

Voting Method & Tabulation Universe		George Gilbert, Chris Hughes, Herb Deutsch, Lauren Lochridge			
Object (Thing)	The Object/Thing sheet lays out a variety of tangible, real-world objects used in elections (such as ballot scanners) and concepts or classifications necessary to run elections or count ballots (such as ballot selections - how a voter marked a ballot). It defines those Objects/Things and describes their operation in the elections context.				
Process	The Process sheet identifies and defines the various tasks required to run elections. Processes are a combination of Inputs, Rules and Object/Things that produce Outputs in elections.				
Rules	The Rules sheet identifies and defines all rules necessary for processing voting methods through voting systems. Each row represents a single rule that defines how a given decision that may need to be made in processing an election may be made.				
Entity					
Constraint					
Assertion					
Input					
Output					

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Voting Method & Tabulation Universe										
Process	Label	Description	Accountable	Responsible	Process Associations	Object/Thing Assoc	Artifact(s)	Method(s)	Module(s)	NIST/TGDC/Standard/Spec
Vote										
Input										
Output										
Election										
Contest										
Voting Method										
Tabulation										
Tabulate										
Tabulation Programming										
Re-Tabulation	Re-Tabulation	Any subsequent tabulation for any	Jurisdiction	Elections Adminis	Recount, RCV	CVR, VoteSelectionDataset	Amended/Update EN	All		ENR, CVR, Other?
Rounds	Rounds	votes to be tabulated in rounds		Elections Adminis	RCV	CVR, VoteSelectionDataset	DigitalSignature	RCV		CVR
Round	Round	an instance of tabulating in rounds		Elections Adminis	RCV	CVR, VoteSelectionDataset		RCV		CVR, ENR, ?
Determine Threshold	Determine Threshold	Establishes number of votes required for election		Elections Adminis	RCV	Results report	Results report	RCV		ENR
Determine if Elected	Determine if Elected	determine if candidate meets threshold of election		Elections Adminis	RCV	Results report	Results report	RCV		ENR
Elimination of candidate	Elimination of candidate	Candidate is defeated	Jurisdiction	Elections Adminis	Rounds	Results report	Results report	RCV		ENR
Subsequent round tabul	Subsequent round tabul	an instance of tabulating in rounds (May correspond		Elections Adminis	RCV	CVR, VoteSelectionDataset		RCV		CVR, ENR, ?
Determine Continuing/E	Determine Continuing/E	Determine if a ballot shall count in a round				CVR, VoteSelectionDataset		RCV		
Stage CVRs	Stage CVRs	identify the CVR as needing assignment to a candidate		Identify the set of CVRS to be considere		CVR, VoteSelectionDataset		RCV		
Resolve ties	Resolve ties	Determine advancing and defeated candidate(s) in event of tie						RCV		ENR
Resolve Overvotes	Resolve Overvotes	Determine vote status in event two or more candidates being given same ranking								
Resolve Repeat Ranking	Resolve Duplicate Votes	Determine vote status in event candidate is given more than one ranking								
Resolve Skipped Rankin	Resolve Skipped Rankin	Determine vote status in event intermediate rankings are skipped								
Redistribution of Surplus	Redistribution of Surplus	Redistribute Surplus votes								
Print Results Report	Print Results Report	Print Results Report pursuant to law								
Tally										
Intermediate										
Verification										
Configuration										
Encryption										
CandidateContest										
MeasureContest										
PartyContest										
Recount										

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		"RCW 29A.04.139 Recount." "Recount" means the process of r	WA State http: //app.leg.wa. gov/RCW/default .aspx?cite=29A. 04.139							

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Category	Label	Plain Language	Rules	Jurisdiction	Link to Authoritative Source Document(s)	NIST/TGDC/Standard/Spec	Misc. Note
Example Rule:							
Counting	Overvote	If a ballot is marked in each of two or more target areas or sensitive areas for a candidate whose name appears on the ballot more than once for the same office, and the total number of votes cast for such race for different candidates does not exceed the number for which he or she is lawfully entitled to vote, only the first vote for such candidate with multiple markings shall be counted for such candidate.	NY Rules and Regulations § 6210.13(7) If a ballot is marked in each of two or more target areas or sensitive areas for a candidate whose name appears on the ballot more than once for the same office, and the total number of votes cast for such race for different candidates does not exceed the number for which he or she is lawfully entitled to vote, only the first vote for such candidate with multiple markings shall be counted for such candidate.	NY Rules and Regulations § 6210.13(7) Standards for determining valid votes	https://govt.westlaw.com/nycrr/Document/I4fa94c82cd1711dda432a117e6e073452?viewType=FullText&originationContext=document#oc&transitionType=CategoryPageItem&contextData=(sc.Default)		
Vote							
Input							
Vote Selection Data Set	CastVoteRecord	A vote selection data set representing from 1 to n ballots is required as a prerequisite to Tabulation			The process named Tally Ballots incloses the creation of the CVR vote selection data set and tabulation of the CVRs.		
