

A Guide to Voting Methods Abbreviations



Quick Reference

For a definition of a particular term, click on it to be directed to that point in the document.

CES:	Center for Election Science
CfER:	Californians for Electoral Reform
C.R.S.:	Colorado Revised Statutes
CVR:	cast vote record
EA:	election administrator
EAC:	Election Assistance Commission
EC:	Electoral College
ENR:	Election Night Reporting
EO:	elected official
FEC:	Federal Election Commission
FPTP:	First Past the Post
FRA:	Fair Representation Act
H.R.:	House Resolution
HAVA:	Help America Vote Act
IRV:	instant-runoff voting
LAC:	Legislative Action Committee
MGGG:	Metric Geometry and Gerrymandering Group
MMP:	mixed-member proportional representation
MW:	multi-winner
NIST:	National Institute of Standards and Technology
NPVC:	National Popular Vote Compact
PAV:	proportional approval voting
PR:	proportional representation
PVI:	Partisan Voting Index
RCV:	Ranked Choice Voting
RLA:	risk-limiting audit
SCORE:	Statewide Colorado Registration and Election
SoS:	Secretary of State
SPAV:	sequential proportional approval voting
STAR:	Score Then Automatic Runoff (voting)
STV:	single transferable vote
SW:	single-winner
UOCAVA:	Uniformed and Overseas Citizens Absentee Voting Act
VRA:	Voting Rights Act of 1965
VSTL:	Voting System Testing Laboratories
VVSG:	Voluntary Voting System Guidelines

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This document was created by the LWV of Boulder County Voting Methods Team.

Voting Methods and Their Attributes

FPTP: First Past the Post – another name for **plurality voting, the most common form of voting in the US**. Voters may only choose one candidate in a single-winner contest or n candidates in an n-winner contest. (In a Boulder city council election, n equals at least 5; there are always at least 5 seats to fill so voters can choose 5 candidates.) The candidate receiving the most votes wins. When there are n seats to fill, the n candidates receiving the most votes win.

SW: single-winner (adjective) – **A single-winner contest on a ballot elects only one winner**. Sometimes single-winner contests are used to elect people to multi-member boards or legislatures, but single-winner contests, in practice, are winner-take-all contests and do not promote [proportional representation \(PR\)](#). [For a “get-into-the weeds” example of theoretically proportional single-winner contests to a legislative body, see PLACE voting: <https://medium.com/@jameson.quinn/place-voting-explained-129e65cbb625>.]

MW: multi-winner (adjective) – **A multi-winner contest on a ballot elects two or more winners**. Multi-winner contests provide the opportunity for a proportional voting method. However, not all multi-winner voting methods lead to proportional representation. For example, block voting can award all the seats to the preferences of a plurality or majority of voters.

- Proportional voting methods include single transferable vote (STV), proportional approval voting (PAV), sequential approval voting (SPAV) and satisfaction approval voting.
- Block voting methods include plurality block voting, preferential block (ranked) voting, and approval block voting.

PR: proportional representation – **the concept that one or more characteristics of a population are proportionally reflected in an elected body**. The most salient characteristic in elections is usually political party affiliation, but in non-partisan elections other characteristics, e.g., stands on issues, responsiveness to constituents, race, housing status, or gender, may be more important. Proportional voting methods enable sizable communities of interest to elect candidates who represent their views.

MMP: mixed-member proportional representation – **an electoral system in which voters get two votes: one for their district’s representative and one for a political party. After the district representatives are elected, the at-large seats are allocated to parties in a compensatory manner to achieve proportional representation**. MMP is used in countries in 5 continents, including in Germany, New Zealand, South Korea, Bolivia and for local elections in South Africa. (A parliamentary system may use MMP, plurality voting or another method to elect its MPs or members of parliament.)

RCV: Ranked Choice Voting – **an umbrella term for voting methods which allow voters to rank candidates in order of preference and elect candidates who receive the threshold number of votes**. If no candidate receives the threshold and there are more candidates remaining than seats to fill, the candidate with the fewest number of votes is eliminated, and the ballots with a vote for the eliminated candidate go to the next higher ranked candidate who is still not eliminated or elected. If there is no next higher candidate, the ballot is exhausted. In the single

transferable vote (STV) form of Ranked Choice Voting, when a candidate receives surplus votes above the threshold, the surplus votes are then distributed to the next higher ranked candidate who is not eliminated or elected. The process continues until all the seats are filled or the number of remaining candidates equals the number of seats left to fill.

