

## Exhausted ballots and continuing candidates under RCV

**I have heard that with Ranked Choice Voting it is possible for a winning candidate to win with fewer than a majority of votes. Is this true?**

According to the San Francisco charter, the “winner” in ranked choice voting is defined as the one who wins a majority of what is called "continuing ballots." Continuing ballots are those where all the rankings have not exhausted, where the voter is still participating in the runoff. If a voter uses all of his or her three rankings on candidates who don't have a chance of winning, that ballot will ‘exhaust’ and not be a 'continuing' ballot. So it's possible that the winner may end up with a majority that is less than the majority of all voters who initially voted, but it is still a majority of continuing ballots.

This is analogous to a situation where some voters don't return to vote for the December runoff. But considering the fact that voter turnout usually decreased between the November election and the December runoff -- often by anywhere from 30 to 50% -- more voters likely will participate in the final decisive runoff under ranked choice voting than under the previous December runoff system.

Here's a mock election that will illustrate "continuing ballots" and "exhausted ballots."

Candidates	1st round
A	32
B	24
C	20
D	15
E	9
<b>Total</b>	<b>100</b>

Candidate E is in last place and does not make the initial runoff. Let's say of E's nine votes, 5 go to C and 4 got to A. Now the vote totals stand:

Candidates	1st round	2 <sup>nd</sup>
A	32	(+4)=36
B	24	24
C	20	(+5)=25
D	15	15
E	9	(-9) out
<b>Total</b>	<b>100</b>	<b>100</b>

Now D is in last place and is eliminated from the runoff. Let's say of 15 D voters, 5 ranked A as their next choice, 5 ranked B, and 5 ranked E. But E has been eliminated, so of these 5 voters, let's say their next (third)-ranked candidate is: 3 rank B and 2 rank A. Now the vote totals stand:

Candidates	1st round	2 <sup>nd</sup>	3 <sup>rd</sup>
A	32	(+4)=36	(+5+2)=43
B	24	24	(+5+3)=32
C	20	(+5)=25	25
D	15	15	(-15) out
E	9	(-9) out	Out
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>

We're down to three candidates, so one of the candidates is about to win, when the current last place candidate, Candidate C, is eliminated. But here's where the 'continuing candidate' factor comes in.

Candidate C is in last place and is eliminated from the runoff. Of the 25 voters who were voting for C, let's say 5 rank A as their next choice, 10 rank B, and 10 rank Candidate D as their next choice. But Candidate D has been eliminated from the runoff, so for those ballots it goes to each voter's next ranked candidate. Let's say of these 10, 7 ranked Candidate E as their next (third) choice, and three ranked Candidate B. But Candidate E also has been eliminated from the runoff. Since that is those voters third ranking, they have no more runoff choices to give their vote to and so those seven votes go into what is called an "exhausted pile." They are ballots that do not 'continue,' and the voters of these ballots do not participate in the final runoff.

That means that the winner is candidate A with 48 votes -- slightly less than a majority of the original 100 ballots, but 51.6% of the 93 continuing ballots, with 7 ballots exhausted.

This is analogous to those 7 voters not returning for the December runoff, which of course in most December runoffs happened in large numbers. But with RCV, the drop-off -- as indicated by the number of 'continuing ballots' -- will be much less than with December runoffs.

Here are the final vote totals:

Candidates	1st round	2 <sup>nd</sup>	3rd	4 <sup>th</sup>
A	32	(+4)=36	(+5+2)=43	(+5)=48
B	24	24	(+5+3)=32	(+10+3)=45
C	20	(+5)=25	25	(-25) out
D	15	15	(-15) out	out
E	9	(-9) out	out	out
<b>Total</b>	<b>100</b>	<b>100</b>	<b>100</b>	<b>93+7 exhausted=100</b>

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