

# Best practices for ranked choice voting ballots and other materials

A project for FairVote and  
the Ranked Choice Voting Resource Center

Center for Civic Design

Whitney Quesenbery and Taapsi Ramchandani

[civicdesign.org](http://civicdesign.org) | [@civicdesign](https://twitter.com/civicdesign)

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**A fair and efficient  
voting process  
ensures voters can  
vote as intended.**

# Designing ranked choice voting

**This report presents best design practices for ranked choice voting ballots and instructions, voter education, and election results to support the goal of making every vote count.**

The best practices in this report started with a review of the wide variety of materials already in use around the country.

We then created prototype materials—ballots, voter education, and results details—using the guidelines for ballot design from the Election Assistance Commission and the Field Guides for Ensuring Voter Intent. This meant that the differences between different ballots focused on the layout and interaction rather than the quality of the design.

Testing with voters in California, New Jersey, and Minneapolis helped us refine the prototypes to identify broad design principles that can apply to a wide range of ballot styles and other materials.



# How to use these best practices

## **The best practices are guidance, not a rigid standard.**

The materials shown are not exact templates. Instead, they are a toolkit of examples that worked well in our testing, which election officials can put to work in creating their own materials.

Each of the best practice guidelines looks at one element of voter materials to show how it contributes to helping people participate in ranked choice voting as informed voters. There are also some examples that did not work well, and which we recommend avoiding.

We hope that this provides a balance between wanting to know the “best” design and the need to create election materials that must adapt to the specifics of local election law, current procedures, and voting systems.



# Unanswered questions

The work on this project has made good progress towards best practices for ranked choice voting ballots and other materials.

But, there is always more to do.

We tested sample ballots that focused on a single ranked choice contest, but need to expand the testing context to realistic ballots with the many and different types of contests voters experience.

As always, there are two overarching concerns:

- Working with people who are new to voting, have low civic engagement, and low literacy
- Finding the tipping point for voter fatigue in working with ranked choice voting.



# Next steps

## Priorities for next steps

- Voter education and results display for multi-winner contests
- Testing with realistic ballots that include both ranked choice and other contests
- Continued work on an optimal design for optical scan ballots
- Continued work on digital ballots, comparing 1 and 2 column layouts
- Creating a live prototype for results reporting
- Testing rankings entered as numbers read with optical character recognition



# What it means to vote as intended

Elections—and ranked choice voting—work best when voters understand both how the election works and how to use the ballot to express their choice.

## Help voters understand how ranked choice voting works

Voter education materials help voters understand the voting process and their part in it.

[Voter education materials start on page 9](#)

[Reporting election results starts on page 29](#)

## Help voters mark their ballot choices as they intend

Good ballot design and instructions help build confidence in voters about their vote being counted.

[Ballot layout and design starts on page 44](#)



# Voter education

Understanding how ranked choice voting works from voter education to election results

# Preparing for ranked choice voting

Any change in elections triggers a voter outreach campaign, and there's always a need for voter education. This is just as true for ranked choice voting, with a few additional issues.

If voters don't have an accurate basic understanding of how ranked choice voting works:

- They are less likely to understand why it was adopted and the benefits it offers.
- They are more likely to misunderstand how to mark their ballot in a way that reflects their intent.

The principles and guidelines in this section cover what information voters need, and how to communicate the ranked choice voting concept in clear, simple language.



# Voter education materials used in testing

We developed voter education materials for testing in the same way as the ballots – starting from existing materials.

In this case, we were not trying to create the “perfect flyer” but to have a way to test different information for its importance, textual and presentation details, and tone.

The final version of the voter education materials is available on the [Ranked Choice Voting Resource Center website](#).



# Election department flyers

**How are your choices counted?**



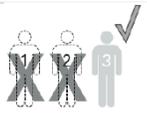
Your vote counts for your 1<sup>st</sup> choice as long as the candidate has not been eliminated.



If your 1<sup>st</sup> choice is eliminated, your vote for your 2<sup>nd</sup> choice will be counted.

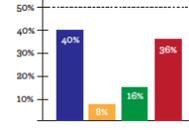


If both your 1<sup>st</sup> and 2<sup>nd</sup> choices are eliminated, your 3<sup>rd</sup> choice will be counted.



**How to count RCV ballots:**

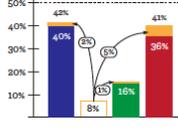
Everyone has one vote, but is able to indicate their "backup" choices. Here's how we count RCV ballots in a single-seat race.



1 All 1st choices on the ballots are counted. Did someone meet the threshold of 50% + 1 of the votes? If yes, s/he wins. If not....

The candidate with the fewest 1st choice votes is defeated. The ballots cast for him/her are reassigned to those voters' 2nd choices.

(Note: ONLY the defeated candidate's ballots are reassigned. Ballots cast for all other candidates continue to count for those candidates.)



2 Did a candidate meet the threshold with the additional votes allocated? If yes, s/he wins. If not, repeat step 2.

Keep going until a candidate reaches the threshold (or until 2 candidates remain and the one with the most votes wins).

In the multi-seat elections, like Park Board, you use the same ranking process. The threshold to win is different because there are more seats to fill and rounds of counting occur until all seats are filled.

**Ranked Choice Voting Is as easy as 1-2-3!**

We started with two flyers we thought did a good job of explaining ranked choice voting and used them as the basis for the early testing, with short accompanying text.

Voters liked the color and the visual explanation, but:

- Did not like seeing candidates "X-ed out" saying it was disrespectful.
- Did not like the way the counting flyer didn't have (to them) a clear order in which to read it.



# Benefits, from FairVote

<p>Let's give every voter an opportunity to express their unique voice on Election Day.</p> <p><b>STRONGER VOICES</b></p> <p>With ranked choice voting, candidates — regardless of party affiliation — have an opportunity to be evaluated based on <b>what really matters</b>: public policy platforms, and leadership capabilities.</p>	<p>Voters deserve more choices and competitive elections that are not influenced by special interests.</p> <p><b>BETTER CHOICES</b></p> <p>Ranked choice voting gives every voter the opportunity to participate in a meaningful, <b>competitive election</b> no matter how politicians draw the lines.</p>	<p>It's time for a fair way to elect local, state, and national leaders.</p> <p><b>ACCOUNTABLE LEADERS</b></p> <p>Ranked choice voting upholds <b>majority rule</b> and fosters more representative bodies that accurately <b>reflect the views of the people</b>, and encourages legislators to work together.</p>
<p>Ranked choice voting gives you a stronger voice by not limiting your vote to one choice.</p>		

## Original list

- Saves money
- Stronger voices
- Better choices
- Less negative campaigns
- Fair elections
- Accountable leaders

We started our list of benefits of ranked choice voting from FairVote materials, with 6 concepts that appeared on election office flyers as well.

As we tested, we narrowed down the list to the ones participants:

- Understood
- Thought important
- Personally valued

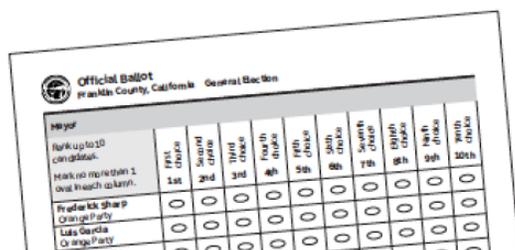


# Voter education – What, why, and how

## Ranked Choice Voting What and why?

### What is it?

With Ranked Choice Voting, you mark your preferences for the candidates in order, instead of just choosing one.



### Why use it?



#### Saves Money

There don't have to be runoff elections if no candidate gets enough votes to win in the first round. Voters have already indicated their second preference.



#### Stronger Voices

Voters have a way to express preferences while still voting for their first choice.



#### Broaden Participation

Candidates have to appeal to people who might initially vote for someone else.

## Marking your choices with Ranked Choice Voting

### Do I need to rank all candidates?

No, you do not have to rank all candidates.

You should rank **at least one candidate** as your 1st choice.

Then, you can rank as many as you want of the other choices available.

### How does it affect my 1st choice?

Ranking other candidates does not affect your vote for your 1st choice.

### Only your 1st choice is counted in Round 1.

Your 2nd, 3rd, 4th and other choices will be considered only if your 1st choice does not win.

### Under what circumstances can my first choice be eliminated?

As the votes are counted, the candidate with the fewest votes is eliminated.

If your 1st choice is eliminated, your 2nd choice will be counted, and so on.

The elimination continues until there is a winner.

Learn more about how RCV works at [www.elections.gov](http://www.elections.gov)



# Voter education – How to mark a ballot

## How is the winner determined? Counting ballots with Ranked Choice Voting

The first candidate who gets 50% of the final votes wins.

Ballots are counted in rounds until a candidate wins.

### Round 1

**Only your vote for your 1st choice is counted.**

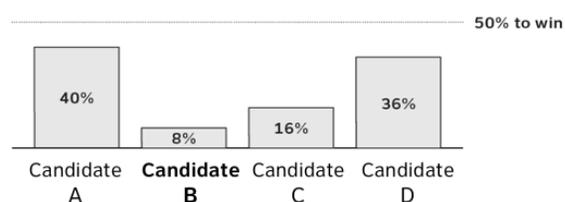
If a candidate gets 50% of the votes, they win.

If not, the counting goes to Round 2.

Your 1st choice for Candidate B is counted.

	1st	2nd	3rd
A		●	
B	●		
C			
D			●

When all the 1st choices are counted, Candidate A is leading, but there is no winner



### Round 2

The candidate with the fewest votes is eliminated.

Ballots for that candidate are counted for their next choice (see illustration)

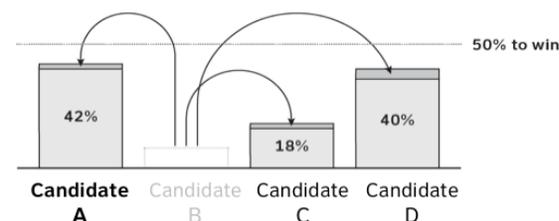
**If your candidate has not been eliminated, your first choice still holds.**

If a candidate gets 50% of the votes, they win. If not, the counting goes to Round 3.

Your next choice - for Candidate A - is counted.

	1st	2nd	3rd
A		●	
B	○		
C			
D			●

Candidate B is eliminated. Those ballots are counted for the next choice. Still no winner.



### Round 3 (and beyond)

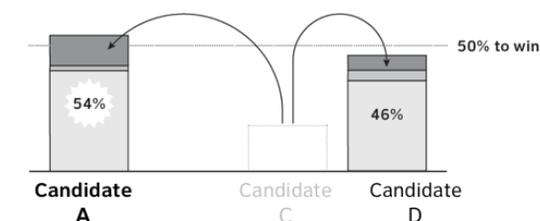
The counting continues until there is a winner.

In each round the last place candidate is eliminated and their ballots counted for the next choice candidates.

With Candidate A still in the race, your vote does not change

	1st	2nd	3rd
A		●	
B	○		
C			
D			●

Candidate C is eliminated. Those ballots are counted for the next choice. Candidate A wins.



# Principle: Give voters the information they need to prepare to vote

Before the actual voting day, voters should have access to voter education materials that clearly explain the concept of ranked choice voting. This will prepare voters to make confident choices on the day of voting.

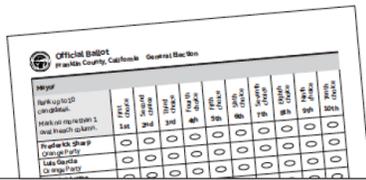
# Give voters the information they need to prepare to vote

## Guideline 1: Explain the benefits and basics of ranked choice voting.

### Ranked Choice Voting What and why?

#### What is it?

With Ranked Choice Voting, you mark your preferences for the candidates in order, instead of just choosing one.



#### Why use it?



#### Saves Money

There don't have to be runoff elections if no candidate gets enough votes to win in the first round. Voters have already indicated their second preference.



#### Stronger Voices

Voters have a way to express preferences while still voting for their first choice.



