixed Compensatory Electoral System**

A category of voting systems whereby a First Past the Post element is combined with a proportional element, and where the proportional element compensates for underrepresentation caused by the FPTP element. The category includes Dual Member Proportional and Mixed Member Proportional.

## **Mixed Member Proportional (MMP)**

A proportional voting system featuring one MLA dedicated to each district, plus regional MLAs. Closed-List MMP, List-Free MMP, and Open-List MMP differ in the way regional MLAs are elected.

## **Proportional Voting System (Proportional Representation)**

A system that distributes seats to parties or candidates in proportion to the number of votes received.

## **Region**

A geographic area encompassing one or more districts. Proportional voting systems are generally designed to produce proportional outcomes within each region. Larger regions tend to achieve higher degrees of proportionality. Under the Single Transferable Vote, regions and districts are equivalent.

## **Single Transferable Vote (STV)**

A form of proportional representation featuring multi-member districts and a ranked ballot.

## **Ticket-Splitting**

In two-vote MMP, supporting a different party in each tier. This is sometimes done for tactical reasons.

## **Tier**

A set of non-overlapping geographic areas, where each area has one or more dedicated MLAs. First Past the Post, Dual Member Proportional, and the Single Transferable Vote all feature a single tier of districts. Mixed Member Proportional features one tier of districts and a second tier of regions.

## Recommended Reading

Louis Massicotte's 2004 report, *In Search of a Compensatory Mixed Electoral System for Québec*, provides an in-depth examination of mixed compensatory systems of which Systems 1 to 7 are concrete examples. The report specifically discusses Closed-List MMP with a single vote (System 1), which is endorsed; Baden-Württemberg's List-Free MMP (similar to System 2), which is criticized; and Bavaria's Open-List MMP (System 7), which is regarded as overly complex (for Québec in 2004). Regarding the critique of List-Free MMP, I submit that the assignment of compensatory seats based on vote share (Systems 2, 3, and 5) and the introduction of secondary or rankable candidates (Systems 3 and 5) might address the concern that certain districts can be predicted to regularly contribute more MLAs to the legislature than others.

Sean Graham's report, *Dual-Member Mixed Proportional: A New Electoral System for Canada*, is the definitive reference for DMP (System 4). It is available on the [How it Works](#) page of the DMP website ([dmpforcanada.com](http://dmpforcanada.com)). The website itself is also a useful resource on the system.

Wilfred Day's blog ([wilfday.blogspot.ca](http://wilfday.blogspot.ca)) features two posts that are particularly relevant to BC. The [January 8, 2016 post](#) provides a description of Bavaria's Open-List MMP model (System 7) along with recommendations on how it might be adapted for Canadian elections. The [May 13, 2017 post](#) presents a simulation of Open-List MMP in BC, complete with ideas on how to divide the province into 7 or 8 regions. However I note that this 2017 post suggests that regional votes count as votes for the party. With regions as small as those proposed, it is of the utmost importance that both regional votes and district votes for party-affiliated candidates count as votes for the party (as in the 2016 post).