Vote Selection Data Set	CastVoteRecordReport (CVRR)	A summarization of one or more CastVoteRecords or an aggregation of CastVoteRecords in the form of CastVoteRecordReports, in the CVR CDF may satisfy the CastVoteRecord Input requirement			Process 3.1.3 Tally Tally the ballot selections in order to report election results	Cast Vote Record Spec. at NIST Voting Twiki	
Vote Selection Data Set	CastVoteRecord (CVR)	A vote selection data set represented in the CVR CDF satisfies the CastVoteRecord Input requirement.					
Configuration	Configuration	A Configuration is required as a prerequisite to Tabulation			Election Process Model PO1.3.D1	Elections Process Model	
Configuration	SampleBallotSet	A sample ballot set is required as a prerequisite to validation of configuration	Configuration Management (and Logic & Accuracy Testing) sample ballot deck is required				Elections Process Model
Output							
Reports	Reports	A summarization of one or more CastVoteRecords or an aggregation of CastVoteRecords in the form of CastVoteRecordReports, in the CVR CDF may satisfy the CastVoteRecord Output requirement			1500-103, Draft VVSG2.0		
Reports	CastVoteRecord	A vote selection data set represented in the CVR CDF satisfies the CastVoteRecord Output requirement.					
Reports	Election Results Report	1500-107 Requires any adopted to implement 1500-100 V2, and at time of writing draft VVSG2.0 is expected to require implementation of this CDF	When a voting method or tabulation method implementation implements election reporting, then it must implement 1500-100 V2, in addition to any other reporting DFs		1500-100 V2, 1500-107		
Reports	Election Night Report				1500-100 V1		
Reports	Logging & Tracing Report				1500-101		

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Voting Methods and Tabulation Universe, a spreadsheet that contains our 'ground truth' for the rules of the universe							
Category	Label	Plain Language	Rules	Jurisdiction	Link to Authoritative Source Document(s)	NIST/TGDC/Standard/Spec	Misc. Note
Reports	Summary Report (RCV)	(a) The "summary report" for a race means a report that lists the candidate vote totals in each round, along with the cumulative numbers of undervotes, overvotes, and exhausted ballots in each round. (California Secratry of State Rules for Instant Runoff Voting in Charter Counties and Charter Cities)	<p>List candidate vote totals in each round, cumulative number of undervotes, overvotes and exhausted ballots in each round : [NEED TO GET MOST UP TO DATE! .PDF OF cvr SPEC IS OUT OF DATE! JD WILL SEND LINK TO MOST UP TO DATE VERSION]</p> <p>SummaryReport => [Forall CVRR.round [CVRR.summary] => [[SUM(CVRR.round.undervote)] AND [SUM(CVRR.round.Overvote)] AND [SUM(CVRR.round.exhausted)]]]</p> <p>e.g. informally written logic rule above says that for all rounds in a RCV CVRR, for CVRR.summary to be TRUE its implied that there must be a sum count of each of undervote, overvote and exhausted</p> <p>There are other / sub rules that will be implied by each of these rules, some require reference to the CVR CDF for a rule e.g. of this type.</p> <p>e.g. here is an example of a ballot accounting type of rule that applies to all instantiations for all voting or tabulation methods: The total sum of vote + overvote + undervote must be <= CVRCDF.ContestSelectionLink.TotalNumberVotes</p>	California Charter Cities using RCV	http://votingsystems.cdn.sos.ca.gov/oversight/directives/irv-guidelines.pdf		
Reports	Ballot Report	The "ballot report" for a race means a report that lists, for each ballot, the candidate or candidates indicated at each ranking, the precinct of the ballot, and whether the ballot was cast by mail. In the report, the ballots shall be listed in an order that does not permit the order in which they were cast in each precinct to be reconstructed. (California Secratry of State Rules for Instant Runoff Voting in Charter Counties and Charter Cities)	CVR meets requirement	California Charter Cities using RCV	http://votingsystems.cdn.sos.ca.gov/oversight/directives/irv-guidelines.pdf		
Reports	RCV Contest tabulation reports	The ranked-choice voting tabulation center must print a summary statement, which must include the following information: total votes cast; number of undervotes; number of totally defective and spoiled ballots; threshold calculation; total first choice rankings for all candidates; round-by-round tabulation results, including simultaneous batch eliminations, surplus transfers, and defeated candidate transfers; and exhausted ballots at each round. Minneapolis Charter ch.167.80(b)	NIST Cast Vote Record Report (CVRR) in the CVR CDF and NIST Election Results 1500-100 reports can satisfy these requirements. When the CVR.VotingVariation field is set to a VM.RCV variant then a "snapshot" of state of each round of tabulation must be stored in ordered sequence. In the current draft version of the CVR CDF, some use of "Other" fields of classes or enumerations, and also the "Annotations" element may be used to store additional variant specific information elements that are specific to Ranked Order voting methods variants.	City of Minneapolis	https://drive.google.com/open?id=0B6Xsbk1wDKQoWV82dENyTnQ5Xzg		

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Category	Label	Plain Language	Rules	Jurisdiction	Link to Authoritative Source Document(s)	NIST/TGDC/Standard/Spec	Misc. Note
Reports	RCV Election Abstract	The election abstract must include the information required in the ranked-choice voting tabulation center summary statement, with the addition of the number of registered voters by precinct, the number of same day voter registrations, and the number of absentee voters. Minneapolis Charter ch.167.80(c)	Official results report must contain information required in the RCV Contest Tabulation Reports with the addition of the number of registered voters by precinct, the number of same day voter registrations, and the number of absentee voters.	City of Minneapolis	https://drive.google.com/open?id=0B6Xsbk1wDKOoWV82dENvTnQ5Xzg		
