# Options for Yukon's Electoral System

# Executive Summary and Elaboration

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**Executive Summary and Elaboration**

**Introduction**

This paper provides an Executive Summary and Elaboration of the paper "Options for Yukon's Electoral System", prepared for the Special Committee on Electoral Reform, Yukon. In the original paper, three families of electoral system were identified – Plurality/Majority systems, Proportional Representation systems, and Mixed electoral systems. The paper briefly described several electoral system options in each family, identifying some advantages and disadvantages of each. This paper elaborates those electoral system options as they would apply specifically to elections in the Yukon. Although it is acknowledged that one cannot assume a similar vote outcome using a different electoral system as what occurred under first past the post, nonetheless it clarifies the effects of an electoral system if one uses data relevant to the jurisdiction. Therefore, some of the analysis to follow applies different electoral system results based on Yukon elections run under first past the post.

The original paper discussed 4 electoral systems in the plurality/majority family, three in the proportional representation family and two in the mixed electoral system family. The task of choosing among and between electoral system can be daunting when examining such a wide range of options. Therefore, this summary identifies a smaller set of electoral systems that should receive further consideration. In focussing on this smaller set of options, more detailed comparisons among the "potential" options are provided.

**Identifying the main alternatives**

Let's begin with the plurality/majority family of electoral systems. Four options are identified and elaborated. These include first past the post, alternative vote, block vote and two round systems. The current electoral system in Yukon is first past the post, and as the "status quo" option it is obvious that it should remain as one of the alternatives. It is the electoral system against which alternative options should be assessed. It has several strengths – it is well-known, easy to understand, retains a local connection between MLAs and citizens, both in nominating the candidates and in electing members, and it has a demonstrated history in the Yukon of electing majority governments, even when no party wins a majority of votes. Not everyone views this latter feature as an advantage, but many people do. And this is one of the features that most differentiates this electoral system from proportional representation and mixed alternatives, as the latter options are much more likely to produce minority or coalition governments. The principal disadvantage of the first past the post electoral system, especially in a multiparty system, is that results may be distorted. A party may win more or fewer seats in the territory than its share of the votes would suggest.

Among the other options within the plurality/majority family, none of them significantly address the disadvantage of the first past the post system. For example, the alternative vote, block vote and two round systems can be equally distorting when compared to first past the post. Furthermore, none of them have other advantages when compared to first past the post

to elevate them to compelling alternative options. For example, with alternative vote, although this system ensures that the elected candidate has a majority of support, there has not been widespread discussion in the Yukon that vote-splitting (that is, when two similar parties split the vote, thereby enabling a less popular alternative to get elected) has been a major topic of concern. The block vote option, in which people throughout the Yukon vote for all 19 candidates, creates more challenges than it solves. Although block voting may be appropriate in elections to city councils which generally do not have political parties, like it is in Whitehorse municipal elections where the area is smaller and people can get to know the candidates, it is less useful in a vast territory like the Yukon and in which political parties are key parts of the representational landscape. The last of the options in the plurality/majority family, two round systems, again is not very practical in a large, sparsely populated jurisdiction with harsh climate conditions such as the Yukon. It is also known as producing high levels of distortion in election results. Consequently, among the plurality/majority family, only first past the post will receive additional consideration.

Among the proportional representation systems, three options are discussed – list proportional representation (list PR), Single Transferable Vote (STV) and Single Non-Transferable Vote. Perhaps the simplest of these options to eliminate is Single Non-Transferable Vote. As the discussion below demonstrates, the SNTV option falls prey to the same difficulty as first past the post, namely that the result may be highly distorting for political parties. As the example shows, a very popular candidate for one party can detract from the likelihood of other candidates from that party being elected. A possible advantage of this system is that it increases the chance of an independent candidate, or a minor party candidate being elected. But by providing potentially highly distorting results, it is problematic as an alternative to first past the post.