#### Broaden Participation

Candidates have to appeal to people who might initially vote for someone else.

Start with a simple definition of how ranked choice voting works.

An illustration can be a visual reminder that ranked choice contests have a different layout.

Focus on the most important benefits in your jurisdiction, and keep the text short.

These three benefits were the ones that got the most positive response during testing.

Sample page from the tested materials



# Give voters the information they need to prepare to vote

## Guideline 2: Answer voters' questions about how to make their choices and how their ballot is counted

### Marking your choices with Ranked Choice Voting

▪ **Do I need to rank all candidates?**  
No, you do not have to rank all candidates.  
You should rank **at least one candidate** as your 1st choice.  
Then, you can rank as many as you want of the other choices available.

▪ **How does it affect my 1st choice?**  
Ranking other candidates does not affect your vote for your 1st choice.

**Only your 1st choice is counted in Round 1.**  
Your 2nd, 3rd, 4th and other choices will be considered only if your 1st choice does not win.

▪ **Under what circumstances can my first choice be eliminated?**  
As the votes are counted, the candidate with the fewest votes is eliminated.  
If your 1st choice is eliminated, your 2nd choice will be counted, and so on.  
The elimination continues until there is a winner.

Learn more about how RCV works at [www.elections.gov](http://www.elections.gov)

Answer voters' top questions:  
How many they need to rank  
How ranking affects their first choice  
When additional choices are counted

Questions work well as headings, suggesting what voters need to know.

Keep the text short – don't overload the reader.

Provide a link to additional information for those who want more detail.



# Give voters the information they need to prepare to vote

## Guideline 3: Show the connection between an individual ballot and the overall counting process.

Excerpt from “How is the winner determined?” the voter education flyer used in testing

### Round 1

Only your vote for your 1st choice is counted.

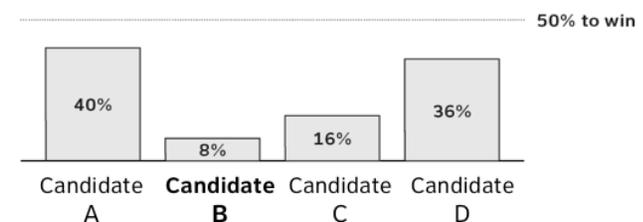
If a candidate gets 50% of the votes, they win.

If not, the counting goes to Round 2.

Your 1st choice for Candidate B is counted.

	1st	2nd	3rd
A		●	
B	●		
C			
D			●

When all the 1st choices are counted, Candidate A is leading, but there is no winner



Explain what happens in each round of counting.

Show an example ballot and how it is counted.

Show the results of counting this round.



# Give voters the information they need to prepare to vote

## Guideline 3 (continued)

### Excerpt showing three rounds

**Round 1**  
Only your vote for your 1st choice is counted.  
If a candidate gets 50% of the votes, they win.  
If not, the counting goes to Round 2.

Your 1st choice for Candidate B is counted.

	1st	2nd	3rd
A		●	
B	●		
C			
D			●

When all the 1st choices are counted, Candidate A is leading, but there is no winner

Candidate	Percentage
A	40%
B	8%
C	16%
D	36%

**Round 2**  
The candidate with the fewest votes is eliminated.  
Ballots for that candidate are counted for their next choice (see illustration)  
**If your candidate has not been eliminated, your first choice still holds.**  
If a candidate gets 50% of the votes, they win. If not, the counting goes to Round 3.

Your next choice - for Candidate A - is counted.

	1st	2nd	3rd
A		●	
B	○		
C			
D			●

Candidate B is eliminated. Those ballots are counted for the next choice. Still no winner.

Candidate	Percentage
A	42%
B	0%
C	18%
D	40%

**Round 3 (and beyond)**  
The counting continues until there is a winner.  
In each round the last place candidate is eliminated and their ballots counted for the next choice candidates.

With Candidate A still in the race, your vote does not change

	1st	2nd	3rd
A		●	
B	○		
C			
D			●

Candidate C is eliminated. Those ballots are counted for the next choice. Candidate A wins.

Candidate	Percentage
A	54%
C	0%
D	46%

Show more than 2 rounds, with at least one example of a round where the voter's choice is not eliminated.

Saying the "next choice" is counted, rather than using a ranking number, reinforces that next-ranked choices are only counted when a candidate is eliminated.

We chose to use the simpler language that it takes 50% to win because people got stuck on "over 50%" or "50% + 1." Participants in testing understood that there can't be a tie.



# Give voters the information they need to prepare to vote

## Guideline 4: Repeat and re-emphasize important points about ranked choice voting.

### Do I need to rank all candidates?

No, you do not have to rank all candidates.

You should rank **at least one candidate** as your 1st choice.

Then, you can rank as many as you want of the other choices available.

Voter education flyer

Instructions in voter education material can be longer than on the ballot.



### Mayor

Rank the people in the order of your choice.  
You may rank as many or as few as you wish.

### Ballot instructions

Ballot instructions focus on what voters most need to know as they mark their choices.

Keep them short so they don't take up too much space on the ballot and can be repeated for each contest.



Principle:

Present all information in clear, simple language

Explain ranked choice voting in plain language across all materials, avoiding jargon as much as possible. Voters of different literacy levels must all understand the information you provide.

# Present all information in clear, simple language

## Guideline 5: Keep information short and to the point, using everyday words.

### Round 2

The candidate with the fewest votes is eliminated.

Ballots for that candidate are counted for their 2nd choice (see illustration)

**If your candidate has not been eliminated, your first choice still holds.**

If a candidate gets 50% of the votes, they win. If not, the counting goes to Round 3.

Ranked choice voting can seem complicated, so making the information simple is especially important.

Write short sentences.

Put each point in its own paragraph so each one stands out.

Use the simplest word possible with accuracy. For example use “gets” not “receives.”



# Present all information in clear, simple language

## Guideline 6: Use illustrations and visual explanations to help explain how ranked choice voting works.

Visual instructions help all voters, especially those with lower literacy.

Use illustrations to highlight the most important details.

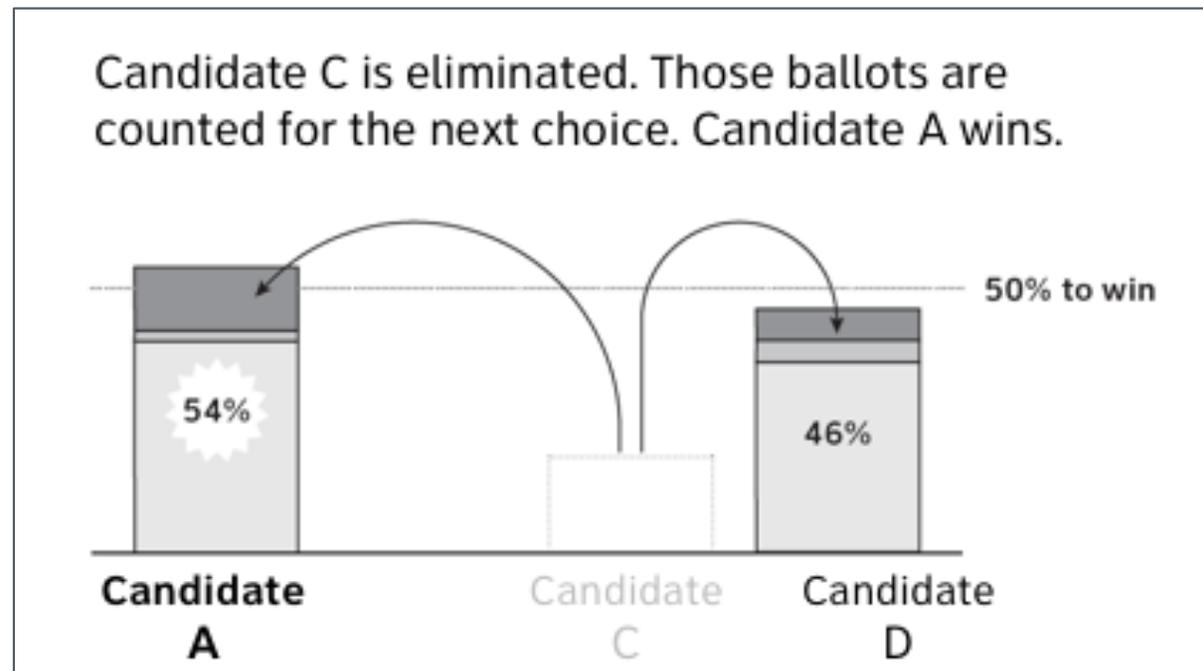


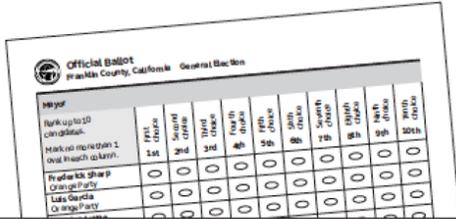
Illustration showing votes being transferred



# Present all information in clear, simple language

## Guideline 7: Use icons sparingly to draw attention to different types of information.

Simple illustration or icons can draw attention, reinforce messages, or highlight the number of different points.



**Official Ballot**  
Orange County, California General Election

Mark up to 10 candidates.

Mark no more than 1 oval beneath each name.

	1st choice	2nd choice	3rd choice	4th choice	5th choice	6th choice	7th choice	8th choice	9th choice	10th choice
Priscilla K. Shaw P. Orange Party	0	0	0	0	0	0	0	0	0	0
Lita Garcia Orange Party	0	0	0	0	0	0	0	0	0	0

**Why use it?**

-  **Saves Money**  
There don't have to be runoff elections if no candidate gets enough votes to win in the first round. Voters have already indicated their second preference.
-  **Stronger Voices**  
Voters have a way to express preferences while still voting for their first choice.
-  **Broaden Participation**  
Candidates have to appeal to people who might initially vote for someone else.

Illustrations and icons used with textual information



Principle:  
Repeat important  
messages across different  
voting materials

Voter education and ballot instructions support each other.

Voters should be able to easily access relevant information as they need it.

# Repeat important messages across different voting materials

## Guideline 8: Provide general instructions about ranked choice voting in the polling place or vote-by-mail materials in an appropriate format.

**Marking your choices with Ranked Choice Voting**

- **Do I need to rank all candidates?**  
No, you do not have to rank all candidates. You should rank **at least one candidate** as your 1st choice. Then, you can rank as many as you want of the other choices available.
- **How does it affect my 1st choice?**  
Ranking other candidates does not affect your vote for your 1st choice.

**Only your 1st choice is counted in Round 1.**  
Your 2nd, 3rd, 4th and other choices will be considered only if your 1st choice does not win.

- **Under what circumstances can my first choice be eliminated?**  
As the votes are counted, the candidate with the fewest votes is eliminated. If your 1st choice is eliminated, your 2nd choice will be counted, and so on. The elimination continues until there is a winner.

Learn more about how RCV works at [www.elections.gov](http://www.elections.gov)

Voter education flyer

**Instructions for Ranked Choice Voting**

Making selections	Fill in the oval...
Rank candidates in the order of your choice. You may rank as many or as few candidates as you wish.	<ul style="list-style-type: none"><li>• In the 1st column for your first 1st choice.</li><li>• In the 2nd column for your 2nd choice.</li><li>• In the 3rd column for your 3rd choice, and so on</li></ul>

Instructions on a ballot

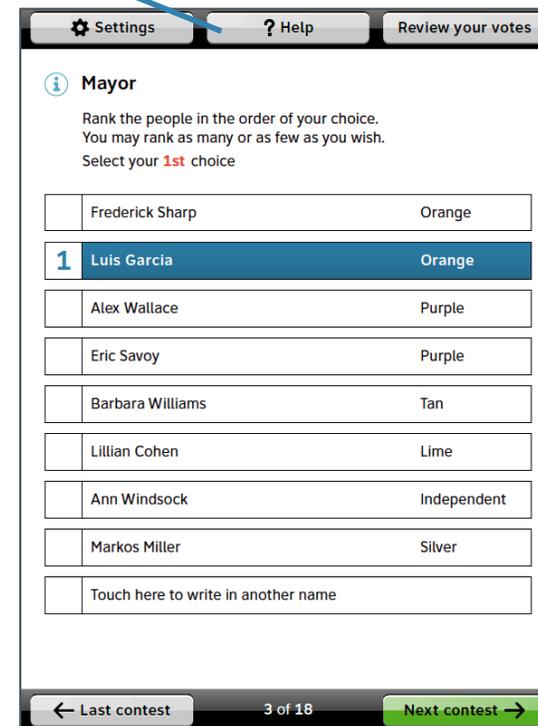
More detailed information before the election supports voters' general understanding of ranked choice voting.