Reports	Comprehensive Summary Report	(c) The "comprehensive report" for a race means a report that provides the information contained in the summary report by precinct. The report shall list, for each round, the number of ballots cast in each precinct that count as votes for each candidate in that round, that have been declared overvotes up to that point, that have been declared undervotes up to that point, and that have been declared exhausted up to that point. (California Secratry of State Rules for Instant Runoff Voting in Charter Counties and Charter Cities)	Contains Summary Report information by precinct	California Charter Cities using RCV	http://votingsystems.cdn.sos.ca.gov/oversight/directives/irv-guidelines.pdf		
Reports	Summary Results Report	A summary of election tabulation information, including data on ballot errors and write-in votes	A summary results report, showing overvotes, undervotes, blank-voted contests, and all valid votes including write-in votes	Colorado; Auditing States	8 CFR 1505-1 R25.2.2(d)(1)		
Reports	Results File Export	The results of an election	A results file export suitable for uploading to the Secretary of State's election night reporting system;	Colorado; Auditing States	8 CFR 1505-1 R25.2.2(d)(2)		
Reports	CVR Export	The set of all digital records of ballots captured by a voting system in the course of an election	A CVR export.	Colorado; Auditing States	8 CFR 1505-1 R25.2.2(d)(3)		
Reports	VVPAT (DRE systems)	Voter verified paper audit trail, or the paper record produced by a direct recording electronic unit voting system.	The director shall provide for a paper record of each electronically generated ballot that can be: 1) reviewed and corrected by the voter at the time the vote is cast; and 2) used for a recount of the votes cast at an election in which electronically generated ballots were used	Alaska; states using DRE	AK Stat. 15.15.032 (c)		
Reports	Precinct-level election results reports	Results of an election with totals for each contest option broken out in to the votes they received in each precinct.	(c) If the election is: (1) A primary election held in an even-numbered year; or (2) A general election, the total votes, other than absentee votes and votes in a mailing precinct, must be accumulated by precinct.	Nevada, all other states?	NRS 293B.130(1)(c)		
Reports	Results Tape	Paper printed out by a voting system displaying the vote totals for each contest option in every race included on ballots cast on that voting system.	(1) Ensure that each mechanical recording device: (l) Provides a record printed on paper of the total number of votes recorded on the device for each candidate and for or against each measure;	Nevada, other states?	NRS 293B.330(1)(b)(1)		
Reports	Ballot reconciliation report for Precinct Tabulator	The total number of ballots cast using a voting system, typically included on a results tape.	used to reconcile number of ballots counted on each precinct tabulator with number of ballots from poll book ballot reconciliation report. Must be signed by no less than two precinct election judges.	Montana, other states?	MT. SoS Ballot Reconciliation Process and Checklist		
VOTING METHOD RULES		VOTING METHOD DECISION RULES & DECISION RULE SETS					
PLURALITY RULES							

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Determine if elected, plurality, candidates AKA : first-past-the-post (FPTP), single-choice voting, simple plurality	Elected	Single -winner: The candidate with the most votes, after all votes are counted, is elected. Multi-winner: The candidates, equal to the number of seats to be filled, with the most votes, after all votes are counted, are elected	Elected: one selection for a candidate is allowed. The decision rule can be executed to determine elected when all votes have been counted. The decision rules are: Single-winner: The candidate with the largest sum total of votes, compared to all candidates, is elected. Multi-winner: The candidates, equal to the number of seats to be filled, with the largest sum of total votes, are elected	NCGS§ 163-292	https://www.ncleg.gov/enactedlegislation/statutes/pdf/bysection/chapter_163/gs_163-292.pdf		
Determine if passed, plurality, ballot measures	Passed	For a ballot measure with Yes or No, For or Against selection options, the option with the most votes, after all ballots are counted, shall prevail.	Passed: one selection of Yes (Y) or No (N) is allowed. The decision rule can be executed to determine passed when all votes have been counted. The decision rule is: If sum (Y) > sum (N) then passed -> TRUE If sum (Y) < sum (N) then passed -> FALSE	NCGS§ 163-182.15(d)	https://www.ncleg.gov/enactedlegislation/statutes/pdf/bysection/chapter_163/gs_163-182.15.pdf		
Determine if tied, plurality candidates	Tied (candidate contest)	If there are an equal number of votes for the candidates with the highest number of votes, the contest shall be tied.	The decision rule is: If sum(Y) = sum(N) then tied-> TRUE	Code of Virginia § 24.2-674	https://law.lis.virginia.gov/vacode/title24.2/chapter6/section24.2-674/		
Determine if tied	Tied (ballot measure)	For a ballot measure with Yes or No, For or Against selection options, If there are an equal number of votes for the selection options, the contest shall be tied and not passed	The decision rule is: If [sum(Y) = sum(N)] then [tied -> TRUE] AND [passed -> FALSE].				