The list PR electoral system contains several advantages. Firstly, it could be implemented without changing the total number of MLAs – a system with 19 MLAs elected by list PR is workable. This electoral system addresses the major disadvantage of first past the post by providing parties with seats proportional to their votes. As can been seen in the discussion below, however, the degree of proportionality increases as the number of seats in the district increases. Applying data from the 2021 election, the result was much more proportional when used with one electoral district of 19 MLAs than it was with 2 electoral districts, one for 11 MLAs in Whitehorse and one for 8 MLAs in the Regions. There may be other disadvantages to having only one electoral district with respect to urban and rural representation overall. A disadvantage of this system is that MLAs are no longer elected from a small constituency. Instead, they represent either the territory as a whole, or are one amongst many MLAs elected from a large constituency. Consequently, constituency representation suffers. In addition, the political parties control the order in which MLAs are elected by providing ranked lists of candidates. The list PR system has enough advantages to retain it as a possible option, especially if combined with first past the post in a mixed system (see below).

The Single Transferable Vote option also provides an effective corrective to the possible vote-to-seat distortion of first past the post and is a corrective to parties' control of the candidate

nomination process as viewed in the list PR system. However, it has problems of its own with relatively large electoral districts (such as one for Whitehorse and one for the Regions). A ballot that requires voters to rank candidates in an electoral district with 11 seats or 8 seats would be daunting, as there may be more than 30 candidates to rank. Therefore, if this system is used, there likely would be a need to divide the territory into four or five electoral districts, in which each district would elect between 3 and 5 MLAs, to make the ballot a reasonable length and complexity. The ballot counting process with STV is complicated, so it would be necessary to provide public education on this topic. STV has enough advantages to be retained for further consideration.

The third of the electoral system families – mixed – has two options, a parallel electoral system and a mixed member proportional (MMP) system. In both instances, two electoral systems are combined to elect MLAs. Under the parallel system, the two systems run separately and in parallel with one another, whereas with MMP, the proportional system is used to compensate for distortions in the plurality system. For these systems to operate, there likely would be a need to increase the number of MLAs, for example from 19 to 30. In this way, the plurality system – first past the post – could include the current 19 seats, with another 11 seats allocated by the second electoral system. The discussion below demonstrated that the parallel system may have little effect in correcting any distortion of the first past the post system, and for this reason should be rejected from further consideration. The MMP system, in contrast, has a particular strength in rebalancing the parties' seats in the legislature based on votes in the election. Therefore, it retains the advantage of constituency representation that exists currently based on the first past the post system, but also ensures the overall distribution of party seats corresponds to the parties' votes. Combining first past the post with list PR in this system would appear to take best advantage of both systems. Indeed, list PR in combination with first past the post would appear to be a better option than list PR on its own.

This suggests the following three options should be considered in further detail as possible electoral system options for the Yukon. Option 1 is first past the post, which is the status quo. Option 2 is Single Transferable Vote, with either 4 or 5 electoral districts. Option 3 is Mixed Member Proportional, in a legislature of up to 30 seats, with 19 seats assigned by first past the post, and 11 seats assigned by list PR.

**Elaborating the Electoral Systems as they apply to Yukon**

1. **Plurality/Majority systems**

Yukon currently uses a plurality/majority system, in the first past the post electoral system. Plurality and majority electoral systems elect MLAs in constituencies, and generally elect one member from each constituency. Where they differ is in whether the elected member needs to receive a majority of votes to be elected, or simply a plurality, which is more votes than any other candidate. Furthermore, majority systems differ in how a candidate can obtain a majority – is it by eliminating candidates with fewest votes and transferring their votes based on their subsequent preferences, or having the top candidates compete in a second, run-off election to

determine the winner? These systems tend to be easy to use and understand and have the advantage of being more likely to produce a majority government, even when no party wins a majority of votes overall. Some critics of plurality/majority systems view this latter tendency as a disadvantage rather than an advantage.

## 1.1 First past the post

This is the system currently in use in the Yukon, in federal elections in Canada, and in all provincial and territorial elections. Divide Yukon into 19 electoral districts. Each electoral district elects one member. Voters vote for one candidate. The person with the most votes in each electoral district wins that district. That person becomes "your representative" in the legislative assembly. Candidates are nominated locally. The following is an example of how this system works at the district level and in the Yukon as a whole.

In district

| Total votes = 1,000 |
| --- |
| Candidate A    250 votes |
| Candidate B    400 votes |
| Candidate C    350 votes |

Candidate B wins. Note that 400 voters voted for the winning candidate and 600 voters voted for the losing candidates.

