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# Ranked Ballots

City of Markham – General Committee  
January 16, 2017

# Disclaimer

- This presentation provides general information in plain language about the *Municipal Elections Act, 1996* and O.Reg. 310/16.
- This presentation should not be considered legal advice and is not meant to replace provincial legislation. For more specific information, please refer to the relevant legislation and regulations which can be found online at [www.e-laws.gov.on.ca](http://www.e-laws.gov.on.ca).
- As local facts and circumstances are variable, users should obtain their own legal and professional advice when specific issues arise.

# General Requirements

- Municipalities have been provided with the option of using ranked ballots starting in the 2018 municipal election.
- Ranked ballots must be used for all offices on council Consultation requirements:
  - Open house
  - Public meeting
- Deadline to pass by-law is May 1 in the year before the year of the election Upper tier can authorize only if all constituent lower tiers are using (deadline is July 1, 2017)

# Considerations by Council

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- When deciding whether to pass a by-law, council must consider the following:
  1. The costs to the municipality of conducting the elections
  2. The availability of technology (voting and vote-counting equipment)
  3. The impact the proposed by-law would have on election administration
- Deadline to pass alternative voting and equipment by-laws is May 1 (same as ranked ballot by-law deadline) in the year before the election

# Consultation

# Public Education

The following information must be provided to the public:

- detailed description of how the elections would be conducted, including a description of how votes would be distributed to candidates based on the rankings marked on ballots
- estimate of the costs of conducting the elections
- description of the voting equipment and vote-counting equipment that is being considered
- description of any alternative voting method being considered

# When does Consultation Occur?

- Notice of the open house must be published in a newspaper at least 30 days in advance
- Notice of the public meeting must be published in a newspaper at least 30 days in advance
- Open house must be held at least 15 days before the public meeting
- Municipalities have the discretion to include other consultation methods, including a question on the ballot, but are still required to hold an open house and public meeting.



# Rankings

# Maximum Number of Rankings

- By-law may specify the maximum number of rankings
- Number of rankings may be different for different offices
- If no maximum specified, the default maximum is three
- Electors do not have to rank the maximum number

# Interpreting Rankings

- Rankings are considered in order of preference indicated
- If the same candidate is given more than one ranking, only the highest of those rankings is considered
- If a voter skips a ranking, the next highest preference is considered
- If a voter gives two candidates the highest ranking, the ballot is rejected.
- If the voter indicates a highest preference, and gives two candidates a subsequent preference (e.g. puts two candidates second) the ballot is counted in the first round but becomes exhausted if transferred

# Vote Counting

# Vote Counting – Establishing the Threshold

- The first step in vote counting for both single and multi-member is establishing the threshold for the office.
- Formula:  $[\text{valid ballots cast} / (\text{seats} + 1)] + 1$
- Ballots cast does not include declined or rejected ballots
- The threshold is only calculated once – it does not change for subsequent rounds

# Examples of Calculating the Threshold

Formula:  $\lceil \text{ballots cast} / (\text{seats} + 1) \rceil + 1$

1000 voters electing 1 candidate:

$\lceil 1000 / (1 + 1) \rceil + 1 = 501$  votes needed to win

1000 voters electing 2 candidates:

$\lceil 1000 / (2 + 1) \rceil + 1 = 334$  votes needed to win

1000 voters electing 3 candidates:

$\lceil 1000 / (3 + 1) \rceil + 1 = 251$  votes needed to win

500 voters electing 4 candidates:

$\lceil 500 / (4 + 1) \rceil + 1 = 101$  votes needed to win

# Vote Counting – Single Member

# Single Member - Example

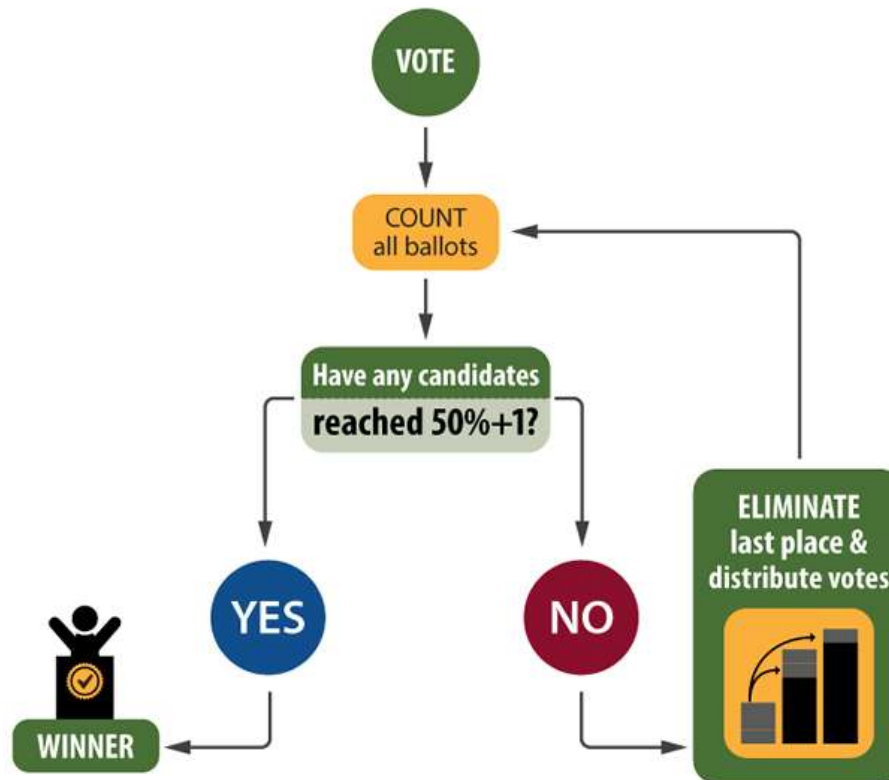
<https://www.youtube.com/watch?v=oHRPMJmzBBw>

Single-member election: Ministry Exercise

- <http://www.mah.gov.on.ca/Page11118.aspx>



# Single Member – Overview



# Single Member – Example

## Single-member election: an election where one candidate is elected

In this election, you are being asked to vote on the kind of fruit that will be served as a snack.

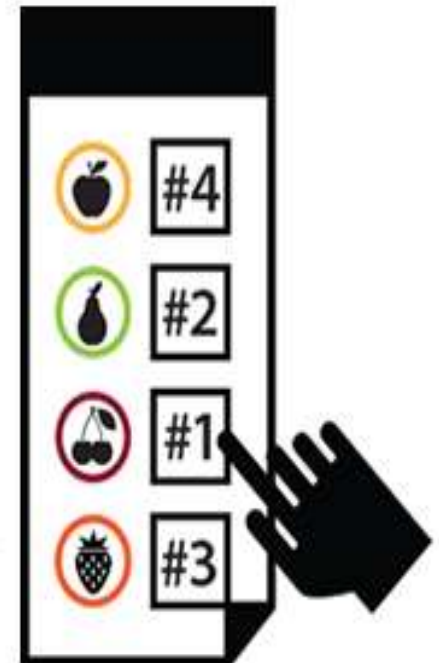
### Ranking the ballot

With ranked ballots you can rank your choices from your most preferred to least preferred option. You rank the choices as follows:

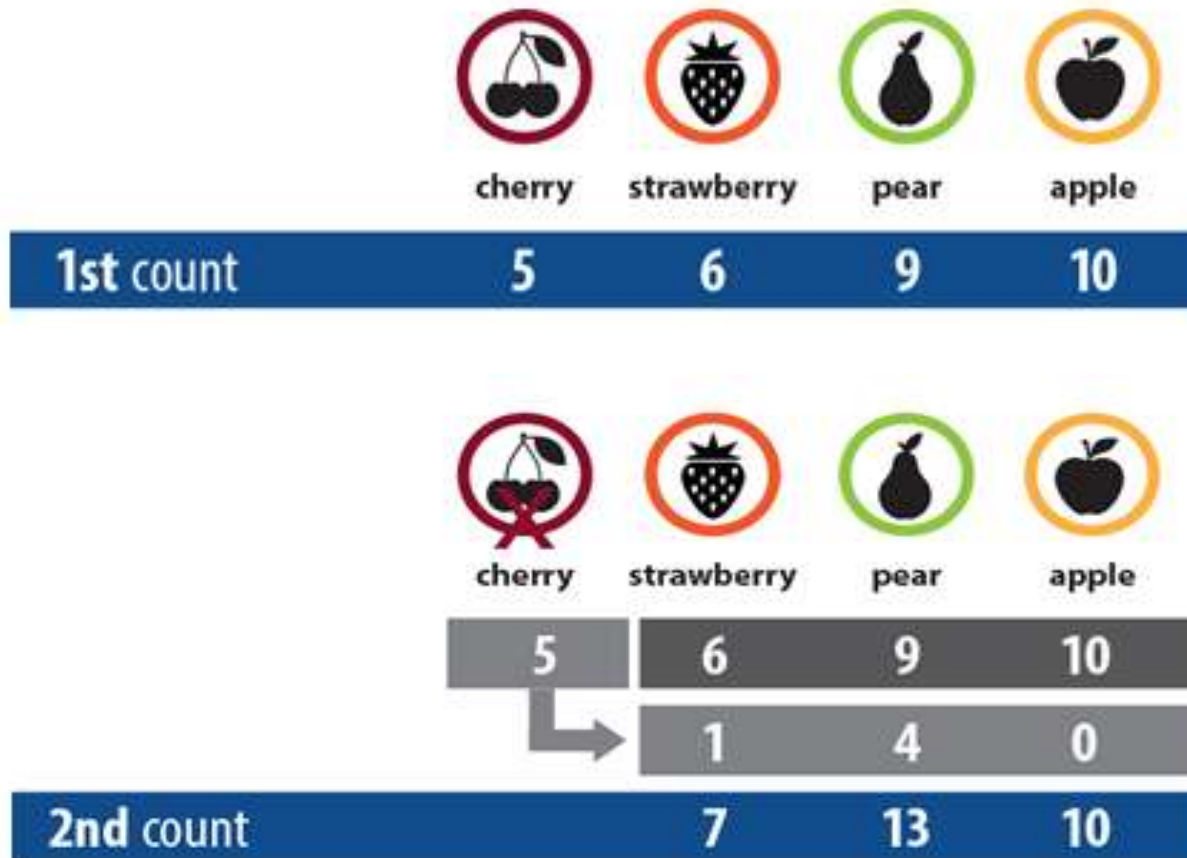
- Cherry 1
- Pear 2
- Strawberry 3
- Apple 4

### Calculate the threshold to be elected

Thirty people voted, and only one fruit can be chosen. Sixteen votes are needed for a fruit to be elected (50 per cent of 30 votes is 15 votes, plus one makes it a majority).



# Single Member – Example



# Single Member – Example



## Single Elimination

- If no candidate has reached the threshold needed to be elected, the candidate with the lowest number of votes is eliminated
- Only one candidate is eliminated per round
- If two or more candidates are tied with the lowest number of votes, the tie must be broken and one candidate eliminated in that round

## Batch Elimination

- If no candidate has reached the threshold needed to be elected, all candidates who have no mathematical chance of being elected are eliminated simultaneously
- A candidate has no mathematical chance of being elected if the total of the votes they received, plus the total of all of the votes received by the candidates below them on the list, would not be enough to put them ahead of the candidate above them on the list.
- Example:
  - Candidate U: 38 votes
  - Candidate V: 25 votes
  - Candidate W: 10 votes
  - Candidate X: 5 votes
  - Candidate Y: 4 votes
- Candidates W, X, and Y can be eliminated. If all of X and Y's votes were transferred to W, W would still end up in last place with 19 votes.