Determine if elected, majority	Elected, by "majority"	For single winner contests, the majority shall be ascertained by dividing the total votes cast for all candidates by two For multi-winner contests, the majority shall be ascertained by dividing the total vote cast for all candidates by the number of officers to be filled and by dividing the result by two. Any excess of the sum so ascertained shall be a majority and the candidates who obtain a majority shall be declared elected. If more candidates obtain a majority than there are offices to be filled, those having the highest vote (equal to the number of offices to be filled) shall be declared elected.	Single-winner: If sum(Cn) > sum (C1.....Cnn)/2 then elected Multi-winner: If sum(Cn) > (sum (C1.....Cnn)/#seats)/2 then elected For the case of Multi-winner: If more candidates obtain a "majority" than there are seats to fill, those having the highest vote (equal to the number of seats to be filled) are elected.	SECTION 5-15-62 SC Code of Laws	https://www.scstatehouse.gov/code/t05c015.php		
Determine if passed	Passed	Must	Passed: one selection of Yes (Y) or No (N) is allowed. The decision rule can be executed to determine passed when all votes have been counted. The decision rule is: If [sum (Y) > sum (N)] AND [sum(Y) => majorityThreshold] then passed.				
Determine if tied	Tied (candidate contest)	If there are an equal number of votes for the candidates with the highest number of votes, the contest shall be tied.	The decision rule is: If sum(Y) = sum(N) then tied.				
Determine if tied	Tied (ballot measure)	For a ballot measure with Yes or No, For or Against selection options, If there are an equal number of votes for the selection options, the contest shall be tied and not passed	The decision rule is: If [sum(Y) = sum(N)] then [tied -> TRUE] AND [passed -> FALSE].				
TABULATION RULES			TABULATION RULES				

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Category	Label	Plain Language	Rules	Jurisdiction	Link to Authoritative Source Document(s)	NIST/TGDC/Standard/Spec	Misc. Note
AUDIT RULES							
	Auditability	"auditing of ballot cards at multiple points in the tabulation process" MUST	logic model includes generic feature 'suspension' in tabulation module should be sufficient	City & County of San Francisco			
	?Reporting?			?CO?			
	other			CO			
MULTI-ROUND TABULATION VARIANTS							
RCV RULES							
Rounds	Rounds	<i>Ranked choice voting means a method that allows voters to rank candidates for office in order of preference. Elections conducted by ranked choice voting may be used for both single-winner and multiple-winner elections. Elections conducted by ranked choice voting are tabulated in rounds, as specified in the counting rules. MUST (CA. SB 1288)</i>	<i>tabulated in rounds : If VotingMethod = RCV then TabulationModule=Rounds designator based on taxonomy...</i>	CA, SB 1288, Berkeley Code ch. 2, § 2.14.010(A), Oakland Charter, art. XI, § 1105(a), Minneapolis Charter, ch. 167.20, Maine Rev. Statutes, 21-A M.R.S.A. § 1(35-A), St. Paul Ordinances, tit. 5, § 31.02, San Leandro Code, tit. 1, § 1-11-300, 54A Mass. Gen. Laws § 1	CA SB 1288: http://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB1288 ; Berkeley: https://drive.google.com/open?id=0B6Xsbk1wDKOodlhVUnBMbXFUVEU ; Oakland: https://drive.google.com/open?id=0B6Xsbk1wDKOoeVp2S1NUS3V0Sm8 ; Minneapolis: https://drive.google.com/open?id=0B6Xsbk1wDKOoZ2NYTHFNSzFCSE ; E; Maine: http://legislature.maine.gov/statutes/21-A/title21-Asec1.html ; St. Paul: https://drive.google.com/open?id=0B6Xsbk1wDKOoNmNzWDVRtkdnQVk ; San Leandro: https://drive.google.com/open?id=0B6Xsbk1wDKOoT2ttM011T3FQM0U ; Massachusetts: https://drive.google.com/open?id=0B6Xsbk1wDKOodHY2czEwRGE2ZjA		
Rounds	Rounds.X	A set of election methods which allow each voter to rank contest options in order of the voter's preference, in which votes are counted in rounds using a series of runoff tabulations to defeat contest options with the fewest votes, and which elects a winner with a majority of final round votes in a single-winner contest and provides proportional representation in multi-winner contests. MUST	<i>tabulated in rounds. example : If VotingMethod = RCV then TabulationModule=Rounds designator based on taxonomy...</i>	NIST Glossary			