In Yukon as a whole

Each of the 19 electoral districts elects one person. This system can lead to a distortion between votes and seats if a party wins several seats with less than a majority of votes. The party with the most seats usually forms government. If a party wins more than 50% of seats, they form a majority government. If less than 50% of seats, a minority or coalition government. A coalition is when 2 or more parties have people appointed to cabinet. A minority is when only one party has cabinet positions, but one or more other parties support the party in government. Often, a minority of votes can produce a majority of seats.

## 1.2 Alternative Vote

Divide Yukon into 19 electoral districts. Each electoral district elects one member. Voters rank-order the candidates, identifying first, second, third preferences, etc. To win, a candidate must receive a majority of votes. If no candidate receives a majority based on first preferences, the candidate with the lowest vote total is eliminated, and their second preferences are allocated to the remaining candidates. This process continues until one candidate wins a majority of

votes. That person becomes "your representative" in the legislative assembly. Candidates nominated locally.

In district

| Total votes = 1,000 | First preference | First preference + 2nd preference of Candidate A |
|---|---|---|
| Candidate A | 250 votes | eliminated |
| Candidate B | 400 votes | 450 votes |
| Candidate C | 350 votes | 550 votes |

Candidate C wins. Note that a majority of voters voted for the winning candidate.

In Yukon as a whole

Same as with first past the post. Often a similar amount of distortion as with First-Past-the-Post.

### 1.3 Block Vote

Block Voting takes place in electoral districts with multiple members – there can be as few as one electoral district, with all 19 MLAs elected from that district. There also could be more than one district, for example a system with 2 electoral districts that elects 11 members from Whitehorse and 8 members from outside Whitehorse. It is similar to elections of city council members in some Canadian cities, such as Whitehorse, in which everyone runs in an "at large" election. However, unlike municipalities where there usually are not political parties, Block Vote in a Yukon election would still have political parties. If there were 19 people elected, voters could cast a vote for up to 19 candidates. Candidates are nominated by central party organization.

```
Total voters = 25,000

Candidate                    Party            votes            status

Candidate 1                  Party A          20,000           elected
Candidate 2                  Party A          19,500           elected
Candidate 3                  Party C          19,400           elected
Candidate 4                  Party B          18,900           elected
Candidate 5                  Party A          18,400           elected
Etc …
Candidate 17                 Party C          7,430            elected
Candidate 18                 Party A          6,920            elected
Candidate 19                 Party A          6,810            elected
Candidate 20                 Party B          6,805            not elected
Candidate 21                 Party B          6,800            not elected
Candidate 22                 Party A          6,700            not elected
Etc. …
```

In Yukon as a whole

All candidates are elected from the Yukon as a whole, so there are no "constituency representatives". Candidates from the same party are running against candidates from other parties, but also against candidates from their own party. Can be a highly distorting outcome.

### 1.4 Two-round system

This system likely would be applied with 19 constituencies, each electing one member. Each candidate needs a majority of the votes in their district to win. If no one wins a majority of votes, then the two candidates with the most votes have a second, run-off election between them. Whichever of the two candidates in the run-off election receives a majority of votes, wins the election. Candidates nominated locally.

**Round 1**

Total votes = 2,000

| Candidate | Party | Votes | Status |
|---|---|---|---|
| Candidate 1 | Party A | 725 | Eligible for run-off election |
| Candidate 2 | Party B | 125 | Eliminated |
| Candidate 3 | Party C | 400 | Eliminated |
| Candidate 4 | Party D | 750 | Eligible for run-off election |

**Round 2**

Total votes = 2,000

| Candidate | Party | Votes | Status |
|---|---|---|---|
| Candidate 1 | Party A | 1,050 | Elected |
| Candidate 4 | Party D | 950 | Not elected |

### 2. Proportional Representation systems

All proportional representation systems have multi-member districts. Each party receives a number of seats relatively proportional to the percentage of votes received. The larger the number of members in each district, the more proportional can be the conversion of votes into legislative seats. We'll consider 3 types of Proportional Representation systems – List Proportional Representation (List PR), Single Transferable Vote (STV), and Single Non-Transferable Vote.