# Vote Counting – Multi-Member

# Multi-Member - Example

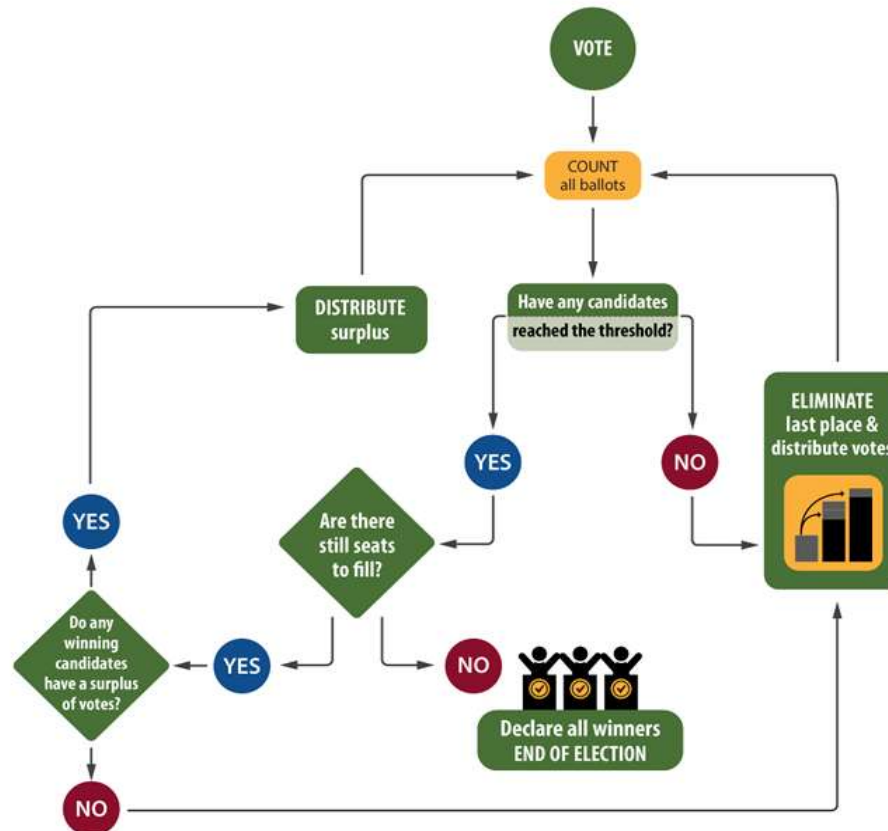
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# Multi-Member – Overview



# Multi-Member – Example

## Multi-member Election: an election where more than one candidate is elected

In this election, you are being asked to vote on what new equipment should be installed in your neighbourhood park. Three pieces of equipment will be chosen out of a possible six.

### Ranking the ballot

With ranked ballots you can rank your choices from your most preferred to least preferred option. You rank your choices as follows:

- Monkey bars 4
- Picnic Table 5
- Sandbox 3
- Slide 6
- Swings 1
- Treehouse 2

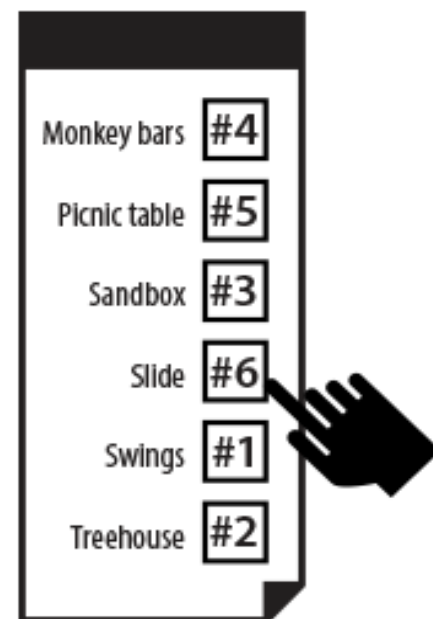
### Calculate the threshold to be elected

In a multi-member ranked ballot election, the number of votes needed to be elected will depend on how many seats are being filled.