Simpler instructions on a ballot support the immediate actions of marking the ballot.



# Repeat important messages across different voting materials

**Guideline 9: On a digital ballot, make this information easy to find with an always visible "help" button on all screens.**



# Election results

Understanding election results both helps voters accept the current election and choose how to vote in the next.

# Understanding the results

Although the outcome of any election can be contentious, understanding the results of a ranked choice voting election also requires understanding how this way of voting works.

For this reason, we included the way results are presented as part of the materials that inform voters about ranked choice voting and how to make decisions about ranking their own ballot.

We focused on the summary explanation that might be presented on an elections website for the general public and how well they *tell the story* of the election. This includes:

- The presentation of the ultimate winner
- The story of what happened in each round and how votes are transferred as candidates are eliminated
- A summary of the counting process in a compact form.



# Ballot counting terminology

Throughout this project, we tried using different words in explaining key concepts in ranked choice voting.

All of these conclusions will need further testing, in real materials for a real election, but we were encouraged when we found a word that could work effectively.

- **Active** and **inactive** ballots – These terms worked to differentiate ballots with no further candidates and those being counted.
- **Eliminated candidates** – Candidates with the fewest results in each round.
- **Ballots counted for their next choice** – Ballots from eliminated candidates that are still active.
- **Final votes** – The ballots and voters contributing to the winner when counting stops.



# What we tested

We tested a results display that:

- Started with the winner
- The screens then alternated text and visual displays for each round
- The final page included a summary of how the winner's votes were accumulated

We used results from two real elections.

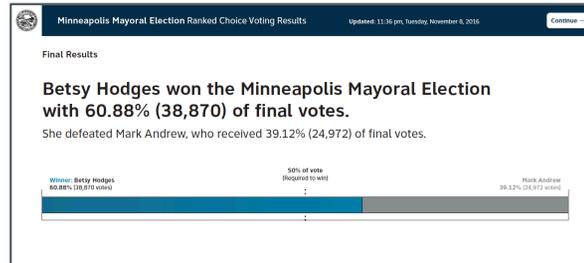
- One started with 35 candidates, but ended with the leader in the first round winning. The ballots for that election allowed voters to rank 3 choices.
- The other had 7 candidates, and included an upset winner. The voters in that election were required to rank all candidates.

The final version of the election results pages are available on the Ranked Choice Voting Resource Center website.

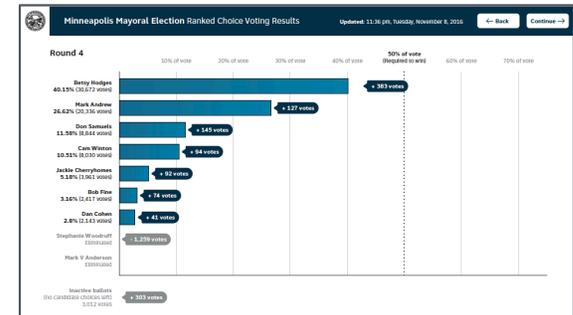
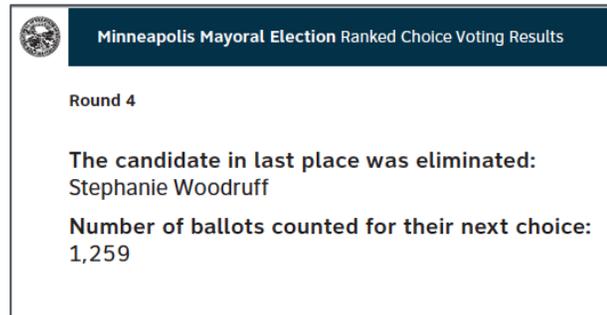


# Sample screens

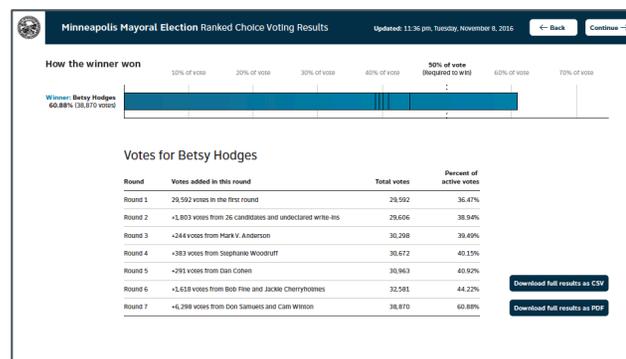
1. Opening screen



2. Text and visual for each round

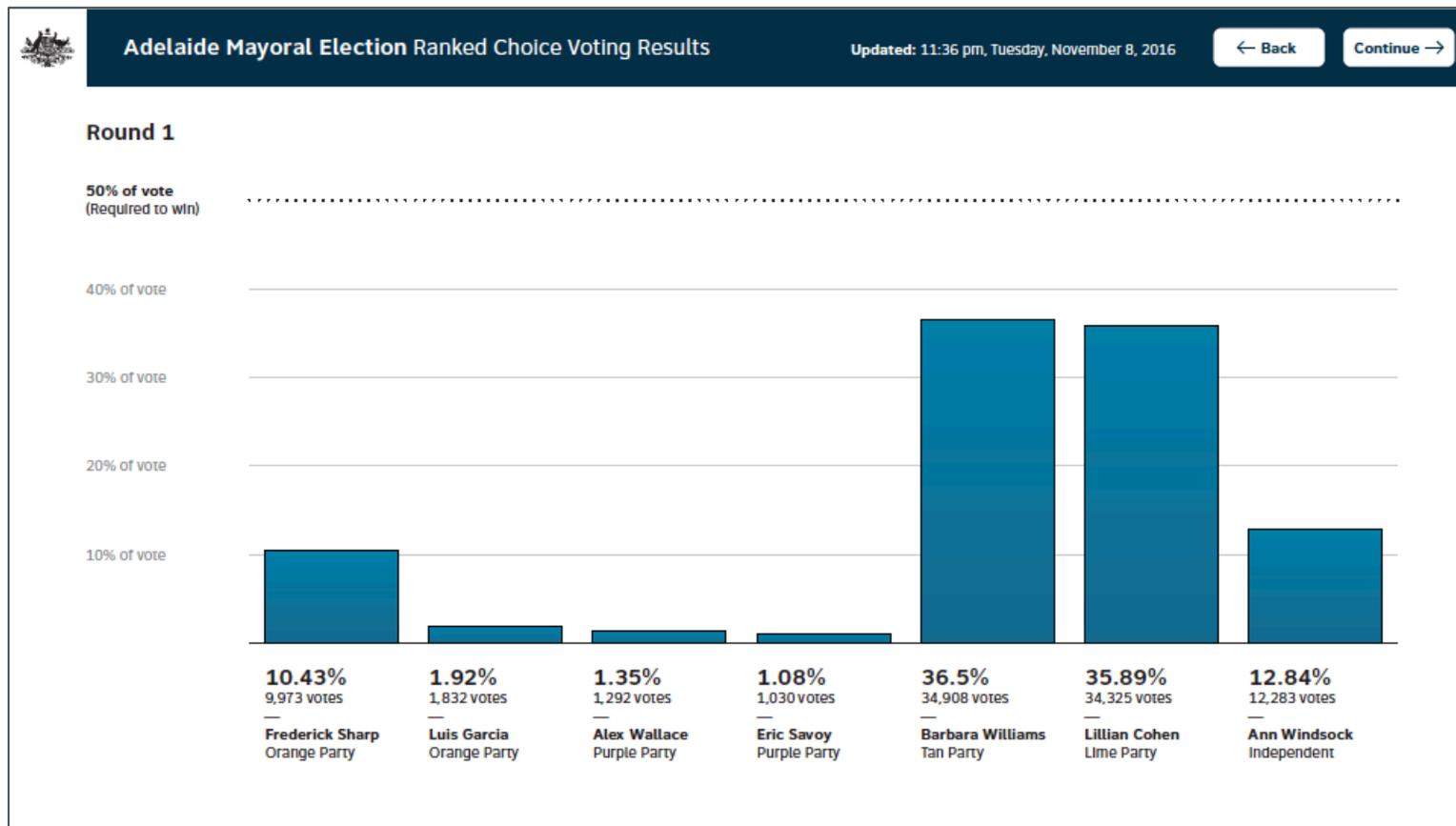


3. Final summary with links to download results data as a CSV or PDF file



# Alternate layout for results

We also tested a horizontal list of candidates. Participants also liked this version, but it will only work for a limited number of candidates so the vertical list was used for examples.

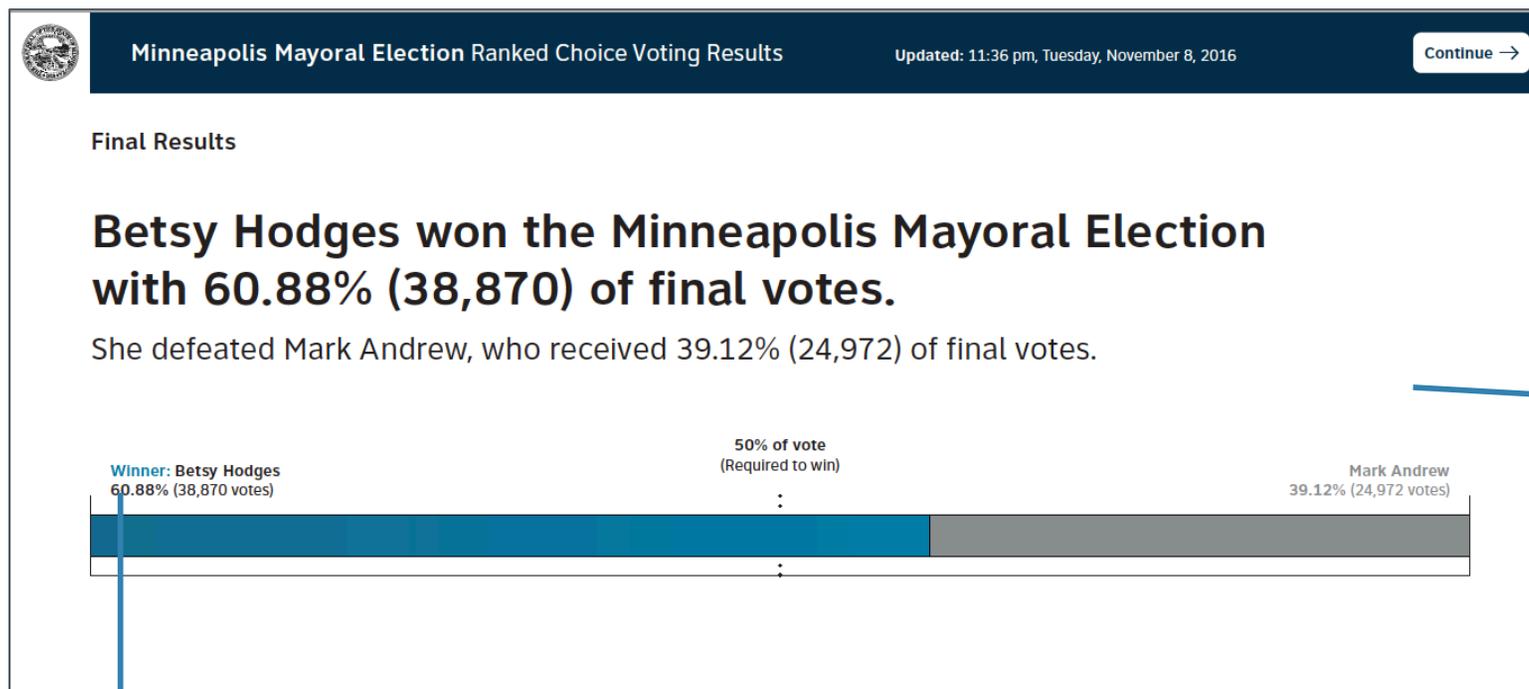


# Principle: Make election results transparent

Show the process of counting a ranked choice voting election when reporting election results. This will help voters understand how the winner is determined and build confidence in the voting system.