### 2.1 List Proportional Representation

The List PR electoral system is the most popular among proportional representation systems. Multiple members are elected from each district, based upon lists in which the candidates are ranked. In a closed list, the party ranks the candidates and voters can choose between parties, but not between candidates. In an open list, voters can choose between candidates and parties.

The following tables present 2 versions of electing candidates with List PR compared to the current first past the post system.

**Members elected in each electoral district**

**Option 1, First past the post** (one member for each electoral district). Voters in each district elect the member from that district.

| | | | |
|---|---|---|---|
| 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | 1 |
| 1 | 1 | 1 | |

**Option 2, 2 electoral districts, Whitehorse + Regions** (11 members in the district of Whitehorse, 8 members in the district of "the Regions"). Voters in Whitehorse elect the members from Whitehorse, voters in the Regions elect the members from the Regions.

Whitehorse    Regions

| | |
|---|---|
| 11 | 8 |

**Option 3, 1 electoral district**. All voters in the Yukon elect all members. In a closed system, members are elected based on the order in which they are ranked by the parties.

All

| |
|---|
| 19 |

Under List PR, take the total number of votes cast in the election and divide by the total number of seats to produce the **electoral quotient**. Then, divide each party's votes by the electoral quotient to determine the number of seats to which the party is entitled. If the resulting seat allocation does not equal the total number of seats, then allocate the remaining seats based on the largest remainder for each party. The following is an illustration of this method using vote totals from the 2016 Yukon election.

| Party | | | | | | |
|---|---|---|---|---|---|---|
| | NDP | Liberal | Yukon | Green | Other | Total |
| Number of votes | 4,927 | 7,404 | 6,272 | 145 | 38 | 18,786 |
| Percent of votes | 26.2 | 39.4 | 33.4 | 0.8 | 0.0 | |

**Option 1. First past the post**

| | NDP | Liberal | Party Yukon | Green | Other | Total |
|---|---|---|---|---|---|---|
| Number of seats | 2 | 11 | 6 | 0 | 0 | 19 |
| Percent of seats | 10.5 | 57.9 | 31.6 | 0.0 | 0.0 | |

**Option 2. List PR, with 2 electoral districts**

| | NDP | Liberal | Party Yukon | Green | Other | Total |
|---|---|---|---|---|---|---|
| Votes, Whitehorse | 3,303 | 4,863 | 3,912 | 85 | 0 | 12,163 |
| Seats, Whitehorse | 3 | 4 | 4 | 0 | 0 | 11 |
| Votes, Regions | 1,624 | 2,541 | 2,360 | 60 | 38 | 6,623 |
| Seats, Regions | 2 | 3 | 3 | 0 | 0 | 8 |
| Seats, Total | 5 | 7 | 7 | 0 | 0 | 19 |
| Percent of seats | 26.3 | 36.8 | 36.8 | 0.0 | 0.0 | |

**Option 3, List PR with one electoral district**

| | NDP | Liberal | Party Yukon | Green | Other | Total |
|---|---|---|---|---|---|---|
| Number of votes | 4,927 | 7,404 | 6,272 | 145 | 38 | 18,786 |
| Number of seats | 5 | 8 | 6 | 0 | 0 | |
| Percent of seats | 26.3 | 42.1 | 31.6 | 0.0 | 0.0 | |

**Allocation of Seats, Option 3**

| Party | Votes | 1st Allocation of seats | Votes/seat (989) * seats | Remaining votes | 2nd allocation of seats | Final Seat Total |
|---|---|---|---|---|---|---|
| NDP | 4,927 | 4 | 3956 | 971 | 1 | 5 |
| Liberal | 7,404 | 7 | 6923 | 481 | 1 | 8 |
| Yukon | 6,272 | 6 | 5934 | 338 | 0 | 6 |
| Green | 145 | 0 | | 145 | 0 | 0 |
| Other | 38 | 0 | | 38 | 0 | 0 |
| Total | 18,786 | 17 | | 2 | 19 | |

Observations. In the 2016 election, the Yukon Liberal party received 39.4% of the votes. In first past the post electoral system, this produced 11 Liberals being elected and a majority government. Under both List PR methods, the proportion of votes was closer to the proportion of seats for all parties. With 2 electoral districts, the Liberal and Yukon parties each receive 7 seats, and the NDP receive 5 seats, which would lead to a minority or coalition government. The Liberal party was somewhat under-rewarded and the Yukon party over-rewarded in this instance. With one electoral district, the Liberal party receives 8 seats compared to the Yukon party's 6 seats, and 5 seats for the NDP, producing proportions closer to the vote totals. Once again, the outcome is a minority government. In addition, under this system, there is no guarantee of seats for any region of the Yukon.

