

# Proportional Representation Voting System

A large, light gray watermark of the Victorian Electoral Commission (VEC) logo is centered on the page. The logo consists of a large, rounded, light gray shape that resembles a stylized 'V' or a semi-circle. Inside this shape, the letters 'VEC' are written in a bold, white, sans-serif font. The 'V' is slanted, the 'E' is blocky, and the 'C' is a simple curve.

**VEC**

## **The Proportional Representation Counting System**

The proportional representation counting system to be used for multi member electorates in local government is similar to that is used to elect members of the Australian Senate. However, there will be no change to the layout of the current Local Government ballot paper. Candidates will continue to be listed on the ballot paper in an order determined by a random ballot conducted by the returning officer. Voters must record their order of voting preference for all candidates. There is no above and below the line voting as there is for the Australian Senate and the City of Melbourne election of Councillors.

As with other proportional representation voting systems the counting of votes under this system is a complex and time consuming procedure. Only the essential features of the system are outlined here.

### **Election of Councillors**

The essential features of the proportional representation system are as follows:

1. To secure election, candidates must secure a quota of votes. The quota is determined by dividing the total number of formal first preference votes in the count by one more than the number of Councillors to be elected for the ward and increasing the result by one.
2. Should a candidate gain an exact quota, he or she is declared elected and his or her ballot papers are set aside as finally dealt with as there are no surplus votes.
3. For each candidate elected with a surplus, commencing with the candidate elected first, a transfer value is calculated for all his or her ballot papers. All those ballot papers are then re-examined and the number showing a next available preference for each of the continuing candidates is determined. Each of these numbers of ballot papers is multiplied by the transfer value. The resulting numbers, ignoring any fractional remainders, are added to the continuing candidates respective progressive totals of votes.
4. Where a transfer of ballot papers raises the number of votes obtained by a candidate up to a quota, the candidate is declared elected. No more ballot papers are transferred to that elected candidate at any succeeding count.
5. When all surpluses have been distributed and vacancies remain to be filled, and the number of continuing candidates exceeds the number of unfilled vacancies, exclusion of candidates commences.
6. Steps (3) through (5) are continued, as necessary, until either all vacancies are filled or the number of candidates in the count is equal to the number of vacancies remaining to be filled. In the latter case, the remaining candidates are declared elected.

### **Description of Scrutiny**

1. Using this method of proportional representation a candidate is elected on receiving a number of votes equal to or exceeding a quota. When a candidate is elected with surplus votes over and above the quota, those votes are not wasted, but are transferred on. All of the elected candidate's ballot papers are transferred to continuing candidates according to the next preference but each is regarded as representing only a fraction of a vote. This process

continues until the required number of candidates have obtained a quota and are elected.

2. The quota is calculated by dividing the total number of formal ballot papers by one more than the number of candidates to be elected and adding one to the result, disregarding any remainder.

e.g. Say there are 3 councillors to be elected from 3000 formal votes.

$$\text{The quota} = \frac{3000}{(3+1)} + 1 = 751$$

3. For each candidate elected with a surplus of first preference ballot papers over the quota, a transfer value of these surplus ballot papers is calculated by dividing the successful candidate's surplus first preference votes by the total number of the candidate's first preference ballot papers (the transfer of surplus votes start with the first elected candidate).

e.g. If Smith gains 1000 votes when the quota is 751 the surplus votes total 249.

$$\text{Their transfer value is: } \frac{249}{1000} = 0.249$$

4. All ballot papers for the elected candidate are then re-examined and the number of next available preference votes for each of the continuing candidates is determined and multiplied by the transfer value. The resulting numbers, rounded down to the nearest whole number, are added to the continuing candidates' respective numbers of first preference votes.

e.g. Smith's 1000 ballot papers gave 500 ballot papers to Jones.

As the transfer value is 0.249 Jones receives 124 votes.

(500 x 0.249); the remainder is ignored.

Again, a candidate is elected when the number of votes obtained exceeds or equals the quota

5. When a candidate is elected by gaining a quota through a transfer of votes, a transfer value is then calculated for that candidate's surplus. This is done by dividing the surplus votes by the total number of ballot papers the candidate has received (first preferences plus transferred ballot papers).

e.g. Jones received 700 first preference votes and 124 votes on transfer giving Jones a total of 824 votes. Therefore, Jones reaches a quota (751 votes) and is elected with 73 surplus votes (824 votes minus 751 votes = 73 votes).

The total number of ballot papers received by Jones is 1200 (700 first preferences + 500 transferred from Smith)

$$\text{Their transfer value is: } \frac{73}{1200} = 0.060$$

This transfer value is applied to Jones's ballot papers which are then transferred to continuing candidates according to the next available preferences shown on the ballot papers.

6. When transfers have been completed in respect of all candidates who obtained a surplus above a quota as a result of the above procedures, the candidate who has the fewest votes is excluded and that candidate's ballot papers are distributed to the remaining continuing candidates according to the next available preferences. All ballot papers received by the candidate at a particular transfer value are transferred together, beginning with those with a transfer value of 1 and ending with the ballot papers of the lowest transfer value. The above steps continue until either all vacancies are filled or all candidates except a number equal to the number of vacancies remaining have been elected or excluded. In the latter case unexcluded candidates not already elected are declared elected.

e.g. Brown received 227 votes after the surplus votes from Smith and Jones have been distributed.

	Votes	=	Value
1 <sup>st</sup> Preference votes for Brown	200	=	200
Votes transferred from Smith @ the value of 0.249	100	=	24
Votes transferred from Jones @ the value of 0.060	50	=	3
<b>TOTAL VOTES</b>			227

At this stage of the scrutiny Brown has the least number of votes and is excluded from the count.

Brown's ballot papers are re-examined starting with the 1<sup>st</sup> preference votes and the number showing a next available preference for each of the continuing candidates is determined.

Each of these ballot papers are transferred at the value they were received.

- the 200 first preference votes are transferred to the remaining candidates at the value of 1
- the 100 votes transferred to Brown from Smith are transferred to the remaining candidates at the value 0.249
- the 50 votes transferred to Brown from Jones are transferred to the remaining candidates at the value 0.060

The resulting numbers, ignoring any fractional remainders, are added to the continuing candidates respective progressive totals of votes.