# Make election results transparent

## Guideline 1: When reporting results, show the winner, before explaining the counting process



Show the final result visually as well as in text.

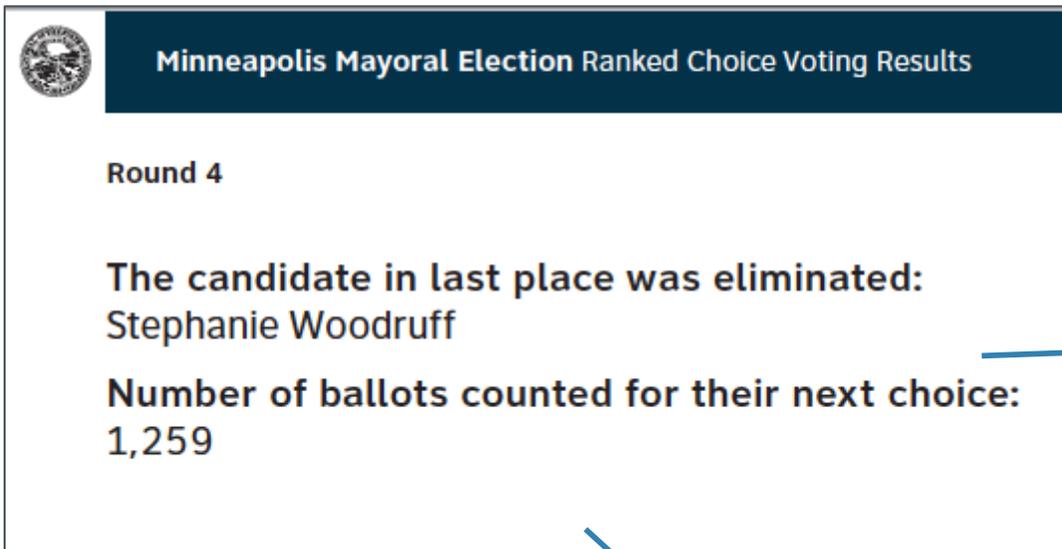
### More testing needed

These results are stated to 2 decimal places because the official results they are based on did so. Whole numbers are easier to read. However, none of our participants complained about the decimal places.



# Make election results transparent

## Guideline 2: Describe what happens in each round, then follow with a visual display



**Minneapolis Mayoral Election Ranked Choice Voting Results**

**Round 4**

**The candidate in last place was eliminated:  
Stephanie Woodruff**

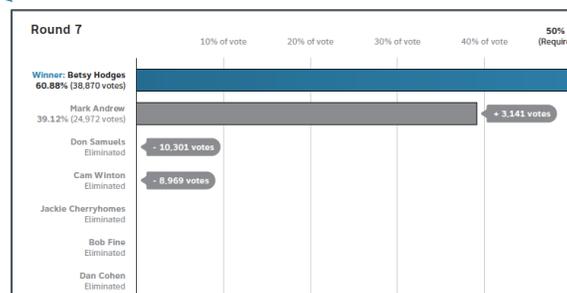
**Number of ballots counted for their next choice:  
1,259**

Starting each round with an explanation helps voters understand the counting process and visual display.

Tell voters:

- Which candidates were eliminated
- How many ballots were counted for their next choice.

Connect the two explanations with the number of the round.



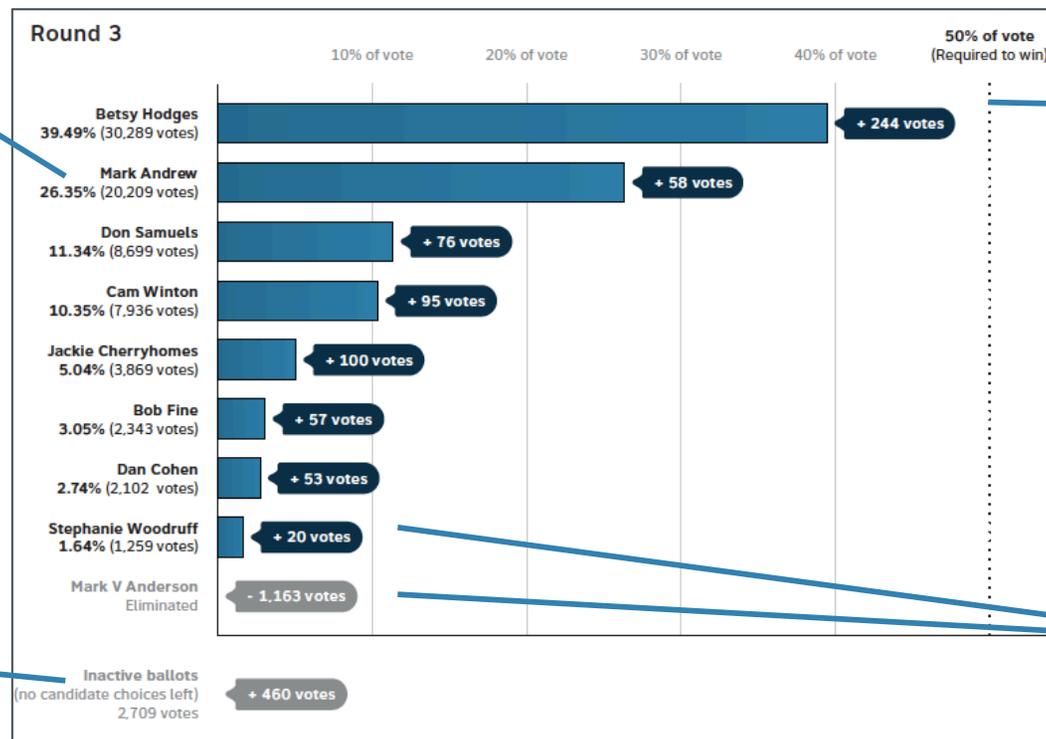
# Make election results transparent

## Guideline 3: Show all rounds of counting.

### Visual explanation of the results of each round of counting

Vote totals, percentage for each candidate at the end of the round.

Totals for inactive ballots.



Include a "goal line" for winners.

Number of votes added or removed from each candidate.



# Make election results transparent

## Guideline 3 (continued)

Summary of how votes accumulated for the winner

### Votes for Betsy Hodges

Round	Votes added in this round	Total votes	Percent of active votes
Round 1	29,592 votes in the first round	29,592	36.47%
Round 2	+1,803 votes from 26 candidates and undeclared write-ins	29,606	38.94%
Round 3	+244 votes from Mark V. Anderson	30,298	39.49%
Round 4	+383 votes from Stephanie Woodruff	30,672	40.15%
Round 5	+291 votes from Dan Cohen	30,963	40.92%
Round 6	+1,618 votes from Bob Fine and Jackie Cherryholmes	32,581	44.22%
Round 7	+6,298 votes from Don Samuels and Cam Winton	38,870	60.88%

Start from round 1.

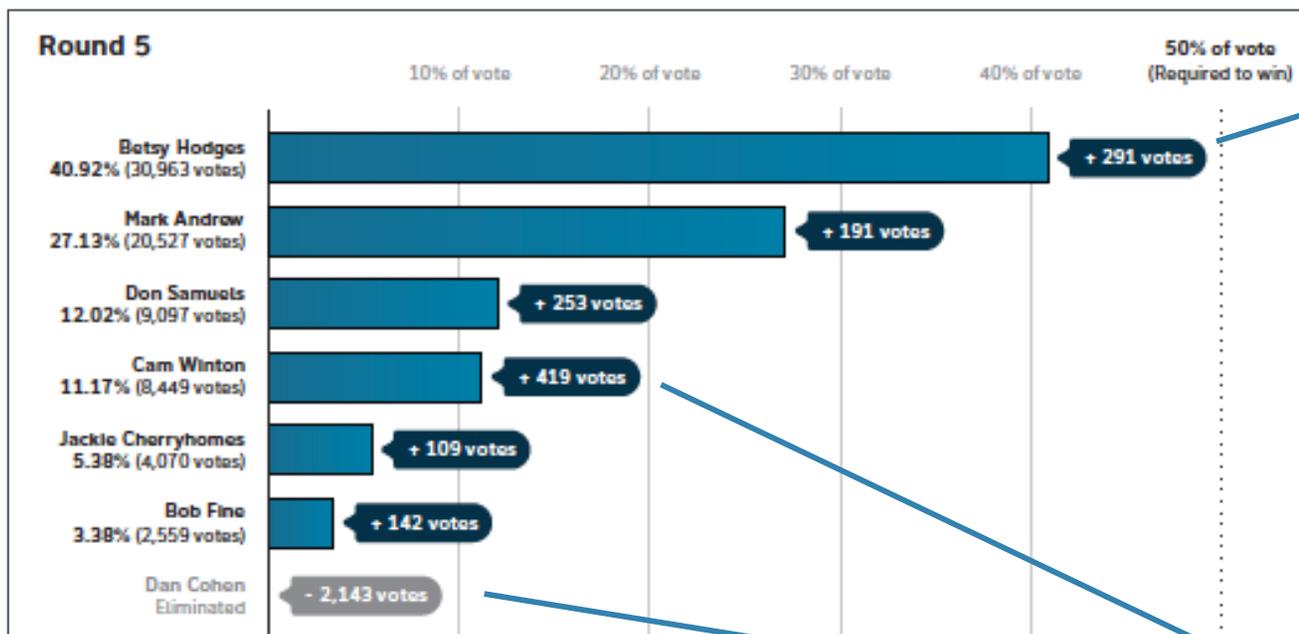
For each round show:

- Number of votes added.
- Total votes at the end of the round.
- Percentage of votes at the end of the round.