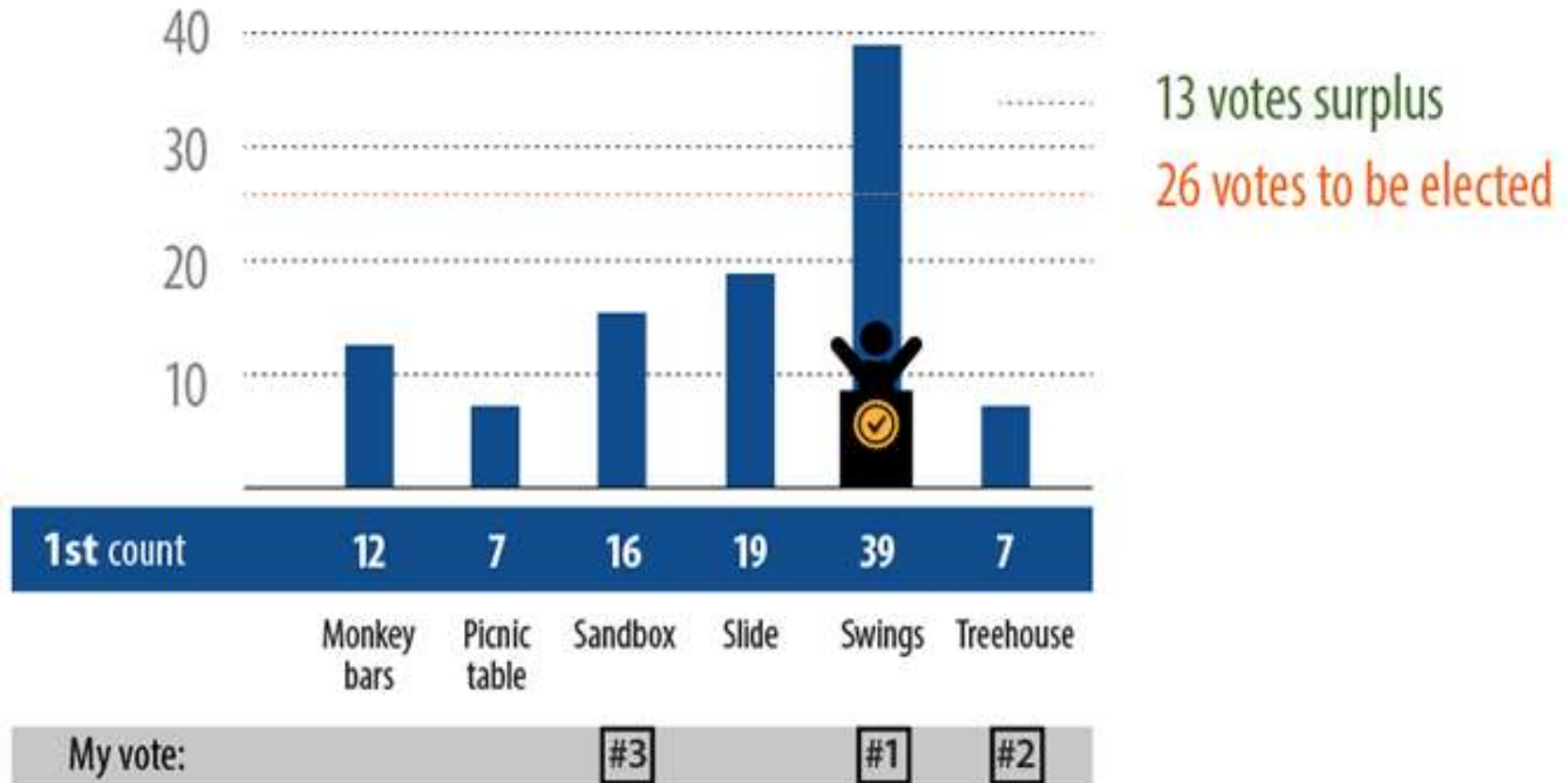
In this example, one hundred people voted, and three pieces of equipment will be chosen.

In order to be elected, a piece of playground equipment must earn twenty-six votes.

To do the math, one hundred votes divided by 4 (3 pieces of equipment will be chosen, plus one is 4) is 25 votes, plus one is 26.