Rounds	Round	"Round of counting" or "round" means a step in the counting process during which votes for all continuing candidates are tabulated for the purpose of determining whether a candidate has achieved a majority of the votes cast for a particular office, and, absent a majority, which candidate or candidates must be eliminated MUST (Berkeley Code ch. 2, § 2.14.010(H))	<i>sum of votes for continuing candidate. Summation based on counting rules</i>	Berkeley Code ch. 2, § 2.14.010(H), Minneapolis Charter ch. 167.20, Maine Rev. Statutes, 21-A M.R.S.A. § 723-A(1)(J), St Paul Ordinances, tit. 5, § 31.02, San Leandro Code, tit. 1, § 1-11-300; HR 3057 §§ 331(b)(1)-(2), 332(b)(1)-(3), Santa Fe Code 9-1.15(B)(11)	Berkeley: https://drive.google.com/open?id=0B6Xsbk1wDKOoem8yLXAXum1Hd0k ; Minneapolis: https://drive.google.com/open?id=0B6Xsbk1wDKOoZ2NYTHFNSzFCSE ; E; Maine: http://legislature.maine.gov/statutes/21-A/title21-Asec723-A.html ; St. Paul: https://drive.google.com/open?id=0B6Xsbk1wDKOoNmNzWDVRtkdnQVk ; San Leandro: https://drive.google.com/open?id=0B6Xsbk1wDKOoT2ttM011T3FQM0U ; HR 3057: https://www.congress.gov/bills/115th-congress/house-bill/3057/text		
Round	1st Round Alt A	each ballot shall be counted for the highest-ranked continuing candidate on that ballot, using a transfer value of one vote. MUST (SB 1288, 22101(a)(1)), (Applies to single winner (IRV) and multi-winner (STV) contests)	<i>the sum of the votes for the highest ranked candidate on each ballot</i>	CA SB 1288, 22101(a)(1), Maine Rev. Statutes, 21-A M.R.S.A. § 723-A(2), Takoma Park Charter, art. VI, § 606(d),	CA SB 1288: http://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB1288 ; Maine: http://legislature.maine.gov/statutes/21-A/title21-Asec723-A.html ; Takoma Park: https://drive.google.com/open?id=0B6Xsbk1wDKOoWU1BRKZYmZpXzA		

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Category	Label	Plain Language	Rules	Jurisdiction	Link to Authoritative Source Document(s)	NIST/TGDC/Standard/Spec	Misc. Note
Round	1st Round Alt B	every ballot shall count as a vote towards the first choice candidate. MUST (Berkeley Code, tit. 2, 2.14.040(A)), (Applies to single winner (IRV) and multi-winner (STV) contests)	the sum of the number one (1) ranked votes on each ballot	Berkeley Code, tit. 2, 2.14.040 (A), Oakland Charter, art. 11, § 1105(d)(1), St Paul Ordinances, v tit. 5, § 31.05 (a), San Leandro Code, tit. 1 § 1-11-320(a), Minneapolis Charter, tit. 8.5, ch. 167.60(b), 167.70(b), c. 54, §9a,b Mass Gen Laws & http://www.cambridgema.gov/election/~link.aspx?id=D58142E0FBC64BEDB4B0F92D957FD453&z=z, NCGS163-329(b1)(2), Santa Fe Code 9-1.15(E)(1)	Berkeley: https://drive.google.com/open?id=0B6Xsbk1wDKOoWU1BRkZYmZpXzA ; Oakland: https://drive.google.com/open?id=0B6Xsbk1wDKOoeVp2S1NUS3V0Sm8 ; Minneapolis: https://drive.google.com/open?id=0B6Xsbk1wDKOoZ2NYTHFNSzFCSE ; San Leandro: https://drive.google.com/open?id=0B6Xsbk1wDKOoT2ttM011T3FQM0U ; Massachusetts: https://drive.google.com/open?id=0B6Xsbk1wDKOodHY2czEwRGE2ZjA		
Print Results Report	Summary Statement	The ranked-choice voting tabulation center must print a summary statement, which must include the following information: total votes cast; number of undervotes; number of totally defective and spoiled ballots; threshold calculation; total first choice rankings for all candidates; round-by-round tabulation results, including simultaneous batch eliminations, surplus transfers, and defeated candidate transfers; and exhausted ballots at each round. MUST (Minneapolis Charter tit. 8.5, ch. 167.80(b))	Report content is configurable. Must be printed at the end of each round of tabulation	(Minneapolis Charter tit. 8.5, ch. 167.80(b), SB 1288, 22101(b), c. 54, §9 (m)Mass Gen Laws (List incomplete)	Minneapolis: https://drive.google.com/open?id=0B6Xsbk1wDKOoZ2NYTHFNSzFCSE ; Massachusetts: https://drive.google.com/open?id=0B6Xsbk1wDKOodHY2czEwRGE2ZjA		