# Make election results transparent

## Guideline 4: Make it easy to see the number of votes transferred to each candidate during each round.



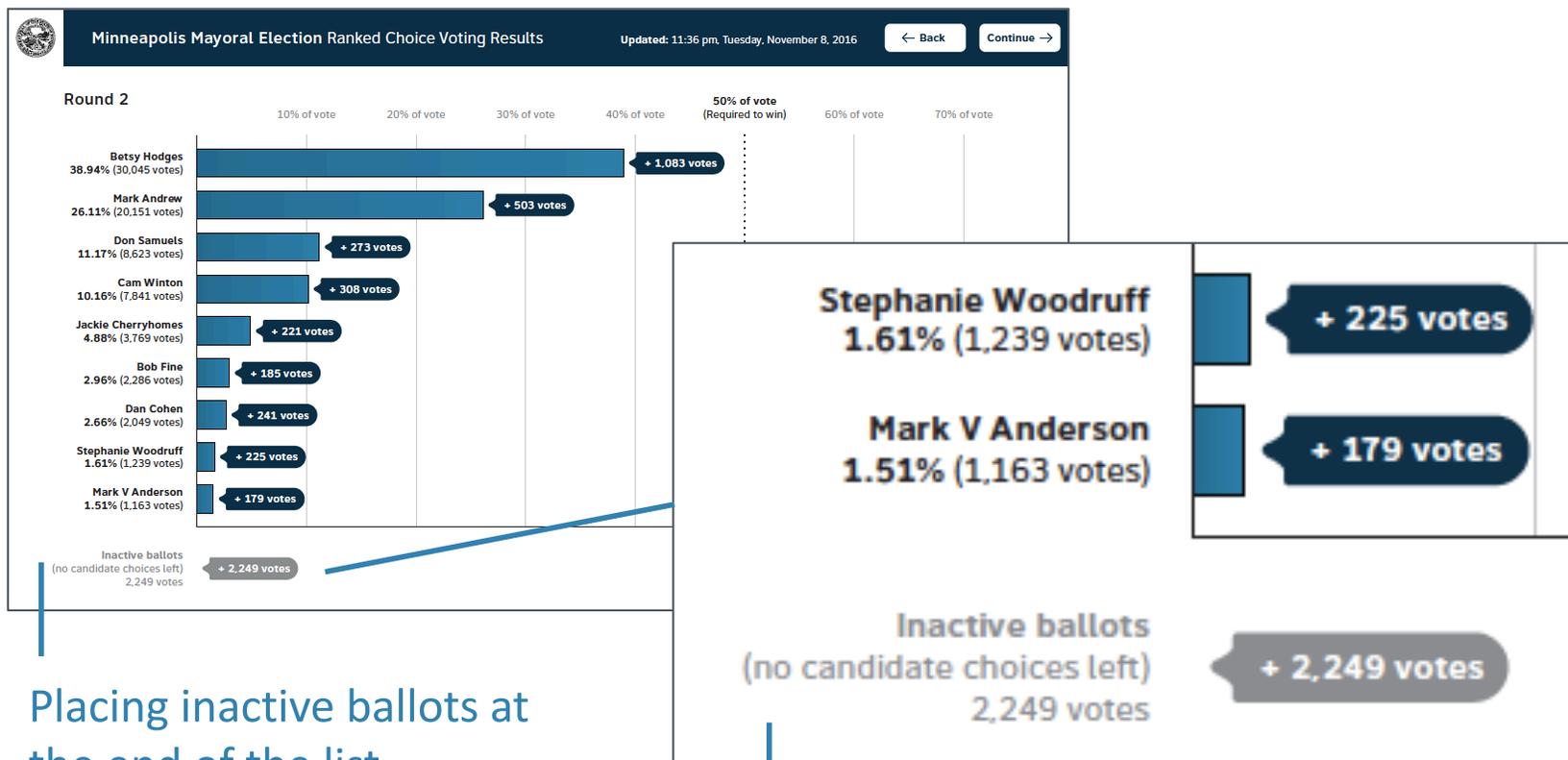
Aligning numbers next to the bar for each candidate makes it easy to read the numbers, and even add them up to check that they balance.

Differentiate votes eliminated from or added to each candidate.



# Make election results transparent

## Guideline 5: Show inactive ballots in the results list. Differentiate inactive ballots from the active candidates.



Placing inactive ballots at the end of the list worked well in testing.

Do not include a totals bar or a percentage for inactive ballots.



# Make election results transparent

**Guideline 6: Make it easy for users to navigate both forwards and backwards in the process of counting.**



Buttons in a fixed location on every screen or 'frame' make it easy to go back and forth between rounds of counting.



# Open questions

There are a number of open questions for future research.

- **What is the best way to display contests with a very large number of candidates?**  
During testing, we skipped over the rounds in which some 25 candidates were eliminated.
- **In what order should candidates be listed?**  
One version we tested used the order after round 1, the other the order on the ballot. Others are alphabetical or order of elimination. What are the implications of each, especially if results are shared as counting proceeds?
- **How does this style of bars or stacks compare to showing the results in a single bar?**
- **Can this style of results display be used effectively during the counting, showing each round as it is completed?**



# Ballot design

Understanding how to use the ballot to mark choices as intended

# Using the ballot design recommendations

Even more than other election design materials, ballot designs are constrained by their context, including laws in the jurisdiction, technical capabilities of the voting system, and the local voting experience history.

These best practice recommendations look at the detailed elements of a ballot as building blocks to the whole layout. Most of these building blocks apply to any ranked choice voting layout.

In the testing, we found that many of the layout variations can be made to work effectively, but there are a few that do not work well and should be avoided.



# Ballot layouts

## Paper ballots

- Limited ranking layouts
- Grid-style layouts
- Repeated blocks
- Hand-entered rankings

## Digital ballots

- Two list style
- Single list style

# Paper ballots

After reviewing dozens of existing ballots, we focused on four basic styles and then chose 6 to re-create using the EAC best practices for designing polling place materials. Our goal in doing this was to minimize the variations between the ballots to the layouts, so that simple design mistakes didn't confuse the testing.

The four styles are:

- Ballots with a limited number of rankings to fit into a three-column optical scan layout, including rank 3 (in one row) and 6 (in two rows).
- Grid-style ballots with one row for each candidate and one column for each ranking, up to the number of candidates.
- Ballots with repeated blocks of candidates laid out in newspaper columns so that any number of candidates can be ranked.
- Ballots that allow the voter to hand-enter the number of the ranking for each candidate.

Full-scale versions of the paper ballots are available on the [Ranked Choice Voting Resource Center website](#).

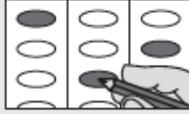


# Paper ballots with 3 ranks (one row)

**Official Ballot**  
Franklin County, California General Election Tuesday, November 6, 2012 2/2

**Instructions for Ranked Choice Voting**

- Pick your 1st choice candidate and completely fill in the oval next to that candidate under First Choice.
- If you have a 2nd choice candidate, fill in the oval next to that candidate under Second Choice.
- Mark your 3rd choice candidate, if you have one, the same way under Third Choice.



- Mark at least one candidate for your vote to count.
- If you make a mistake ask for a new ballot. Otherwise your vote may not count.
- All three choices must be different from each other.
- Don't mark more than one in each column.

**Mayor**

1 First Choice Fill in one oval	2 Second Choice Fill in one oval	3 Third Choice Fill in one oval
<input type="radio"/> Frederick Sharp Orange Party	<input type="radio"/> Frederick Sharp Orange Party	<input type="radio"/> Frederick Sharp Orange Party
<input type="radio"/> Luis Garcia Orange Party	<input type="radio"/> Luis Garcia Orange Party	<input type="radio"/> Luis Garcia Orange Party
<input type="radio"/> Alex Wallace Purple Party	<input type="radio"/> Alex Wallace Purple Party	<input type="radio"/> Alex Wallace Purple Party
<input type="radio"/> Eric Savoy Purple Party	<input type="radio"/> Eric Savoy Purple Party	<input type="radio"/> Eric Savoy Purple Party
<input type="radio"/> Barbara Williams Tan Party	<input type="radio"/> Barbara Williams Tan Party	<input type="radio"/> Barbara Williams Tan Party
<input type="radio"/> Lillian Cohen Lime Party	<input type="radio"/> Lillian Cohen Lime Party	<input type="radio"/> Lillian Cohen Lime Party
<input type="radio"/> Ann Windsock Independent	<input type="radio"/> Ann Windsock Independent	<input type="radio"/> Ann Windsock Independent
<input type="radio"/> Markos Miller Silver Party	<input type="radio"/> Markos Miller Silver Party	<input type="radio"/> Markos Miller Silver Party

**U.S. Representative**

1 First Choice Fill in one oval	2 First Choice Fill in one oval	3 First Choice Fill in one oval
<input type="radio"/> Valarie Altman Orange Party	<input type="radio"/> Valarie Altman Orange Party	<input type="radio"/> Valarie Altman Orange Party
<input type="radio"/> George Hovis Yellow Party	<input type="radio"/> George Hovis Yellow Party	<input type="radio"/> George Hovis Yellow Party
<input type="radio"/> Althea Sharp Purple Party	<input type="radio"/> Althea Sharp Purple Party	<input type="radio"/> Althea Sharp Purple Party
<input type="radio"/> Mary Tawa Lime Party	<input type="radio"/> Mary Tawa Lime Party	<input type="radio"/> Mary Tawa Lime Party
<input type="radio"/> Joe Li Tan Party	<input type="radio"/> Joe Li Tan Party	<input type="radio"/> Joe Li Tan Party
<input type="radio"/> Phil Wilkie Independent	<input type="radio"/> Phil Wilkie Independent	<input type="radio"/> Phil Wilkie Independent

Thank you for voting!  
Please turn in your finished ballot

As the most conventional layout for many jurisdictions, this ballot tested best of the optical-scan ballot layouts.

- It is easy to see the boundaries of each contest on a single row.
- The limited number of rankings matches the general interest among participants in marking their top choices.

## Drawbacks

- The repeated candidate names encourages voting for the same name twice.



# Paper ballots with 6 ranks (two rows)

 **Official Ballot**  
Franklin County, California General Election Tuesday, November 6, 2012

**Instructions**

**Ranked Choice Voting**

- Choose up to 6 candidates in order of your preference.
- Mark your choices in the columns: 1st, 2nd, 3rd and so on.
- Select a different candidate in each column.

Your 2nd, 3rd and other choices will not count against your 1st choice. They will only be considered if your 1st choice does not win.



**Begin voting below** ↓

**Mayor**

1 First Choice Fill in one oval	2 Second Choice Fill in one oval	3 Third Choice Fill in one oval
<input type="radio"/> Frederick Sharp Orange Party	<input type="radio"/> Frederick Sharp Orange Party	<input type="radio"/> Frederick Sharp Orange Party
<input type="radio"/> Luis Garcia Orange Party	<input type="radio"/> Luis Garcia Orange Party	<input type="radio"/> Luis Garcia Orange Party
<input type="radio"/> Alex Wallace Purple Party	<input type="radio"/> Alex Wallace Purple Party	<input type="radio"/> Alex Wallace Purple Party
<input type="radio"/> Eric Savoy Purple Party	<input type="radio"/> Eric Savoy Purple Party	<input type="radio"/> Eric Savoy Purple Party
<input type="radio"/> Barbara Williams Tan Party	<input type="radio"/> Barbara Williams Tan Party	<input type="radio"/> Barbara Williams Tan Party
<input type="radio"/> Lillian Cohen Lime Party	<input type="radio"/> Lillian Cohen Lime Party	<input type="radio"/> Lillian Cohen Lime Party
<input type="radio"/> Ann Windsock Independent	<input type="radio"/> Ann Windsock Independent	<input type="radio"/> Ann Windsock Independent
<input type="radio"/> Markos Miller Silver Party	<input type="radio"/> Markos Miller Silver Party	<input type="radio"/> Markos Miller Silver Party

4 Fourth Choice Fill in one oval	5 Fifth Choice Fill in one oval	6 Sixth Choice Fill in one oval
<input type="radio"/> Frederick Sharp Orange Party	<input type="radio"/> Frederick Sharp Orange Party	<input type="radio"/> Frederick Sharp Orange Party
<input type="radio"/> Luis Garcia Orange Party	<input type="radio"/> Luis Garcia Orange Party	<input type="radio"/> Luis Garcia Orange Party
<input type="radio"/> Alex Wallace Purple Party	<input type="radio"/> Alex Wallace Purple Party	<input type="radio"/> Alex Wallace Purple Party
<input type="radio"/> Eric Savoy Purple Party	<input type="radio"/> Eric Savoy Purple Party	<input type="radio"/> Eric Savoy Purple Party
<input type="radio"/> Barbara Williams Tan Party	<input type="radio"/> Barbara Williams Tan Party	<input type="radio"/> Barbara Williams Tan Party
<input type="radio"/> Lillian Cohen Lime Party	<input type="radio"/> Lillian Cohen Lime Party	<input type="radio"/> Lillian Cohen Lime Party
<input type="radio"/> Ann Windsock Independent	<input type="radio"/> Ann Windsock Independent	<input type="radio"/> Ann Windsock Independent
<input type="radio"/> Markos Miller Silver Party	<input type="radio"/> Markos Miller Silver Party	<input type="radio"/> Markos Miller Silver Party

**Thank you for voting!**  
Please turn in  
your finished ballot

This design is similar to the ballot with 3 ranks and works on a conventional optical scan ballot.

## Drawbacks

- Spreading the contest over two columns adds complexity to the marking process.
- This layout will not work for more than 8-10 candidates with a good font size and spacing between candidates.