## 2.2 Single Transferable Vote (STV)

The Single Transferable Vote system uses multimember districts and enables voters to vote for individual candidates by indicating their rank-order preference for each candidate. Candidates are elected when their vote total crosses the "threshold", which is the minimum of votes needed to guarantee election. If a candidate receives more votes than the threshold, they are elected. Furthermore, all their votes above the threshold are transferred to other candidates, based on the preferences of those voters. After each round of counting ballots, the candidate with the lowest vote totals is eliminated, and the subsequent preferences of their supporters are distributed to remaining candidates. The threshold is calculated as the total number of ballots cast divided by the number of seats plus one, and one is added to this amount [threshold = (votes/(seats + 1)) +1].

To illustrate, suppose there were 2 electoral districts in Yukon, one for the 11 Whitehorse seats and one for the 8 seats in the rest of the territory, called the Regions. Voters in the Regions would receive a ballot for electing 8 candidates. Each party could nominate up to 8 candidates and there could be independent candidates as well. With three parties, this would mean there were at least 24 candidates, and with four parties, at least 32 candidates (assuming each party nominated the maximum number of candidates). There also could be smaller parties that nominated only one or two candidates, to maximize the votes for those candidates. For simplicity of presentation, let's assume an electorate with 4000 voters and 3 seats. The election would proceed as follows: calculate the threshold as [(votes/(seats + 1)) + 1]. Thus threshold = [(4000/(3+ 1)) + 1] = (4000/4) + 1 = 1000 + 1 = 1001. Once a candidate receives 1001 votes, they are elected, and their "surplus" votes can be redistributed. As well, the candidate with the lowest vote total is eliminated and their votes redistributed based on the voters' preferences, following each round of counting. The vote counting could proceed as follows:

| Candidate | Party | 1st count | 2nd count Transfer Dell's votes | 3rd count Transfer Gallant's votes | 4th count Transfer Fortney's votes | 5th count Transfer Clarke's votes |
|---|---|---|---|---|---|---|
| Abbott | Party A | 570 | 570 | +10 580 | 580 | +20 600 |
| Brock* | Party A | 990 | 990 | 990 | 990 | +100 1090 |
| Clarke | Party A | 120 | 120 | 120 | 120 | ---- |
| Dell* | Party B | 1050 | 1001 | 1001 | 1001 | 1001 |
| Elliott | Party B | 250 | +49 299 | 299 | +9 308 | 308 |
| Fortney* | Party C | 910 | 910 | +100 1010 | 1001 | 1001 |
| Gallant | Indep. | 110 | 110 | ---- | ---- | ---- |

*Elected candidate


| Proportionality | 1st ballot | | |
|---|---|---|---|
| | Votes | Vote% | Seat % |
| Party A | 1,680 | 42.0 | 33.3 |
| Party B | 1,300 | 32.5 | 33.3 |
| Party C | 910 | 22.8 | 33.3 |
| Independent | 110 | 2.8 | 0.0 |

Observations. The STV electoral system provides voters with the ability to choose among parties and among candidates in each of the parties. Each of the elected candidates has achieved the electoral threshold. The counting system tends to be quite complex, even in a simple example with seven candidates and three seats. It is much more so if there were two electoral districts, with 8 and 11 seats each, or one electoral district with 19 seats. In the current example, there is a lower level of proportionality with first preference rankings, in part because subsequent preferences are considered. Parties may also behave strategically and nominate less than the full slate of candidates.