Determine Threshold	Maximum possible Threshold	1st Round: Maximum Possible Threshold = ((Total ballots cast that include votes, undervotes, skipped rankings, or overvotes for the office)/(Seats to be elected + 1)) + 1, with any fractions disregarded. MUST (Minneapolis Charter, tit. 85, ch. 167.20)	= ((Total ballots cast that include votes, undervotes, skipped rankings, or overvotes for the office)/(Seats to be elected + 1)) + 1, with any fractions disregarded, (Applies to single winner (IRV) and multi-winner (STV) contests)	Minneapolis Charter, tit. 85, ch. 167.20	Minneapolis: https://drive.google.com/open?id=0B6Xsbk1wDKOoZ2NYTHFNSzFCSE		
Determine Threshold	Threshold (Based on 1st round votes)	Subsequent Rounds: Threshold = ((Total votes counted in 1st Round)/(Seats to be elected + 1)) + 1, with any fractions disregarded. MUST (Minneapolis Charter, tit. 85, ch. 167.20)	Threshold = ((Total votes counted in 1st Round)/(Seats to be elected + 1)) + 1, with any fractions disregarded, (Applies to single winner (IRV) and multi-winner (STV) contests)	Minneapolis Charter, tit. 85, ch. 167.20, Cambridge	Minneapolis: https://drive.google.com/open?id=0B6Xsbk1wDKOoZ2NYTHFNSzFCSE ; St. Paul: https://drive.google.com/open?id=0B6Xsbk1wDKOoNmNzWDVVRTkdQVk ; Massachusetts: https://drive.google.com/open?id=0B6Xsbk1wDKOodHY2czEwRGE2ZjA ; HR 3057: https://www.congress.gov/bills/115th-congress/house-bill/3057/text		
Determine Threshold	Threshold (Multi-winner)	the number of votes sufficient for a candidate to be elected in a multi-seat contest. The election threshold is calculated by dividing the total number of votes line counting for continuing candidate in the first round by the sum of one plus the number of seats to be filled, or $X/(Y+1)$, in which "X" is the total number of votes counting for continuing candidates in the first round and "Y" is the number of seats to be filled, rounding line up to four decimal places.	Threshold = ((Total votes counted in the Round)/(Seats to be elected + 1)), round up to 4 decimal places)	California SB 212 24002(c) 2019	California: http://leginfo.ca.gov/faces/billTextClient.xhtml?bill_id=20190200SB212&search_keywords=Ranked+choice+voting		

DRAFT: Voting Method & Tabulation Universe, V1.0		L. Lochridge - Editor and Working Group Chair, George Gilbert, Chris Hughes - Editor & Legislation Expert, Herb Deutsch, Celeste Landry		STATUS: DRAFT - Work In Progress Voting Methods and Tabulation Universe, a spreadsheet that contains our 'ground truth' for the rules of the election process		
Category	Label	Plain Language	Rules	Jurisdiction	Link to Authoritative Source Document(s)	NIST/TGDC/Standard/Spec Misc. Note
Determine Threshold	Threshold (Based on votes in the current round) (single-winner)	a majority of votes from the continuing ballots MUST (San Francisco Charter, art. 13, § 13.102(d)) MUST	Threshold = ((Total votes counted in the Round)/(Seats to be elected + 1)) + 1, with any fractions disregarded	Berkeley Code, tit. 2, 2.14.040 (B), Oakland Charter, art. 11, §1105(d)(2), Maine Rev. Statutes, 21-A M.R.S.A. § 723-A(2)(A), San Francisco Charter, art. 13, § 13.102(d), Portland Charter, art. II, § 3(c), San Leandro Code, tit. 1, § 1-11-320(b), Takoma Park Charter, § 606(e), HR 3057 § 331(a)(2)(A), Santa Fe Code 9-1.15(B)(7)	Berkeley: https://drive.google.com/open?id=0B6Xsbk1wDKOodlhVUnBMbXFUVEU ; Oakland: https://drive.google.com/open?id=0B6Xsbk1wDKOoeVp2S1NUS3V0Sm8 ; Maine: http://legislature.maine.gov/statutes/21-A/title21-Asec723-A.html ; San Francisco: https://drive.google.com/open?id=0B6Xsbk1wDKOodUnSQUttNEZ6X2c ; Portland: https://drive.google.com/open?id=0B6Xsbk1wDKOoV0JUWEtsakFxmE0 ; San Leandro: https://drive.google.com/open?id=0B6Xsbk1wDKOoT2ttM011T3FQM0U ; Takoma Park: https://drive.google.com/open?id=0B6Xsbk1wDKOoWU1BRkZYMzZpXzA ; HR 3057: https://www.congress.gov/bills/115th-congress/house-bill/3057/text	
