



INSTRUCTIONS - HOW TO READ PROPORTIONAL REPRESENTATION RESULTS

- Open PDF proportional representation results – Chan Ward 2017. These are the actual results from the 2017 City of Darwin council elections for the Chan Ward. As far as proportional representation results pages go, this is quite small, with many running over several pages.
- You will need to have completed and understood the preferential voting activity first. There are similar steps when counting votes using the proportional representation system.
- To win this election (Chan Ward requires 3 representatives, so 3 winners) each candidate must reach the QUOTA. This is similar to the absolute majority (50% + 1) amount in preferential elections.
- The quota has been calculated just above Table 2 in the results page →
(total formal votes / number of positions + 1) + 1
The + 1 in red just means “more than” so you don’t actually have to add a whole 1 to the result, you just have to round up to the next whole number.
The first three candidates to reach the quota of 1788 will win this election.
- The result page should be looked at as two main tables and are labelled *Table 1: count of preferences and calculation of transfers* and *Table 2: distribution of the effective votes*. Table 2 is where the running total of votes can be found, Table 1 is secondary and used for calculations.
- The first line, Count 1, shows the results after all ballot papers were counted according to their number one votes only (first preferences).
- One candidate has already reached the quota at Count 1, so Robin Knox (RN) is the first candidate to be elected.
- In order not to waste votes, any votes that RN received over the quota are seen as ‘surplus’ and are put back into the count. So this amounts to $2677 - 1788 = 889$ votes.
- These 889 votes are distributed according to their number 2s. Rather than pick a random 889 ballot papers from the pile, ALL RN’s 2677 ballot papers are distributed according to the number 2s (at Count 2 on Table 1).
- The amount given to each remaining candidate is then multiplied by a *transfer value* to find out what proportion of RN’s surplus votes they will actually receive.
- The transfer value is calculated by: winning candidate’s surplus votes / winning candidate’s total formal votes.
- In this example RN’s transfer value is $889 / 2677 = 0.332088$ (always to 6 decimal places).
- This transfer value is then multiplied by RN’s distributed surplus votes (Count 2 on Table 1) for each of the remaining candidates and this outcome is found at Count 2 on Table 2.
- E.g. Peter Pangquee $955 \times 0.332088 = 317$, Emma Young $1038 \times 0.332088 = 344$ etc.
- Any decimal places are dropped, do not round up. They are counted though and can be seen in the “Votes lost through fractional remainder” column in Table 2.
- These distributed RN votes are then added to each candidate’s votes for a running total, e.g. Peter Pangquee $1486 + 317 = 1803$, Emma Young $1207 + 344 = 1551$ etc.

- At this point, a second candidate has reached the quota, so Peter Pangquee (PP) is the second person to be elected.
- So as not to waste any votes, PP's surplus votes will be put back in the count. PP's surplus votes are 15 ($1803 - 1788 = 15$).
- On Table 1, ALL of the votes given to PP (his number 1s and all the number 2s from RN $1486 + 955 = 2441$) are distributed according to their number 2s (unless PP received the number 2, then it goes to the number 3 choice).
- Again, 15 surplus votes are not randomly chosen, all votes are distributed according to the next preference and then only a 'proportion' of these will added to the running totals.
- For PP's votes, the transfer value is $15 / 2441 = 0.006145$ (6 decimal places).
- All of PP's distributed votes at Count 3 on Table 1 are multiplied by 0.006145 and put into Count 3 on Table 2. These are added to the running totals.
- E.g. Emma Young $1577 \times 0.006145 = 9$, Nathan Land $286 \times 0.006145 = 1$
- After adding PP's transferred surplus votes, no candidate has reached the quota. Therefore we follow similar steps to the preferential counting system.
- Which of the remaining candidates has the lowest number of votes at this point (at Count 3 on Table 2) → Paul Eustance (PE).
- So PE is excluded from the count. All of his votes will be distributed, but in separate steps – first his number 1s, then the surplus votes he received from RN, then the surplus votes he received from PP.
- Count 4 on Table 1 shows the distribution of the 261 first preference votes PE got. As these are not surplus, they are transferred at full value to the remaining candidates. These are added to the running totals in Table 2 at Count 4.
- Count 5 in Table 1 distributes the 109 second preference votes he received from RN (all the votes he received from RN, not just the transferred proportion of votes). These are distributed in total in table 1, then multiplied by RN's transfer value and placed into Table 2, where they are added to the running totals.
- Count 6 in Table 1 distributes the 148 preference votes that PE received from PP. These are multiplied by PP's transfer value, placed into Table 2 at Count 6 and added to the running total. (PP's transfer value is so low that all the preferences are transferred as 0).
- At no time from Count 3 to Count 6 did any candidates reach the quota. Now PE's votes have been exhausted. We are still seeking the third winning candidate, so the preferential counting system steps are repeated.
- Which of the remaining candidates has the lowest number of votes at this point (at Count 6 on Table 2) → Michael Tsangaris (MT).
- So MT is excluded from the count. All of his votes will be distributed, but in separate steps – first his number 1s, then the surplus votes he received from RN, then the surplus votes he received from PP, then the 3 lots of votes he received from PE (PE's number 2s, PE's surplus votes from RN, PE's surplus votes from PP).
- Count 7 on Table 1 shows the distribution of the 333 first preference votes MT got. As these are not surplus, they are transferred at full value to the remaining candidates. These are added to the running totals in Table 2 at Count 7
- Count 8 in Table 1 distributes the 117 second preference votes MT received from RN (all the votes he received from RN, not just the transferred proportion of votes). These are distributed in total in table 1, then multiplied by RN's transfer value and placed into Table 2 at Count 8, where they are added to the running totals.

- Count 9 in Table 1 distributes the 143 preference votes that MT received from PP. These are multiplied by PP's transfer value, placed into Table 2 at Count 9 and added to the running totals. (PP's transfer value is so low that all preferences are transferred as 0).
- Count 10 distributes the 92 votes that MT received from PE's first preference count. These are not surplus votes so they are transferred at full value to the remaining candidates to Count 10 on Table 2, and added to the running totals.
- Count 11 on Table 1 distributes the 29 votes MT received from PE (at Count 5) which were the surplus votes PE received from RN. These are then transferred at RN's transfer value (as they were originally her votes) at Count 11 in Table 2 and added to the running totals.
- Count 12 on Table 1 distributes the 37 votes MT received from PE (at Count 6) which were the surplus votes PE received from PP. These are then transferred at PP's transfer value at Count 12 on Table 2 and added to the running total.
- At no time from Count 7 to Count 12 did any candidates reach the quota. Now MT's votes have been exhausted. We are still seeking the third winning candidate, so the preferential counting system steps are repeated.
- Which of the remaining candidates has the lowest number of votes at this point (at Count 12 on Table 2) → Nathan Land (NL).
- So NL is excluded from the count. All of his votes will be distributed, but in separate steps. First NL's first preference votes from Count 1 are distributed to all candidates and transferred at full value to Table 2 at Count 13, and added to the running totals.
- A third candidate has reached the quota – Emma Young. No more counting is required.