### 2.3 Single Non-Transferable Vote (SNTV)

The Single Non-transferable Vote electoral system is sometimes categorized among proportional representation systems and sometimes as an "other" system. It is similar to a block vote electoral system, with multi-member electoral districts, but unlike block bote, where voters can cast a ballot for each seat elected from the district, in SNTV, the voter casts only one vote. Seats are awarded based on the largest number of votes obtained by the candidates, and therefore candidates are elected based on the number of votes they receive. This also implies that candidates are elected based on the proportion of votes they receive. Thus, the proportionality of seats is based on the proportionality of candidate votes, not on the proportion of a party's vote. It is a system that can reward minor parties and encourages all parties to act strategically in the nomination of candidates.

To illustrate a SNTV system, imagine the following hypothetical distribution of votes and seats for the following 6 candidates, when 1,000 votes are cast and where four candidates are elected:

| Candidate | Party | Votes |
|---|---|---|
| | | |
| 1 | A | 300 |
| 2 | A | 90 |
| 3 | B | 200 |
| 4 | B | 180 |
| 5 | C | 120 |
| 6 | D | 110 |
| | | |

Of the 1,000 votes, candidate 1 finished with the most votes, 300, followed by candidates 3, 4 and 5. These are the four candidates that would be elected. But consider that happens when looking at the outcome from the perspective of votes obtained by each party:

| Party | Votes | Vote % | Seats |
|---|---|---|---|
| | | | |
| A | 390 | 39.0 | 1 |
| B | 380 | 38.0 | 2 |
| C | 120 | 12.0 | 1 |
| D | 110 | 11.0 | 0 |

Observations. In this hypothetical election, party A received 39% of the votes, but only one seat, compared to party B receiving 38% of the votes and two seats. The single candidate for party C received only 12% of the votes, but obtained one seat, as many as party A with 39% of the votes. The votes among party B candidates were more evenly distributed than among party

A candidates, enabling it to win two seats. Therefore, the proportionality of the system characterizes the seat distribution among candidates more so than among parties. It provides a greater opportunity for minor parties to obtain representation.

### 3. Mixed Electoral Systems

Mixed electoral systems are those in which candidates are elected to the legislative assembly using different electoral systems – some are elected by one method, and others are elected by another method. The idea is that while all electoral systems have advantages and disadvantages, combining more than one electoral system can help moderate the disadvantages that exist with any single system. Mixed electoral systems tend to combine some seats from a plurality or majority system, with others using a proportional system. In doing so, the system can ensure a direct connection between voters and representatives that exists with a constituency-based system, with less distortion than can occur with the first past the post system due to some seats being allocated proportionally.

### 3.1 Parallel systems

A parallel electoral system, as the name implies, is where legislators are elected using two separate electoral systems that are not connected to one another. Some of the representatives could be elected by a first-past-the-post system, and others by a list PR system. The voter would have two ballots and would cast one ballot for the representative in their district, and another for the party they prefer. Imagine that the 2021 Yukon election was run using a parallel system, that the results of the constituency contests were the same as occurred in 2021, and that the party vote was the same as the overall party vote in 2021. Assume further that the legislative assembly has 30 seats, 19 of which are elected by first-past-the-post, and 11 by list PR, with a single district in the Yukon. The result would be as follows:

| Party | Votes | Vote % | Constituency seats | Constituency seat % | List seats | Total seats | Total seat % |
|-------|-------|--------|-------------------|--------------------|-----------|-------------|--------------|
| NDP | 5356 | 28.2 | 3 | 15.8% | 3 | 6 | 20% |
| Liberal | 6155 | 32.4 | 8 | 42.1% | 4 | 12 | 40% |
| Yukon | 7477 | 39.3 | 8 | 42.1% | 4 | 12 | 40% |
| Indep. | 26 | 0.1 | 0 | 0.0% | 0 | 0 | 0% |

When allocating the list PR seats, a party's share of the vote is multiplied by the number of list PR seats to be allocated. For the NDP, this produces 11 * .282 = 3.1 seats, which rounds down to 3 seats. For the Liberals, 11 * .324 = 3.6, which rounds up to 4 seats. For the Yukon party, 11 * .393 = 4.3, which rounds down to 4 seats.

Observations. A parallel electoral system would likely require adding more seats to the Yukon legislature, to ensure there is a reasonable number of seats available through the list PR part of the process. Notice, however, that even with an increase of over 50% in the number of seats,

from 19 to 30, the election results from 2021 were not significantly different under the parallel system than they were under first-post-the-post. Since the two electoral systems are run separately, the list PR portion may have a limited impact overall in increasing proportionality.