Determine if Elected	Elected	If a candidate, other than an undeclared write-in candidate*, has a vote total that is equal to or greater than the threshold, that candidate is declared elected and the tabulation is complete. MUST (Minneapolis Charter, 167.60(c)(1)(a)) *Minneapolis Charter only	Elected if sum(votes(candidate)) >= threshold	Minneapolis Charter, 167.60 (c)(1)(a), Berkeley Code, tit. 2, 2.14.040(B), Oakland Charter, art. 11, §1105(d)(2), Maine Rev. Statutes, 21-A M.R.S.A. § 723-A(2)(A), San Francisco Charter, art. 13, § 13.102(d), Portland Charter, art. II, § 3(c), San Leandro Code, tit. 1, § 1-11-320(b), Takoma Park Charter, § 606(e), CA SB 1288, 22101(a)(2), Santa Fe Code 9-1.15(E)(2)	Minneapolis: https://drive.google.com/open?id=0B6Xsbk1wDKOoZ2NYTHFNSzFCSkE ; Berkeley: https://drive.google.com/open?id=0B6Xsbk1wDKOodlhVUnBMbXFUVEU ; Oakland: https://drive.google.com/open?id=0B6Xsbk1wDKOoeVp2S1NUS3V0Sm8 ; Maine: http://legislature.maine.gov/statutes/21-A/title21-Asec723-A.html ; San Francisco: https://drive.google.com/open?id=0B6Xsbk1wDKOoNWhEeVJWS1NLSIU ; Portland: https://drive.google.com/open?id=0B6Xsbk1wDKOoV0JUWEtsakFxmE0 ; San Leandro: https://drive.google.com/open?id=0B6Xsbk1wDKOoT2ttM011T3FQM0U ; Takoma Park: https://drive.google.com/open?id=0B6Xsbk1wDKOoWU1BRkZYMzZpXzA ; HR 3057: https://www.congress.gov/bills/115th-congress/house-bill/3057/text	
Determine if Elected	Elected	(First ranked choice tabulation) If the vote total for a candidate, other than an undeclared or a declared write-in candidate, is equal to or greater than the maximum possible threshold, that candidate is declared elected and the tabulation is complete	Candidate marked first choice vote total => Maximum Possible Threshold	Minneapolis Charter, 167.60 (b), 167.70(b)	Minneapolis: https://drive.google.com/open?id=0B6Xsbk1wDKOoZ2NYTHFNSzFCSkE	
Determine if Elected (Top Two Advance)	Elected (1st round of Top Two Advance)	If the candidate with the greatest number of firstchoice votes receives more than fifty percent (50%) of the firstchoice votes, that candidate wins.	Elected if First choice votes > 50% of vote in first round	NCGS 163-329(b1)(2)	North Carolina: https://drive.google.com/open?id=0B6Xsbk1wDKOoMkdwyTJQSkxqTzQ	
Determine if Elected (Top Two Advance)	Elected (2nd round of Top Two Advance)	If no candidate receives that minimum number, the two candidates with the greatest number of firstchoice votes advance to a second round of counting. In this round, each ballot counts as a vote for whichever of the two final candidates is ranked highest by the voter. The candidate with the most votes in the second round wins the election.	2nd Round: Elected if Most votes for highest ranked of top two in 1st round	NCGS 163-329(b1)(2)	North Carolina: https://drive.google.com/open?id=0B6Xsbk1wDKOoMkdwyTJQSkxqTzQ	

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Category	Label	Plain Language	Rules	Jurisdiction	Link to Authoritative Source Document(s)	NIST/TGDC/Standard/Spec	Misc. Note
Multi winner RCV Contest	Determine if Elected (Step 1)	(c) In the first round, if the number of continuing candidates is less than or equal to the number of offices to be filled, all continuing candidates shall be designated as elected, and the tabulation is complete.	Elected if Continuing candidates <= seats to fill . Otherwise next round	CA SB 1288, 22101 (c),(d), (g)(1), c., Mass Gen Laws 54, §9 (c), Minneapolis Charter, tit. 8.5, ch. 167.70(b)	CA SB 1288: http://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB1288 ; Massachusetts: https://drive.google.com/open?id=0B6Xsbk1wDKOodHY2czEwRGE2ZjA ; Minneapolis: https://drive.google.com/open?id=0B6Xsbk1wDKOoZ2NYTHFNSzFCskE		
Multi winner RCV Contest	Determine if Elected (Step 2)	(d) Each continuing candidate with votes in excess of the threshold shall be designated as elected, and his or her votes in excess of the threshold calculated shall be treated as his or her surplus.	Elected if Votes for candidate >= threshold	CA SB 1288, 22101 (c),(d), (g)(1), c., Mass Gen Laws 54, §9 (c), Minneapolis Charter, tit. 8.5, ch. 167.70(b)	CA SB 1288: http://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB1288 ; Massachusetts: https://drive.google.com/open?id=0B6Xsbk1wDKOodHY2czEwRGE2ZjA ; Minneapolis: https://drive.google.com/open?id=0B6Xsbk1wDKOoZ2NYTHFNSzFCskE		