# Paper ballots with blocks of ranks

**Official Ballot**  
Franklin County, California General Election Tuesday, November 6, 2012

**Instructions**



Mark the oval to the left of the candidate of your choice.  
Use a black pen.  
If you make a mistake, or want to change your vote, as a poll worker for a new ballot.

**Ranked Choice Voting**

- Pick your first choice candidate and completely fill in the oval next to that candidate under 1st Choice.
- Continue to mark your other choices in the same way.

Don't mark the oval for a candidate more than once.  
Don't mark the oval for more than one candidate in each choice.

**Mayor**

<p><b>1 First Choice</b> Fill in one oval</p> <p><input type="radio"/> Frederick Sharp Orange Party</p> <p><input type="radio"/> Luis Garcia Orange Party</p> <p><input type="radio"/> Alex Wallace Purple Party</p> <p><input type="radio"/> Eric Savoy Purple Party</p> <p><input type="radio"/> Barbara Williams Tan Party</p> <p><input type="radio"/> Lillian Cohen Lime Party</p> <p><input type="radio"/> Ann Windsock Independent</p> <p><input type="radio"/> Markos Miller Silver Party</p>	<p><b>4 Fourth Choice</b> Fill in one oval</p> <p><input type="radio"/> Frederick Sharp Orange Party</p> <p><input type="radio"/> Luis Garcia Orange Party</p> <p><input type="radio"/> Alex Wallace Purple Party</p> <p><input type="radio"/> Eric Savoy Purple Party</p> <p><input type="radio"/> Barbara Williams Tan Party</p> <p><input type="radio"/> Lillian Cohen Lime Party</p> <p><input type="radio"/> Ann Windsock Independent</p> <p><input type="radio"/> Markos Miller Silver Party</p>
<p><b>2 Second Choice</b> Fill in one oval</p> <p><input type="radio"/> Frederick Sharp Orange Party</p> <p><input type="radio"/> Luis Garcia Orange Party</p> <p><input type="radio"/> Alex Wallace Purple Party</p> <p><input type="radio"/> Eric Savoy Purple Party</p> <p><input type="radio"/> Barbara Williams Tan Party</p> <p><input type="radio"/> Lillian Cohen Lime Party</p> <p><input type="radio"/> Ann Windsock Independent</p> <p><input type="radio"/> Markos Miller Silver Party</p>	<p><b>5 Fifth Choice</b> Fill in one oval</p> <p><input type="radio"/> Frederick Sharp Orange Party</p> <p><input type="radio"/> Luis Garcia Orange Party</p> <p><input type="radio"/> Alex Wallace Purple Party</p> <p><input type="radio"/> Eric Savoy Purple Party</p> <p><input type="radio"/> Barbara Williams Tan Party</p> <p><input type="radio"/> Lillian Cohen Lime Party</p> <p><input type="radio"/> Ann Windsock Independent</p> <p><input type="radio"/> Markos Miller Silver Party</p>
<p><b>3 Third Choice</b> Fill in one oval</p> <p><input type="radio"/> Frederick Sharp Orange Party</p> <p><input type="radio"/> Luis Garcia Orange Party</p> <p><input type="radio"/> Alex Wallace Purple Party</p> <p><input type="radio"/> Eric Savoy Purple Party</p> <p><input type="radio"/> Barbara Williams Tan Party</p> <p><input type="radio"/> Lillian Cohen Lime Party</p> <p><input type="radio"/> Ann Windsock Independent</p> <p><input type="radio"/> Markos Miller Silver Party</p>	<p><b>6 Sixth Choice</b> Fill in one oval</p> <p><input type="radio"/> Frederick Sharp Orange Party</p> <p><input type="radio"/> Luis Garcia Orange Party</p> <p><input type="radio"/> Alex Wallace Purple Party</p> <p><input type="radio"/> Eric Savoy Purple Party</p> <p><input type="radio"/> Barbara Williams Tan Party</p> <p><input type="radio"/> Lillian Cohen Lime Party</p> <p><input type="radio"/> Ann Windsock Independent</p> <p><input type="radio"/> Markos Miller Silver Party</p>

Thank you for voting!  
Please turn in your finished ballot

This design was the **least successful** optical scan layout

## Drawbacks

- The relationship between the blocks of candidates is difficult to see. Although overvoting is less likely, it would be easy to vote for the same candidate twice.
- This layout will only work for a limited number of candidates without either requiring two pages or, worse, needing to spread one rank over two columns, inviting overvoting.



# Paper ballots with grid layout

**Official Ballot**  
Franklin County, California General Election Tuesday, November 6, 2012 2/2

**Instructions for Ranked Choice Voting**

**Making selections**  
Rank candidates in the order of your choice.  
You may rank as many or as few candidates as you wish.

**Fill in the oval...**

- In the 1st column for your first 1st choice.
- In the 2nd column for your 2nd choice.
- In the 3rd column for your 3rd choice, and so on.

Fill in the oval completely.      No more than 1 oval in a column.      No more than 1 oval for a candidate.

Mayor	First choice	Second choice	Third choice	Fourth choice	Fifth choice	Sixth choice	Seventh choice	Eighth choice	Ninth choice	Tenth choice
	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th
Frederick Sharp Orange Party	<input type="checkbox"/>									
Luis Garcia Orange Party	<input type="checkbox"/>									
Charles Layne Yellow Party	<input type="checkbox"/>									
Andrew Kowalski Yellow Party	<input type="checkbox"/>									
Alex Wallace Purple Party	<input type="checkbox"/>									
Eric Savoy Purple Party	<input type="checkbox"/>									
Barbara Williams Tan Party	<input type="checkbox"/>									
Lillian Cohen Lime Party	<input type="checkbox"/>									
Ann Windssock Independent	<input type="checkbox"/>									
Markos Miller Silver Party	<input type="checkbox"/>									
Elizabeth Harp Silver Party	<input type="checkbox"/>									

City Council	First choice	Second choice	Third choice	Fourth choice	Fifth choice	Sixth choice
	1st	2nd	3rd	4th	5th	6th
Valarie Altman Orange Party	<input type="checkbox"/>					
George Hovis Yellow Party	<input type="checkbox"/>					
Althea Sharp Purple Party	<input type="checkbox"/>					
Mary Tawa Lime Party	<input type="checkbox"/>					
Joe Li Tan Party	<input type="checkbox"/>					
Phil Wilkie Independent	<input type="checkbox"/>					

Remember to vote both sides of the ballot

This design offers the greatest flexibility for the number of candidates allowing full rankings.

When designed with good spacing, test participants liked it because it was compact and easy to understand.

## Drawbacks

- With a larger number of candidates it quickly becomes overwhelming and frustrating.
- It takes longer to complete because of the additional ranking options and the time to carefully track across the rows and columns.



# Paper ballots with hand written rankings

 **Official Ballot**  
Franklin County, California General Election Tuesday, November 6, 2012

**Instructions for Ranked Choice Voting**

**Making selections**  
Rank candidates in the order of your choice.  
You may rank as many or as few candidates as you wish.

**In the box next to the candidate**

- Write 1 for your 1st choice
- Write 2 for your 2nd choice
- Write 3 for your 3rd choice, and so on



**i** Give each candidate you rank a different number.

**Mayor**

Frederick Sharp  
Orange Party

Luis Garcia  
Orange Party

Charles Layne  
Yellow Party

Andrew Kowalski  
Yellow Party

Alex Wallace  
Purple Party

Eric Savoy  
Purple Party

Barbara Williams  
Tan Party

Lillian Cohen  
Lime Party

Ann Windsock  
Independent

Markos Miller  
Silver Party

Elizabeth Harp  
Silver Party

**City Council**

Valarie Altman  
Orange Party

George Hovis  
Yellow Party

Althea Sharp  
Purple Party

Mary Tawa  
Lime Party

Joe Li  
Tan Party

Phil Wilkie  
Independent

Remember to vote both sides of the ballot 

This design offers the greatest flexibility for the voter in ranking candidates.

It is easy to understand and check.

The layout lists each candidate once and a consistent relationship to the marking location.

Participants strongly preferred it over the grid-style ballot.

## Drawbacks

- Participants often made initial mistakes, either putting an “X” in box or wanting to change the ranking order as they worked.
- May not be possible to count accurately with optical character recognition.



# Digital ballots

There are two basic styles of digital layouts for ranked choice voting in demonstration ballots:

- The “two list” style in which the list of candidate is dragged from one list to another to place them in ranks
- The “one list” style in which a single list is ranked by dragging candidates into order.

We were not able to find any demonstration ballots that looked like a realistic ballot, or which was not overtly political, and so appropriate to use for testing.

We initially used a survey tool to explore the conceptual model of the two-list style and found that, as expected, this model is reasonably well understood and that the idea of making selections electronically is desirable.



# Two-list digital ballot exploration

Luis Garcia [ORANGE]	
Charles Layne [YELLOW]	
Andrew Kowalski [YELLOW]	
Eric Savoy [PURPLE]	
Lillian Cohen [LIME]	
Ann Windsock [INDEPENDENT]	
Markos Miller [SILVER]	
Elizabeth Harp [SILVER]	

Your selections for MAYOR	
1	Frederick Sharp [ORANGE]
2	Alex Wallace [PURPLE]
3	Barbara Williams [TAN]

The weak visual design and interaction cues meant that participants reacted negatively to this exploration.

Participants liked the clean interface and the ability to choose how many to rank.



# Digital ballot – paper prototype

Settings Help Review your votes

**Mayor**  
Rank the people in the order of your choice.  
You may rank as many or as few as you wish.  
Select your **1st** choice

<input type="checkbox"/>	Frederick Sharp	Orange
<input type="checkbox"/>	Luis Garcia	Orange
<input type="checkbox"/>	Alex Wallace	Purple
<input type="checkbox"/>	Eric Savoy	Purple
<input type="checkbox"/>	Barbara Williams	Tan
<input type="checkbox"/>	Lillian Cohen	Lime
<input type="checkbox"/>	Ann Windsock	Independent
<input type="checkbox"/>	Markos Miller	Silver
Touch here to write in another name		

← Last contest 3 of 18 Skip contest →

Contest with no rankings

Settings Help Review your votes

**Mayor**  
Rank the people in the order of your choice.  
You may rank as many or as few as you wish.  
Select your **5th** choice

<b>2</b>	Frederick Sharp	Orange
<b>1</b>	Luis Garcia	Orange
	Alex Wallace	Purple
<b>5</b>	Eric Savoy	Purple
<b>4</b>	Barbara Williams	Tan
	Lillian Cohen	Lime
<b>3</b>	Ann Windsock	Independent
	Markos Miller	Silver
Touch here to write in another name		

← Last contest 3 of 18 Next contest →

Ranking in progress

Settings Help Review your votes

**Mayor**  
You can choose more candidates to rank,  
change the order of the candidates,  
or remove a candidate from your list.

<b>1</b>	Luis Garcia	Orange	
<b>2</b>	Frederick Sharp	Orange	
<b>3</b>	Ann Windsock	Independent	
<b>4</b>	Barbara Williams	Tan	
<b>5</b>	Alex Wallace	Purple	↑ ↓ X
<b>6</b>	Eric Savoy	Purple	
	Lillian Cohen	Lime	
	Markos Miller	Silver	
Touch here to write in another name			

Return to review and cast your vote →

Rankings being adjusted

All of the activity to rank a contest takes place on a single screen. The prompt at the top and the appearance of the candidates changes to provide feedback as the voter works.



# Principle: Use best practices for ballot design

Use best practices for ballot design from the Election Assistance Commission and Voluntary Voting System Guidelines requirements for accessibility as a starting point for ballot layouts for any ranked choice voting contest.

# Starting with best practices

As we developed the ballots to use for this project, we recreated common layouts using the style of the EAC best practices for designing polling place materials.

The first section of the ballot design recommendations shows how those guidelines apply to ranked choice voting ballots—just as they do to any ballot.

Good typography, including large enough type, use of shading and white space, and other visual design elements help make the contests and information elements on the ballot easily visible.