- Confusion and Disagreements
 - RCV includes single-winner and multi-winner voting methods. The media often confuse different forms of Ranked Choice Voting, stating that Ranked Choice Voting leads to proportional representation and then only discussing instant-runoff voting (IRV, see below) – the single-winner, winner-take-all, non-proportional form of RCV.
 - Different organizations include different forms of Ranked Choice Voting in their umbrella. FairVote has the most expansive umbrella, including preferential block voting, first piloted in two Utah towns in 2019. The RCV Resource Center and RCV for Colorado do not include preferential block voting in their list of acceptable forms of RCV.
 - Many people think Ranked Choice Voting refers to any form of ranked voting, but some other forms of ranked voting, such as Borda count and Bucklin voting, are not in the RCV umbrella. SurveyMonkey’s Ranking option uses Borda count.
 - RCV is a “brand name” first used in the 21st century. The specific names for the two best-known forms of RCV are instant-runoff voting (IRV) and single transferable vote (STV). The Secretary of State uses the terms IRV, STV and ranked voting rather than RCV.

IRV: instant-runoff voting – a single-winner voting method used with more than two candidates which allows voters to rank candidates in order of preference and eliminates candidates in rounds until one candidate is elected by reaching the threshold or by being the sole remaining candidate. (Short video explanation: <https://www.youtube.com/watch?v=5SLQXNpzsk>)

Voters rank their preferred candidate #1 and may choose to give other candidates lower rankings: #2 for their 2nd choice, #3 for their third choice, and so on. The #1 ranking is the most important and often the only ranking tallied on a ballot. If a candidate receives a majority of #1 rankings in the first round, that candidate is the winner. (Only winners in the first round are guaranteed to win with a majority of the vote.) Otherwise, the candidate with the fewest number of votes (#1 rankings in the first round) is eliminated, and the ballots for those candidates transfer their vote to the next higher ranked candidate who is not eliminated. If there is no next higher candidate, the ballot is exhausted. In the new round of counting, if a candidate receives more than half of the active (non-exhausted votes), the candidate wins. The elimination-and-transfer process continues until one candidate has more votes than all the other non-eliminated candidates and is declared a winner.

- Instant-runoff voting is usually what people mean when they refer to Ranked Choice Voting.

STV: single transferable vote – a multi-winner proportional voting method which allows voters to rank candidates in order of preference and elects candidates who receive the threshold number of votes. (Short video explanation:

<https://www.youtube.com/watch?v=INxwMdl8OWw>) Voters give candidates different rankings with 1 being the highest ranking, 2 being the next highest and so on. If no candidate receives the threshold and there are more candidates remaining than seats to fill, the candidate with the fewest number of votes is eliminated, and the ballots with a vote for the eliminated candidate go to the next higher ranked candidate who is still not eliminated or elected. If there is no next

higher candidate, the ballot is exhausted. Single transferable vote minimizes wasted votes, i.e., votes which don't help a candidate win. If a candidate receives surplus votes above the threshold, the surplus votes are distributed to the next higher ranked candidate who is not eliminated or elected. The process of transferring surplus votes and votes from eliminated candidates continues until all the seats are filled or the number of remaining candidates equals the number of seats left to fill.

STAR Voting: Score Then Automatic Runoff Voting – a voting method which allows voters to rate or score every candidate on a scale, e. g., from 0 to 5, where 5 shows the highest level of support and which tabulates the winner in two rounds. The voting portion is known as score voting, but rather than immediately electing the candidate with the largest sum of scores, Score Then Automatic Runoff Voting (STAR) takes the two candidates with the largest sums for the second round (or runoff) and looks at each ballot for those two candidates. Any time candidate A has a higher score than candidate B, candidate A gets one vote in the runoff and vice versa. The candidate with the most votes in the runoff wins. STAR voting usually refers to single-winner contests, but a multi-winner form also exists.

SPAV: sequential proportional approval voting – a multi-winner form of approval voting which uses rounds of counting and decreasing weights (usually 1, $\frac{1}{2}$, $\frac{1}{3}$, $\frac{1}{4}$, etc.) for ballots in subsequent rounds when a ballot selection won in a previous round. Each round results in a winner, so filling 3 seats requires 3 rounds and two ballot re-weightings. The reweighting enables more voters to elect a candidate they support and results in proportional representation. An approval voting ballot allows voters to vote for all the candidates the voter supports and not be limited to the number of seats being filled. In the first round every vote on every ballot has its full value of 1. The candidate receiving the most votes wins the 1st seat. In the second round, ballots which do not contain a vote for the 1st-round winner still have their full value of 1, but ballots which have a vote for the 1st-round winner now have their other votes weighted at a value of $\frac{1}{2}$. The 2nd-round votes are tallied, and the candidate with the most votes wins the 2nd seat. For the 3rd round, votes on ballots may have 3 different values: original value of 1 if no selected candidates on the ballot have been elected, a value of $\frac{1}{2}$ if 1 selected candidate on the ballot was elected, and a value of $\frac{1}{3}$ if 2 selected candidates on the ballot were elected.