# Multi-Member – Example



# Multi-Member – Example

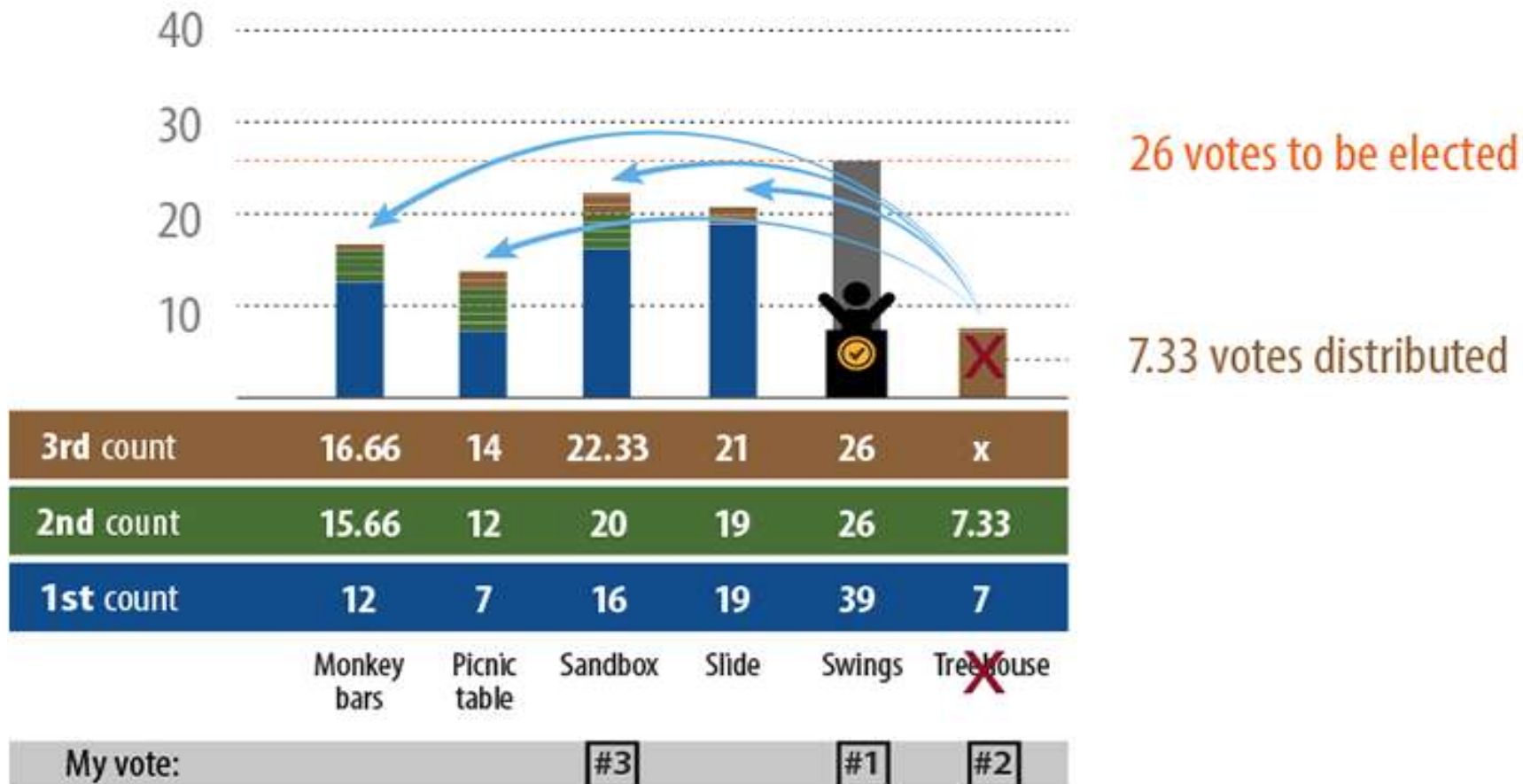


13 surplus votes distributed  
26 votes to be elected

# Multi-Member – Example

	Round 1 total	Votes added	New total
Monkey Bars	12	11 ballots worth $\frac{1}{3}$ each: 3.66 votes	15.66
Picnic Table	7	15 ballots worth $\frac{1}{3}$ each: 5 votes	12
Sandbox	16	12 ballots worth $\frac{1}{3}$ each: 4 votes	20
Slide	19	0 votes	19
Swings	39	- 39 ballots worth $\frac{1}{3}$ each: -13 votes	26      elected
Treehouse	7	1 ballots worth $\frac{1}{3}$ each: 0.33 votes	7.33