With all of the ballots using the same design basics, many of the differences between different ranked choice layouts became less critical, allowing voters to focus on making effective choices for ranking.



# Use best practices for ballot design

## Guideline 1: Use typography to make the ballot easy to read

Rank up to 6 candidates. Mark no more than 1 oval in each column.	First choice	Second choice	Third choice	Fourth choice	Fifth choice	Sixth choice
	1st	2nd	3rd	4th	5th	6th
<b>Valarie Altman</b> Orange Party	<input type="radio"/>					
<b>George Hovis</b> Yellow Party	<input type="radio"/>					
<b>Althea Sharp</b> Purple Party	<input type="radio"/>					
<b>Mary Tawa</b> Lime Party	<input type="radio"/>					
<b>Joe Li</b> Tan Party	<input type="radio"/>					

Avoid centered type.

Make text large enough to read.  
At least 10-12 points

Mayor	
1 First Choice Fill in one oval	2 Second Choice Fill in one oval
<input type="radio"/> <b>Frederick Sharp</b> Orange Party	<input type="radio"/> <b>Frederick Sharp</b> Orange Party
<input type="radio"/> <b>Luis Garcia</b> Orange Party	<input type="radio"/> <b>Luis Garcia</b> Orange Party
<input type="radio"/> <b>Alex Wallace</b> Purple Party	<input type="radio"/> <b>Alex Wallace</b> Purple Party
<input type="radio"/> <b>Eric Savoy</b> Purple Party	<input type="radio"/> <b>Eric Savoy</b> Purple Party

Use size and weight to make candidate names stand out.

Have a consistent relationship between the candidate name and marking area.

Frederick Sharp	Orange
Luis Garcia	Orange
Alex Wallace	Purple
Eric Savoy	Purple
Barbara Williams	Tan
Lillian Cohen	Lime
Ann Windsock	Independent
Markos Miller	Silver
Touch here to write in another name	

Use clear font with minimal decoration.  
Examples: Helvetica, Univers, Arial, Verdana, Clearview



# Use best practices for ballot design, both on paper and digital ballots

## Guideline 2: Use visual design to attract attention and separate contests.

Mayor					
Rank up to 10 candidates. Mark no more than 1 oval in each column.	First choice	Second choice	Third choice	Fourth choice	Fifth
	1st	2nd	3rd	4th	5th
Frederick Sharp Orange Party	<input type="radio"/>				
Luis Garcia Orange Party	<input type="radio"/>				

<input type="radio"/> Markos Miller Silver Party	<input type="radio"/> Markos Miller Silver Party
U.S. Representative	
<b>1</b> First Choice Fill in one oval	<b>2</b> First Choice Fill in one oval
<input type="radio"/> Valarie Altman Orange Party	<input type="radio"/> Valarie Altman Orange Party

Identify each contest in a consistent location, and use shading to make the heading visible.

Make rankings easy to see with larger, bold type.

Use contrast, shading, and lines to separate contests.



# Use best practices for ballot design, both on paper and digital ballots

## Guideline 3: On a digital ballot, only one contest per page.

The screenshot shows a digital ballot interface for a Mayor contest. At the top, there are three buttons: 'Settings' (with a gear icon), '? Help', and 'Review your votes'. Below these is a section titled 'Mayor' with an information icon. The instructions read: 'Rank the people in the order of your choice. You may rank as many or as few as you wish. Select your 1st choice'. The ballot lists nine candidates, each with a name and a color-coded box: Frederick Sharp (Orange), Luis Garcia (Orange), Alex Wallace (Purple), Eric Savoy (Purple), Barbara Williams (Tan), Lillian Cohen (Lime), Ann Windsock (Independent), Markos Miller (Silver), and a 'Touch here to write in another name' option. At the bottom, there are navigation buttons: '← Last contest', '3 of 18', and 'Skip contest →'.

Frederick Sharp	Orange
Luis Garcia	Orange
Alex Wallace	Purple
Eric Savoy	Purple
Barbara Williams	Tan
Lillian Cohen	Lime
Ann Windsock	Independent
Markos Miller	Silver
Touch here to write in another name	

If a digital ballot layout has more than one contest on a page, check carefully that:

- Each contest has equal weight on the page and none are “hidden” by larger contests.
- There is clear separation between contests.
- Each contest fits on a single page or in a single column.
- Navigation between contests is controlled by the user and is easy to discern.



# Use best practices for ballot design, both on paper and digital ballots

## Guideline 4: On a digital ballot, use a vertical screen orientation so more candidates can fit on each screen.

The screenshot shows a digital ballot interface for a Mayor election. At the top, there are three buttons: "Settings" (with a gear icon), "? Help", and "Review your votes". Below this is a section titled "Mayor" with an information icon. The instructions read: "Rank the people in the order of your choice. You may rank as many or as few as you wish. Select your 5th choice". The ballot lists nine candidates, each with a rank box on the left and a color on the right. The candidates and their colors are: Frederick Sharp (Orange), Luis Garcia (Orange), Alex Wallace (Purple), Eric Savoy (Purple), Barbara Williams (Tan), Lillian Cohen (Lime), Ann Windsock (Independent), Markos Miller (Silver), and a "Touch here to write in another name" option. At the bottom, there are three buttons: "← Last contest", "3 of 18", and "Next contest →".

Rank	Candidate	Color
2	Frederick Sharp	Orange
1	Luis Garcia	Orange
	Alex Wallace	Purple
5	Eric Savoy	Purple
4	Barbara Williams	Tan
	Lillian Cohen	Lime
3	Ann Windsock	Independent
	Markos Miller	Silver
	Touch here to write in another name	

Arrange the whole screen, but especially the list of candidates in a single column. This is a strong recommendation for accessibility for voters with low vision or low-literacy.



Principle:

On a digital ballot, give the voter control of all interactions

Using a digital ballot should be simple and straightforward. This is especially helpful for people not familiar with computers and people with disabilities.

# Giving voters control

Given all the mistakes that can happen marking a ballot, we think that a good general principle is that voting systems should not make or change ballot choices except under the direct control of the voter.

This guideline is especially true in ranked choice voting, where people new to this way of voting have concerns about how their ballots will be counted.

During the testing, especially with the digital mockups, we asked voters about three scenarios that explored the intersection of how they understood ranked choice voting to work and the way they interacted with the ballot.



# Scenario 1: voting *against* a candidate

**How would they mark their ballot if there was a candidate they strongly opposed?**

In this scenario, we wanted to understand their strategy, and were concerned about designs that automatically assigned all candidates a rank. Participants split between leaving that candidate out of their rankings and carefully ranking all candidates so he could be last.

Several said that their goal was to ensure that their ballot would never be able to be counted for that candidate. As one young, avid voter put it:

**”I would prefer to have my vote thrown out than to have my ballot count for that person [someone I really disliked]”**



# Scenario 2: controlling the order

**Did they want the digital ballot to automatically re-organize the list into rank order as they assigned ranks?**

In this scenario, we wanted to know if it was helpful or distracting to have the list of candidates re-arranged as they worked.

Although the participants were split on this issue, most did not want the screen to change until they were ready, and wanted to decide when the list should be re-arranged in rank order. They were concerned about:

- Losing their place in a long list
- Being confused about what was happening
- Losing track of which candidates were still not ranked
- How this would work for voters using the audio feature of the ballot – would they have to listen to the list over and over?



# Scenario 3: gestures or visible controls

## Would they use gestures or other hidden controls?

In this scenario, we wanted to know whether the use of gestures or other non-visual interface controls was acceptable.

We already knew that this was a problem for accessibility, which requires a way to identify and activate each function. But we expected that testing in the high tech San Francisco Bay area would produce a strong preference for rapid interactions like gestures.

We were surprised that participants liked having clear visible buttons because it told them what they could do without needing to guess or explore, adding time and possibly frustration to the voting process.

However, this does not mean that gestures like drag-and-drop had to be avoided—just that they could not be the only (or even primary) way to interact with the ballot and rank candidates.



# On a digital ballot, give the voter control of all interactions

## Guideline 5: Have visible controls for all actions.

- Visible controls tell a user what actions are possible.
- Gestures like dragging or swiping can be an alternative method of ranking.
- Visible controls are an important tool for accessibility by providing targets for interaction that can be identified in the audio instructions.
- Do not use drop-down lists to number rankings.

1	Luis Garcia	Orange	
2	Frederick Sharp	Orange	
3	Ann Windsock	Independent	
4	Barbara Williams	Tan	
5	Eric Savoy	Purple	
6	Alex Wallace	Purple	↑ ↓ X

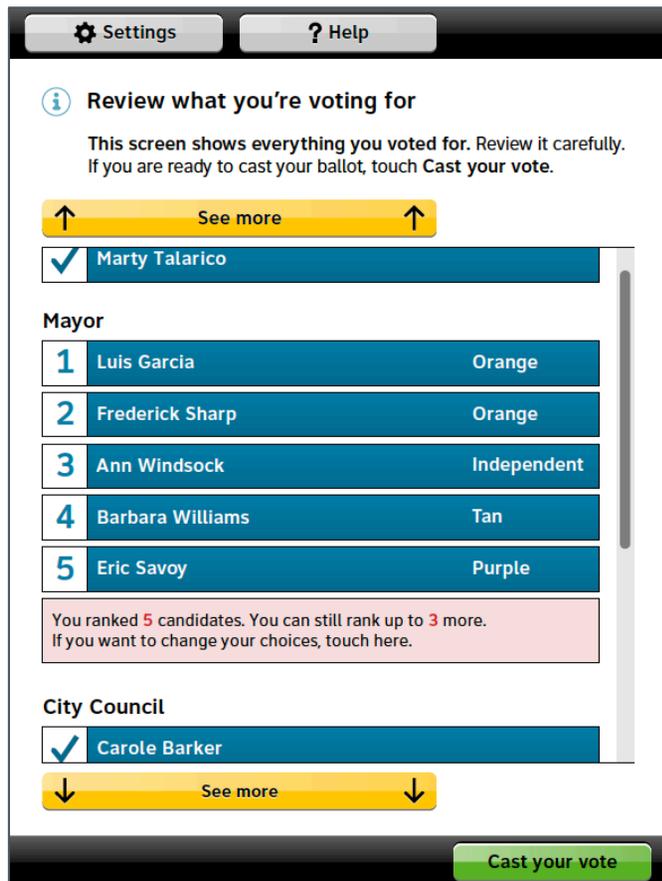
1	Luis Garcia	Orange	
2	Frederick Sharp	Orange	
3	Ann Windsock	Independent	
4	Barbara Williams	Tan	
5	Alex Wallace	Purple	↑ ↓ X
6	Eric Savoy	Purple	

Controls appear next to the selected candidate for moving up or down (or removing from) the ranking



# On a digital ballot, give the voter control of all interactions

## Guideline 6: Provide a review screen where voters can confirm and change their choices and rankings.



Display candidates in rank order on the review screen.

Display information about how many candidates were ranked, and how many more rankings are possible.



# On a digital ballot, give the voter control of all interactions

## Guideline 7: Do not automatically re-order candidates.

Settings ? Help Review your votes

**Mayor**  
Rank the people in the order of your choice.  
You may rank as many or as few as you wish.  
Select your **5th** choice

2	Frederick Sharp	Orange
1	Luis Garcia	Orange
	Alex Wallace	Purple
5	Eric Savoy	Purple
4	Barbara Williams	Tan
	Lillian Cohen	Lime
3	Ann Windsock	Independent
	Markos Miller	Silver
	Touch here to write in another name	

Display in rank order

← Last contest 3 of 18 Next contest →

This guideline applies whether the candidates are ranked in a single list or moved from one list to another to rank them.

Leave candidates in ballot order until the voter chooses to change the list to rank order.

Include a visible button so voters can re-display the list in rank order.



# On a digital ballot, give the voter control of all interactions

## Guideline 8: Allow voters to leave candidates out of the ranking

**Settings** **Help** **Review your votes**

**Mayor**  
You can choose more candidates to rank, change the order of the candidates, or remove a candidate from your list.

