

# Proportional representation detailed

## Local government elections



**Northern Territory  
Electoral Commission**  
EVERY vote counts!

### A detailed explanation of how votes are counted:

The proportional representation (PR) vote counting system is designed to ensure that vacant positions are allocated as near as possible in proportion to the votes received. A candidate is elected after obtaining a quota or proportion of the formal vote.

### The quota

The quota is calculated by dividing the total number of formal ballot papers in the count by one more than the number of vacancies available, adding one and ignoring any fractional remainder.

$$\text{Quota (Q): } Q = \frac{\text{Total number of formal ballot papers}}{\text{Number of vacancies} + 1} + 1$$

**Example:** 999 formal ballot papers, 3 vacancies

$$Q = \frac{999}{3 + 1} + 1 = 250.75 = \mathbf{250}$$

The formal ballot papers are examined to determine the number of first preference votes each candidate has received. Each first preference on a ballot paper is worth one vote.

If a candidate:

- has received a number of votes which equal or exceed the quota, the candidate is elected\*
- is elected with exactly the same number of votes as the quota, these ballot papers are set aside as there is no surplus (votes in excess of the quota) to distribute
- gains more votes than the quota, the surplus votes are not wasted, but transferred or passed on to continuing candidates (candidates not already elected or excluded from the count) provided there are still vacancies to fill.

\* A candidate may obtain quota by gaining either

- a number of first preference votes equal to or greater than the quota
- or**
- a combination of first preference votes and votes transferred from elected and/or excluded candidates.

### Surplus votes

Candidates who receive a quota, or more, of first preference votes are elected immediately. The surplus votes of these elected candidates are transferred to continuing candidates according to the next available preference shown on the ballot papers. These ballot papers are distributed at a fraction of their value. Other candidates may now become elected.

If two or more candidates are elected at the same stage of the count, the candidate with the largest surplus is said to be elected first. The surplus votes of a candidate elected at an earlier count are always transferred before the surplus of a candidate elected at a later count.

Surplus ballot papers, when transferred, do not keep their original value of 1. The *value* of each transferred ballot paper is calculated by dividing the surplus votes of the elected candidate by the total number of ballot papers received by that candidate.

***Transfer value (TV) for surplus ballot papers:***

$$TV = \frac{\text{No. of surplus votes (of the elected candidate)}}{\text{Total formal ballot papers received by that candidate}}$$

***Example:***

- ♦ Quota = 250
- ♦ Candidate has 275 votes from 325 ballot papers
  - 240 full preference votes (including first preferences and those from excluded candidates)
  - 35 votes from 125 ballot papers from a candidate elected at an earlier count
- ♦ Surplus votes = 25 (275 – 250)

$$TV = \frac{25}{325} = .076923 \text{ (6 decimal places, not rounded up or down)}$$

**Votes lost by fraction**

The transfer of ballot papers with a transfer value of less than 1 may result in a loss of votes. This occurs when ballot papers with a next available preference for a particular continuing candidate are multiplied by the transfer value and the result is a number with a remainder. These remainders are ignored. When several remainders occur, they can add up to a loss of whole votes and this is recorded on the scrutiny sheet.

**Exclusions**

After all surpluses of elected candidates have been distributed, and if vacancies remain, the candidate with the least number of votes is excluded and removed from the count.

The preferences on ballot papers of the candidate with the least number of votes are examined and the ballot papers passed on to candidates remaining in the count according to the next available preference. Ballot papers are transferred as follows:

- the excluded candidate's first preference ballot papers are transferred first at the full value of one vote each
- ballot papers received as a result of the transfer of a surplus are passed on at the same vote value as they were received i.e. at the surplus transfer value.

During an exclusion, each parcel of ballot papers received by the excluded candidate at different stages of the count process is transferred to continuing candidates as a separate count.

### Finalising the count

The process of distributing surpluses of elected candidates and excluding candidates continues until all vacancies have been filled or:

- if the number of continuing candidates is equal to the number of vacancies remaining unfilled, all those candidates are declared elected or,
- if there are only two candidates remaining for the last vacancy, the candidate with the highest number of votes is elected.

### Some PR count principles

- Ballot papers at the first count have a value of 1.
- No ballot papers can be given to an elected or excluded candidate.
- Fractional remainders are ignored i.e. 250.75 votes for a quota is recorded as 250.
- Ties **during** the course of a count will be determined either by reference to the last count at which there was a difference in votes or; if no difference, a draw by lot.
- If there are less than 150 ballot papers in the count, the number of first preference votes received by each candidate is multiplied by 100 and the resulting numbers used for any counting or calculation. This reduces the number of votes lost by fraction, described above.