PAV: proportional approval voting – a multi-winner form of approval voting which considers every possible combination of winners and chooses the combination which maximizes the voices of the most voters, resulting in proportional representation. An approval voting ballot allows voters to vote for all the candidates the voter supports and not be limited to the number of seats being filled. With candidates A, B, C, D, and E vying for 2 seats, the 10 possible winning combinations would be AB, AC, AD, AE, BC, BD, BE, CD, CE, and DE. For each possible combination of winners, PAV scores each ballot based on the number of winners selected. The candidates in the combination with the largest score total would be declared winners. To see a sample election and how scores are assigned to ballots, click on the [Wikipedia entry for PAV](#).

People and Organizations

EA: election administrators

EO: elected officials

SoS: Secretary of State – The Secretary of State’s duties include overseeing elections in the state, writing election regulations, and certifying voting machines and software. The Secretary of State is elected in most states.

EC: Electoral College – **The 538 people who meet in their respective states the first Monday after the second Wednesday in December to cast official votes for US president.** Each presidential candidate has a slate of presidential electors in each state where the candidate appears on the ballot, but only the electors of the winning candidate are eligible to cast votes in the Electoral College. The number of presidential electors for each state is equal to the number of US Senators (2) plus the number of members of the US House of Representatives (varies by state). Maine and Nebraska award 2 of their EC votes to the statewide winner and each remaining EC vote to the winner of each state’s congressional district.

LAC: Legislative Action Committee – **The trained lobbyists of LWV of Colorado who work to influence the Colorado General Assembly on selected bills, based on League positions and values.** The General Assembly runs from January to May in normal years. LWV of Colorado has one paid lobbyist.

EAC: Election Assistance Commission – **an agency of the US government created by the Help America Vote Act (HAVA) of 2002 to develop guidelines to meet HAVA requirements, to adopt and maintain Voluntary Voting System Guidelines (VVSG), and to set up a national program for the testing, certification and decertification of voting systems.** Former Colorado Secretary of State Donetta Davidson served on the Election Assistance Commission, including twice as chairperson. The Election Assistance Commission was without a quorum (minimum number of members needed to conduct official business) from 2010 to 2014.

FEC: Federal Election Commission – **a regulatory agency whose purpose is to enforce campaign finance law.** From most of the time from August 2019 to December 2020, the commission lacked the four members out of six needed to conduct business. The commission was unable to vote to open new investigations or vote on whether laws had been broken. Typically, the US president nominates and the US senate confirms commission members in pairs: one Democrat and one Republican.

NIST: National Institute of Standards and Technology – **a physical sciences laboratory and non-regulatory agency of the US Department of Commerce. NIST works in conjunction with the Election Assistance Commission to develop the Voluntary Voting Systems Guidelines (VVSG).** NIST is headquartered in Gaithersburg, MD. Its facility in Boulder, CO maintains the nation’s official civilian clock. NIST was formerly called the National Bureau of Standards (NBS).

MGGG: Metric Geometry and Gerrymandering Group – a nonpartisan research group studying applications of geometry and computing to US redistricting. Professor Moon Duchin of Tufts University leads MGGG. The group, including LWVBC member Jeanne Clelland, filed an amicus brief (a supplemental legal argument) in the *Rucho v Common Cause* US Supreme Court case (<https://mggg.org/amicus>) and analyzed different electoral options including single transferable vote (STV) in Lowell, MA, in 2019.

CfER: Californians for Electoral Reform – a nonpartisan coalition of Californians that has been working for proportional representation for more than 2 decades. CfER works with FairVote and focuses primarily on single transferable vote. Each year CfER gives out the Wilma Rule Award to the person or persons who have done the most to advance the cause of proportional representation in California in the previous year.

CES: Center for Election Science – a nonpartisan, nonprofit organization that studies and advances better voting methods, particularly approval voting. LWVBC Voting Methods Team member Neal McBurnett was formerly on the Center for Election Science board.