### 3.2 Mixed Member Proportional (MMP)

The mixed member proportional system also uses two electoral systems to elect MLAs, but unlike the parallel system, the two electoral systems are linked, with the expectation that the List PR seats will compensate for any distortion produced by the first past the post system. Those parties that are under-rewarded by the first past the post seats will receive greater compensation from the list PR seats. Under an MMP system, voters can either have separate ballots for the constituency seats and list PR seats or can use the same ballot.

This example uses data from the 2021 Yukon election to demonstrate how the MMP system would allocate seats, assuming 19 constituency seats and 11 list seats, for a total of 30 seats. Also, we assume that the list PR seats are allocated based on the total constituency votes. To determine the seat allocation for each party, divide their vote total by a sequence of odd numbers. A party is assigned a seat whenever its product is largest among the parties. The calculations to determine seat allocation for each party proceed as follows:

| Divisor | NDP Votes | NDP seat # | Liberal votes | Liberal seat # | Yukon votes | Yukon seat # | Indep votes | Indep seat # |
|---|---|---|---|---|---|---|---|---|
| 1 | 5356 | 3 | 6155 | 2 | 7477 | 1 | 26 | |
| 3 | 1785 | 6 | 2052 | 5 | 2492 | 4 | | |
| 5 | 1071 | 9 | 1231 | 8 | 1495 | 7 | | |
| 7 | 765 | 13 | 879 | 11 | 1068 | 10 | | |
| 9 | 595 | 16 | 684 | 14 | 831 | 12 | | |
| 11 | 487 | 20 | 560 | 18 | 680 | 15 | | |
| 13 | 412 | 23 | 473 | 21 | 575 | 17 | | |
| 15 | 357 | 27 | 410 | 24 | 498 | 19 | | |
| 17 | 315 | | 362 | 26 | 440 | 22 | | |
| 19 | 282 | | 324 | 30 | 394 | 25 | | |
| 21 | 255 | | 293 | | 356 | 28 | | |
| 23 | 232 | | 268 | | 325 | 29 | | |
| 25 | 214 | | 246 | | 299 | | | |
| Total seats | | 8 | | 10 | | 12 | | |

This calculation shows that the NDP is allocated 8 seats, the Liberals 10 seats and the Yukon party 12 seats. Based on the constituency votes for 2021, the first-past-the-post system awarded 8 seats to the Liberals, 8 to the Yukon party and 3 to the NDP. Therefore, the list PR seats are awarded as follows:

| Party | Constituency seats | Total seats | List PR seats | % votes | % seats |
|---|---|---|---|---|---|
| NDP | 3 | 8 | 5 | 28.2% | 26.7% |
| Liberal | 8 | 10 | 2 | 32.4% | 33.3% |
| Yukon | 8 | 12 | 4 | 39.3% | 40.0% |
| Other | 0 | 0 | 0 | 0.1% | 0.0% |

Because under the MMP system the list PR seats are allocated in a way that compensates any possible distortion caused by the first past the post seats, they may be allocated very differently, depending on the results of the constituency contests. To show this effect, let's run the same analysis using data from the 2002 Yukon election, in which the Yukon party won a majority government with 12 of 18 seats. To keep the total number of seats at 30, assume there are 12 list PR seats for this example.

| Divisor | NDP Votes | NDP seat # | Liberal votes | Liberal seat # | Yukon votes | Yukon seat # | Indep. votes | Indep seat # |
|---|---|---|---|---|---|---|---|---|
| 1 | 3763 | 3 | 4056 | 2 | 5650 | 1 | 535 | 14 |
| 3 | 1254 | 6 | 1352 | 5 | 1883 | 4 | | |
| 5 | 753 | 10 | 811 | 8 | 1130 | 7 | | |
| 7 | 538 | 13 | 579 | 12 | 807 | 9 | | |
| 9 | 418 | 18 | 451 | 16 | 628 | 11 | | |
| 11 | 343 | 21 | 369 | 20 | 514 | 15 | | |
| 13 | 289 | 25 | 312 | 23 | 435 | 17 | | |
| 15 | 251 | 28 | 270 | 26 | 377 | 19 | | |
| 17 | 221 | | 239 | 30 | 332 | 22 | | |
| 19 | 198 | | 213 | | 297 | 24 | | |
| 21 | 179 | | 193 | | 269 | 27 | | |
| 23 | 164 | | 176 | | 246 | 29 | | |
| Total seats | | 8 | | 9 | | 12 | | 1 |