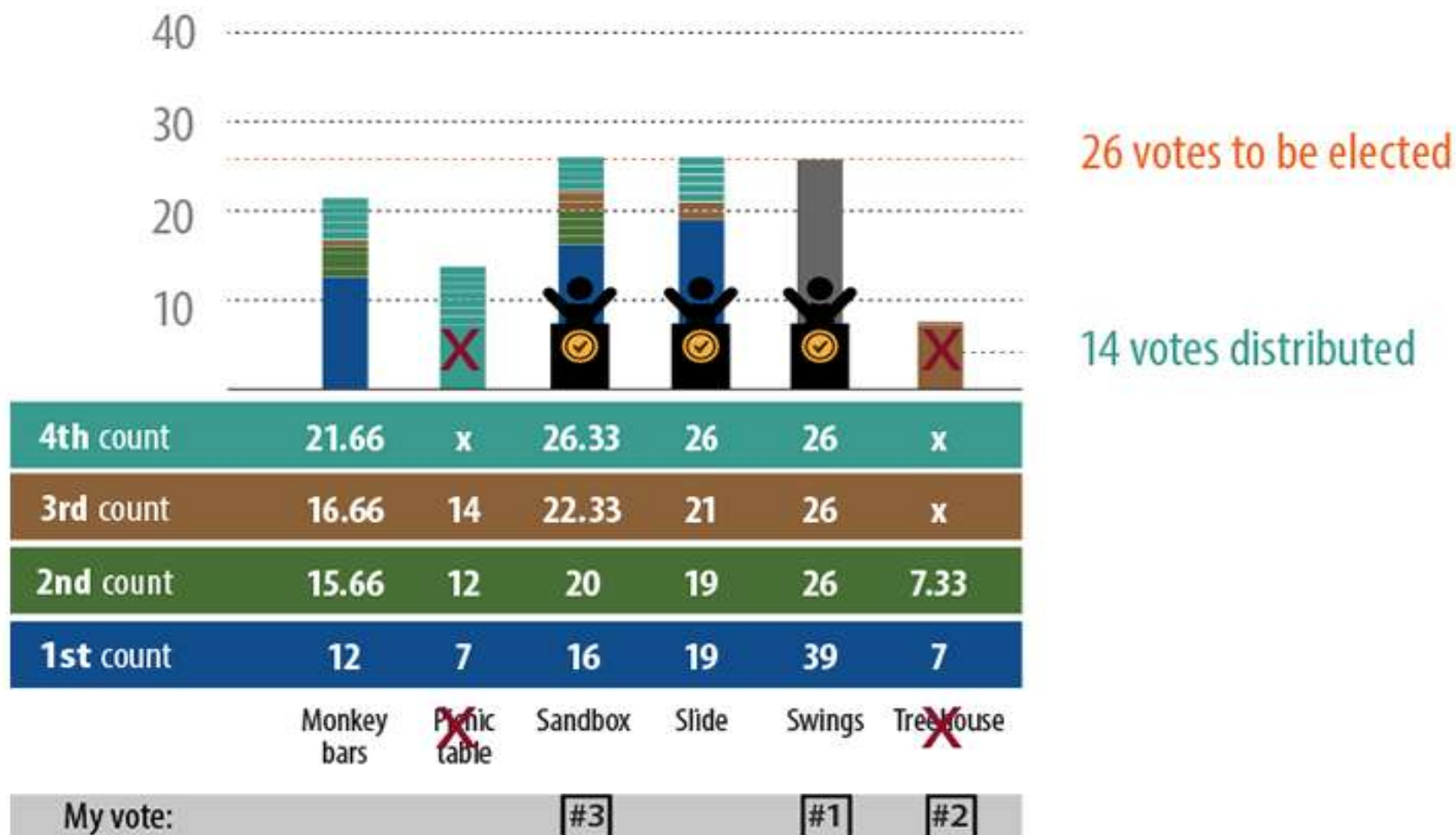
# Multi-Member – Example



# Multi-Member – Example

	Round 2 total	Votes added	New total
Monkey Bars	15.66	1	16.66
Picnic Table	12	2	14
Sandbox	20	2.33	22.33
Slide	19	2	21
Swings	26 elected	0	26 elected
Treehouse	7.33	-7.33 votes redistributed	0

# Multi-Member – Example





# Multi-Member – Example

	Round 3 total	Votes added	New total
Monkey Bars	16.66	5	21.66
Picnic Table	14	-14	0
Sandbox	22.33	4	26.33 elected
Slide	21	5	26 elected
Swings	26 elected	0	26 elected
Treehouse	0	0	0

# Reporting Requirements

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- As soon as possible after voting day, the clerk must make the following information available for each office:
  - Number of ballots cast
  - Number of declined ballots
  - Number of rejected ballots
  - Threshold for the office
  - Number of votes cast for each candidate in the first round
  - Results of each round of vote counting, including the number of votes received by each candidate and the number of exhausted ballots

## Contact Information

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