1	Luis Garcia	Orange
2	Frederick Sharp	Orange
3	Ann Windsock	Independent
4	Barbara Williams	Tan
5	Alex Wallace	Purple
6	Eric Savoy	Purple
	Lillian Cohen	Lime
	Markos Miller	Silver
	Touch here to write in another name	

**Return to review and cast your vote →**

Voters had diverse—and strongly held—opinions about how many candidates to rank.

Candidates not ranked are moved to the end of the list when displayed in rank order.



Principle:  
Include clear, concise  
instructions that help  
voters avoid errors and  
rank candidates as they  
intend

Instructions on paper and digital ballots  
should be easy to find and easy to  
follow.

# How much instruction is needed?

We tested a range of instructions for:

- Length
- Type and number of illustrations
- What information was most important

In general:

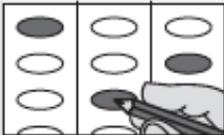
- Participants liked the shorter instructions, with fewer words to read.
- They liked having at least one illustration.
- They did not think illustrations needed extra explanation.



# Ballot instructions sampler

**Instructions for Ranked Choice Voting**

1. Pick your 1st choice candidate and completely fill in the oval next to that candidate under First Choice.
2. If you have a 2nd choice candidate, fill in the oval next to that candidate under Second Choice.
3. Mark your 3rd choice candidate, if you have one, the same way under Third Choice.



- ! Mark at least one candidate for your vote to count.
- ! If you make a mistake ask for a new ballot. Otherwise your vote may not count.
- ! All three choices must be different from each other.
- ! Don't mark more than one in each column.

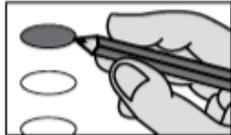
Rank the people in the order of your choice.  
You may rank as many or as few as you wish.

**Instructions**

**Ranked Choice Voting**

- Choose up to 6 candidates in order of your preference.
- Mark your choices in the columns: 1st, 2nd, 3rd and so on.
- Select a different candidate in each column.

Your 2nd, 3rd and other choices will not count against your 1st choice. They will only be considered if your 1st choice does not win.



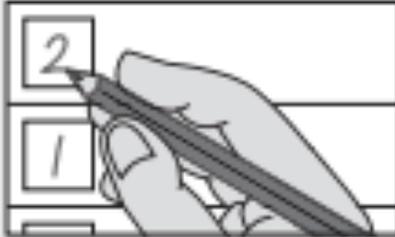
**Instructions for Ranked Choice Voting**

**Making selections**

Rank candidates in the order of your choice.  
You may rank as many or as few candidates as you wish.

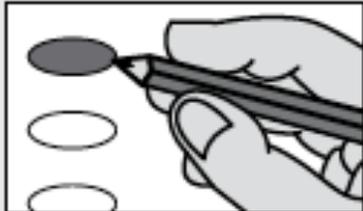
**In the box next to the candidate**

- Write 1 for your 1st choice
- Write 2 for your 2nd choice
- Write 3 for your 3rd choice, and so on



- ! Give each candidate you rank a different number.

**Instructions**



Mark the oval to the left of the candidate of your choice.  
Use a black pen.

If you make a mistake, or want to change your vote, as a poll worker for a new ballot.

**Ranked Choice Voting**

- Pick your first choice candidate and completely fill in the oval next to that candidate under 1st Choice.
- Continue to mark your other choices in the same way.

Don't mark the oval for a candidate more than once.  
Don't mark the oval for more than one candidate in each choice.



# Include clear, concise instructions that help voters avoid errors

## Guideline 9: Put instructions where voters need them.

**Official Ballot**  
Franklin County, California General Election Tuesday, November 6, 2012 2/2

**Instructions for Ranked Choice Voting**

1. Pick your 1st choice candidate and completely fill in the oval next to that candidate under First Choice.
2. If you have a 2nd choice candidate, fill in the oval next to that candidate under Second Choice.
3. Mark your 3rd choice candidate, if you have one, the same way under Third Choice.

**!** Mark **at least one candidate** for your vote to count.

**!** If you make a mistake ask for a new ballot. Otherwise your vote may not count.

**!** All three choices must be different from each other.

**!** Don't mark more than one in each column.

Mayor

On a paper ballot, put instructions on the top of the ballot, or just before the first ranked choice voting contest.

Settings ? Help Review your votes

**i** **Mayor**

Rank the people in the order of your choice.  
You may rank as many or as few as you wish.  
Select your **1st** choice

Frederick Sharp	Orange
Luis Garcia	Orange

On a digital ballot, place instructions at the top of each contest.



# Include clear, concise instructions that help voters avoid errors

## Guideline 10: Use informational icons and typography for emphasis



Mark **at least one candidate** for your vote to count.

Use bold for emphasis.



If you make a mistake ask for a new ballot. Otherwise your vote may not count.

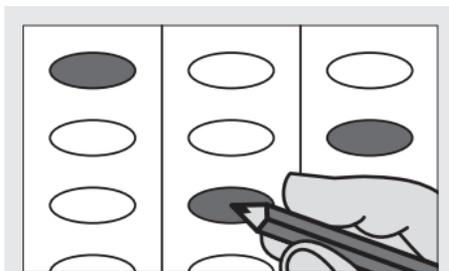
Tell voters how to fix errors.

If used sparingly, icons draw attention to important instructions.



# Include clear, concise instructions that help voters avoid errors

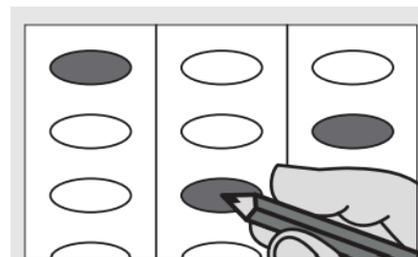
## Guideline 11: On a paper ballot, use illustrations with text instructions for how to mark a ranked choice ballot.



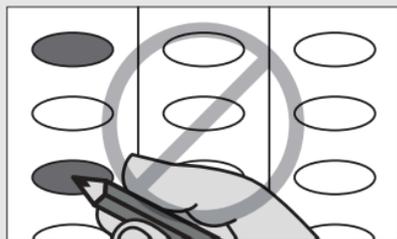
Show one correct way of marking.  
Or, show the correct way of marking with examples of common errors.

- ❗ All three choices must be different from each other.
- ❗ Don't mark more than one in each column.

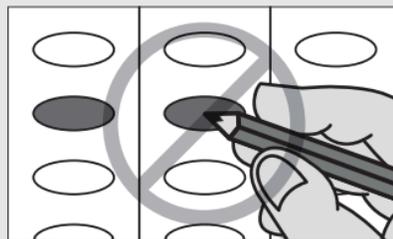
Put each instruction in a separate paragraph.



Correct! All 3 choices must be different.



No more than one oval in a column.



Don't choose the same candidate more than once.



# Include clear, concise instructions that help voters avoid errors

## Guideline 12: On a digital ballot, show the voter's progress in ranking candidates.

Inform voters of the rank they are selecting.

The display might also include how many more choices are possible.

**i** Mayor

Rank the people in the order of your choice.  
You may rank as many or as few as you wish.  
Select your **5th** choice

2	Frederick Sharp	Orange
1	Luis Garcia	Orange
	Alex Wallace	Purple
5	Eric Savoy	Purple
4	Barbara Williams	Tan

While making initial selections

**Mayor**

1	Luis Garcia	Orange
2	Frederick Sharp	Orange
3	Ann Windsock	Independent
4	Barbara Williams	Tan
5	Eric Savoy	Purple

You ranked **5** candidates. You can still rank up to **3** more.  
If you want to change your choices, touch here.

On the review page



# How we conducted this study

Research into current practice

Prototypes based on EAC designs

Usability testing in 4 locations

## Research into current practice

The project began with an analysis of ranked choice ballots and voter information used in jurisdictions around the country, including different styles of paper ballots:

- Rank 3 and rank 6 in parallel columns
- Rank 6 in newspaper columns
- Grids with as many options as candidate
- Manual entry of ranking numbers

We focused on paper ballots for the initial work because even jurisdictions with electronic ballot marking also need paper for vote-by-mail or provisional ballots.



## **Prototypes based on EAC best practice guidelines**

We created prototype ballots based on best practices for ballot design in the EAC Guidelines.

All of the ballots had readable text, good spacing and size of marking areas, similar placement of instructions, the same style of instructional illustrations, and shading and other graphical elements used in a consistent way.

This meant that the ranked choice voting layout was the biggest difference among the prototype ballots.

In the usability testing, we found that few of the participants had trouble with the basic task of marking their ballot with any of the layouts, once they were designed well.



# Usability testing

## Four locations

Locations without ranked choice voting

1. Southern California
2. Princeton / Union, NJ

Locations with ranked choice voting

3. Minneapolis
4. San Francisco / Oakland

## Participants

52 people

Ages 21 – 79

Convenience sample

## Voting experience

First time voters

Experienced voters

A few non-voters



We conducted four rounds of usability testing, each focused on different ranked choice voting materials.

- Three styles of optical scan ballot layouts.
- Grid and list ballots
- Digital and paper ballots
- Digital ballot and election results

We updated the voter education flyer in each test, refining both the content of the flyer and the presentation of the explanation of how ranked choice voting is counted.

Participants were asked to mark ballots, and were interviewed about their preferences for different designs, and about their reactions to ranked choice voting as a concept based on the materials used in the test.

# Summary

Printable list of the best  
practice recommendations

# Best practices for voter education

## Give voters the information they need to prepare to vote

1. Explain the benefits and basics of ranked choice voting.
2. Answer voters' questions about how to make their choices and how their ballot is counted.
3. Show the connection between an individual ballot and the overall counting process.
4. Repeat and re-emphasize important points about ranked choice voting.

## Present all information in clear, simple language

5. Keep sentences short and to the point, using everyday words.
6. Use illustrations and visual explanations to help explain how ranked choice voting works.
7. Use icons sparingly to draw attention to different types of information.

## Repeat important messages

8. Provide general instructions about ranked choice voting in the polling place or vote-by-mail materials in an appropriate format.
9. On a digital ballot, make this information easy to find with an always-visible “help” button on all screens.



# Best practices for election results

## Make election results transparent

1. When reporting results, show the winner before explaining the counting process.
2. Describe what happens in each round, then follow with a visual display.
3. Show all rounds of counting leading to the winner.
4. Make it easy to see the number of votes transferred to each candidate during each round.
5. Show inactive ballots in the results list. Differentiate inactive ballots from the active candidates.
6. Make it easy for users to navigate both forwards and backwards in the process of counting.



# Best practices for ballot design

## Use best practices for ballot design, for both paper and digital ballots

1. Use typography to make the ballot easy to read.
2. Use visual design to attract attention and separate contests.
3. On a digital ballot, only one contest per page.
4. On a digital ballot, use a vertical screen orientation (a screen that is taller than wider) so that more candidates can fit on each screen.

## On a digital ballot, give the voter control of all interactions

5. Have visible controls for all actions.
6. Provide a review screen where voters can confirm and change their choices and rankings.
7. Do not automatically re-order candidates.
8. Allow voters to leave candidates out of the ranking.



# Best practices for ballot instructions

**Include clear, concise instructions that will help voters avoid errors and rank candidates as they intend**

9. Put instructions where voters need them.
10. Use informational icons and typography for emphasis.
11. On a paper ballot, use illustrations with text instructions for how to mark a ranked choice ballot.
12. On a digital ballot, show the voter's progress in ranking candidates.



# Resources



Field Guides to Ensuring Voter Intent have general guidelines for voter education and ballot design best practices

<http://civicdesign.org/fieldguides>



The EAC best practices for designing polling place materials can be downloaded from the EAC website.

<http://bit.ly/2mdGDGM>



The Ranked Choice Voting Resource Center has information for voters, election administrators, candidates, and policy makers

<http://www.rankedchoicevoting.org/>