If one compares the vote proportions in the two elections – 2002 and 2021, they are quite similar. The Yukon party got 40.4% of the votes in 2002 and 39.3% in 2021. The Liberals received 29.0% in 2002 and 32.4% in 2021. And the NDP got 26.9% in 2002 and 28.2% in 2021. But the first past the post system produced very different results, with the Yukon party getting a majority government and 12 of 18 seats in 2002, but only 8 of 19 seats in 2021. Even more dramatically, the Liberals received only one seat in 2002, but 8 seats, and a minority government in 2021. Under the MMP system, in contrast, the election results were remarkably

similar, in both instances with the Yukon party receiving about 40% of seats, and the Liberals and NDP about 30% each.

| Party | Constituency seats | Total seats | List PR seats | % votes | % seats |
|---|---|---|---|---|---|
| NDP | 5 | 8 | 3 | 26.9% | 26.7% |
| Liberal | 1 | 9 | 8 | 29.0% | 30.0% |
| Yukon | 12 | 12 | 0 | 40.4% | 40.0% |
| Other | 0 | 1 | 1 | 0.1% | 3.3% |

**Comparing qualities of three major options**

Beyond the mechanics of how each of the electoral systems work, described above, is the question of the practical impacts of adopting a new electoral system. For example, do voters still have "their MLA" after an election, to whom they can turn if they have a problem or issue that needs to be addressed? Is the party system likely to remain the same or change because of adopting a new electoral system? Is government going to be stable, with elections taking place at regular four-year intervals, or is it likely that a different electoral system produces less stable government and more frequent elections? Although it is not possible to know with certainty what the impacts of changing the electoral system will be on these and other matters, nonetheless each electoral system has tendencies, and these can be assessed to identify some likely effects of changing the electoral system.

The following table identifies some of the likely impacts of the three types of electoral systems – first past the post, single transferable vote (STV), and Mixed Member Proportional (MMP). The assumption is that the MMP system would elect some members (perhaps up to 19) using first past the post, and other members (perhaps up to 11) using list PR, with closed party lists. The qualities of the electoral systems described below are neither inherently good or bad – rather they simply are tendencies. It is up to the people of the Yukon to decide whether taken as a whole, which electoral system provides the features that most align with the goals they have for their electoral system.

| Feature | First past the post | Single Transferable Vote | Mixed Member Proportional (MMP) |
|---|---|---|---|
| | | | |
| Number of MLAs | 19 | 19 | 25 - 30 |
| Constituency-based MLAs? | Yes | Yes, but multiple MLAs elected from larger constituencies | Yes, some MLAs elected in constituencies, and some elected from party lists |
| How many constituencies? | 19 | Probably 4 or 5 | 19, plus additional MLAs elected from party lists |
| Proportionality between votes and seats | Similar to today, there can be distortion | Not necessarily highly proportional | Very high level of proportionality |
| Likelihood of forming majority government | Very likely | Not very likely | Unlikely |
| Likelihood of minority or coalition government | Unlikely. Most Yukon elections under FPTP have produced a majority government | Quite likely, since it is easier for minor parties to be elected | Quite likely, since it is rare for a party to win a majority of votes |
| Ease of electing minor party candidates and independents | Difficult | Fairly easy | Difficult, especially if there are thresholds for list PR seats |
| Does each constituency have its own MLA? | Yes | Each constituency has multiple MLAs, perhaps up to 5, who are likely from different parties | Yes, each constituency has one MLA, plus there are some MLAs who are elected from the Yukon as a whole, and don't represent a constituency |
| Will this system produce stable government? | Yes, experience has demonstrated this system produces stable government | The number of parties in the legislature will likely increase, and require the government party to negotiate an agreement with one or more smaller parties | It remains difficult in the way MMP would be applied in the Yukon for minor parties to become successful. The government party would often require the support of another party. |