Legislation and Guidelines

C.R.S.: Colorado Revised Statutes – laws passed by the Colorado legislature or by citizens via a referendum or initiative. Example: The two forms of a “ranked voting method” allowed by statute are described in 1-7-1003 C.R.S.

H.R.: House Resolution – a bill originating in the House of Representatives. In the 116th Congress (2019-2020) H.R. 4000 was also called the Fair Representation Act.

FRA: Fair Representation Act – a bill introduced in Congress to create multi-member congressional districts and to use single transferable vote (STV) to elect those members. Up to 5 members of Congress would be elected from larger congressional districts in order to achieve proportional representation (PR). States with only one member of the US House of Representatives would elect that member using instant-runoff voting (IRV). The Fair Representation Act has been introduced in multiple congressional sessions.

HAVA: Help America Vote Act – a 2002 federal law creating the Election Assistance Commission (EAC) and establishing minimum election administration standards, including accessibility for disabled people and election materials in multiple languages. The impetus for the Help America Vote Act was the controversial and close 2000 US presidential election, in which almost two million ballots were disqualified when they were run through vote-counting machines.

UOCAVA: Uniformed and Overseas Citizens Absentee Voting Act – a 1986 law designed to assist uniformed (including military) and overseas voters. UOCAVA ballots are distributed earlier than standard Colorado mail ballots.

VRA: Voting Rights Act of 1965 – a landmark piece of federal legislation to prohibit racial discrimination in voting. The VRA’s Section 5 required certain jurisdictions with a discriminatory past to get preclearance from the US Attorney General or the US District Court of DC before implementing any changes that affect voting, but the Supreme Court’s *Shelby County v Holder* (2013) decision rendered Section 5 unenforceable. Jurisdictions with multi-winner plurality elections have been sued under the Voting Rights Act.

VVSG: Voluntary Voting System Guidelines – a document created by the Election Assistance Commission (EAC) in compliance with the Help America Vote Act (HAVA). The Voluntary Voting System Guidelines provide a set of specifications and requirements for testing the functionality, accessibility and security capabilities of voting systems. In 2020 the LWVBC Voting Methods Team submitted comments on the draft VVSG version 2.0.

NPVC: National Popular Vote Compact – an agreement among a group of states and the District of Columbia to award all their electoral votes to whichever presidential candidate wins the overall popular vote in the 50 states and the District of Columbia. Also known as the National Popular Vote Interstate Compact (NPVIC). Colorado officially joined the National Popular Vote Compact in 2020 when voters passed Prop 113, reaffirming the CO General Assembly’s vote in 2019 to join the NPVC. The NPVC takes effect once states and DC with a majority – currently 270 – of electoral votes join the compact.

Other Election Abbreviations

RLA: risk-limiting audit – a process of checking election results that compares a statistical sample of paper ballots against the machine record to detect tallying errors. The size of the sample depends on the number of ballots and the margin of victory. Finding errors leads to corrective measures and the checking of larger samples. A risk-limiting audit assures that the election outcome is correct subject to the risk-limit. For example, if the risk-limit is 9%, the audit will ensure that any erroneous winners as reported in the initial results will be detected in at least 91% of the cases.

CVR: cast vote record – a record of all the votes produced by a single voter whether in electronic, paper or some other form. Some cast vote records are made available to independent auditors or analysts, but others are not, especially when only a small number of people vote a unique ballot style. Risk-limiting audits compare individual paper ballots to the machine record of the ballots.

ENR: Election Night Reporting – the system used by the Colorado Secretary of State and the counties to aggregate and report election results that are on the ballot in more than one county

SCORE: Statewide Colorado Registration and Election – a centralized database of voters and their districts to help election officials administer efficient, fair and impartial elections, provide an

audit capability to ensure integrity of the electoral process, and protect the voter information of all registered citizens.

VSTL: Voting System Testing Laboratories – independent, non-federal laboratories qualified by the Election Assistance Commission (EAC) to test election hardware and software to federal standards. In early 2021 accredited labs were located in Huntsville, AL and Wheat Ridge, CO. <https://www.eac.gov/voting-equipment/accredited-laboratories>

PVI: Partisan Voting Index - a measure of a congressional district's or state's lean toward Democratic or Republican candidates, based on the votes in the 2 previous presidential elections. A PVI of R+13 indicates that the district's vote for the Republican candidates averaged 13 percentage points higher than the nation's average. The Cook Political Report began using the index in 1997. A state with congressional districts having wildly divergent PVIs is a possible indication of gerrymandering. In 2020 fewer than 75 congressional seats were considered swing districts, defined as a PVI between D+5 and R+5.