Multi winner RCV Contest	Determine if Elected (Step 3)	(g)(1)If the number of continuing candidates plus the number of candidates that have been designated as elected equals the number of offices to be filled, all continuing candidates shall be designated as elected and the tabulation is complete.	Elected if Continuing candidates = seats to fill	CA SB 1288, 22101 (c),(d), (g)(1), c., Mass Gen Laws 54, §9 (c), Minneapolis Charter, tit. 8.5, ch. 167.70(b)	CA SB 1288: http://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB1288 ; Massachusetts: https://drive.google.com/open?id=0B6Xsbk1wDKOodHY2czEwRGE2ZjA ; Minneapolis: https://drive.google.com/open?id=0B6Xsbk1wDKOoZ2NYTHFNSzFCskE		
Determine if Elected (Multi winner Contests with sequential tabulation)	Elected	If more than one seat is to be filled in the same race, the voter votes the same way as if one seat were to be filled. The round-by-round counting process is the same as when one seat is to be filled - candidates are eliminated and have their ballots transfer until someone emerges with a majority of votes in a round. This count is repeated for each seat to be filled, however. The first count results in the first winner. Then all ballots are reset to the start of the count, but with rankings for the first winner ignored. The round-by-round count repeats to identify a second winner. For each additional seat to be filled, an additional count is done without the names of the candidates who have already won.	Multiple counts using top two advance tabulation rules with successive winner's names removed after each count (NC). Multiple counts eliminating last place candidate until majority is achieved with successive winner's names removed after each count (Sarasota, FL, Utah)	NCGS 163-329(b1)(2), Article IX, Sec. 5, Sarasota City Charter; Utah Code 20A-4-603 (7)	Utah: https://le.utah.gov/xcode/Title20A/Chapter4/20A-4-S603.html ; Sarasota: https://drive.google.com/file/d/1xiFx0P6MAyyU6lRxON8StvgJV_EGEod6/view		sequential, multi-p
Determine if Elected (bottoms up tabulation)	Elected	If more than one seat is to be filled in the same race, the voter votes the same way as if one seat were to be filled. The counting is the same as when one seat is to be filled, instead filling multiple seats. Candidates are eliminated and ballots are transferred from eliminated candidates until there are as many candidates as seats to be filled.	Elected if # of candidates=seats to fill.	Utah Code 20A-4-603(9)			
Redistribution of Surplus (Multi winner Contests) (Weighted Inclusive Gregory Method-WIMG)	Determine surplus value	Surplus means the total number of votes cast for an elected candidate in excess of the threshold. (Minneapolis Charter, ch. 167.20)	Surplus Vote=Total votes for candidate - Threshold	CA SB 1288, 22101(f); Minneapolis Code tit. 8.5, ch. 167.70(c); http://vote.minneapolismn.gov/rcv/RCV-HISTORY ;	CA SB 1288: http://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB1288 ; (2016), Minneapolis: https://drive.google.com/open?id=0B6Xsbk1wDKOoZ2NYTHFNSzFCskE http://vote.minneapolismn.gov/rcv/RCV-HISTORY		

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STATUS: DRAFT - Work In Progress							
Voting Methods and Tabulation Universe, a spreadsheet that contains our 'ground truth' for the rules of the various voting methods							
Category	Label	Plain Language	Rules	Jurisdiction	Link to Authoritative Source Document(s)	NIST/TGDC/Standard/Spec	Misc. Note
Redistribution of Surplus (Multi winner Contests) (Weighted Inclusive Gregory Method-WIMG)	Determine surplus factor	(f) For each candidate that is designated as elected and has a surplus, the surplus of that candidate shall be transferred as follows: (1) The surplus factor for the candidate shall be calculated as the quotient, rounded down to four decimal places, of the candidate's surplus divided by the total number of votes for the candidate.	Surplus Factor=Surplus Vote/Total votes for candidate	CA SB 1288, 22101(f); Minneapolis Code tit. 8.5, ch. 167.70(c); http://vote.minneapolismn.gov/rcv/RCV-HISTORY ;	CA SB 1288: http://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB1288 ,"CA SB 1288; (2016), Minneapolis: https://drive.google.com/open?id=0B6Xsbk1wDKOoZ2NYTHFNSzFCskE http://vote.minneapolismn.gov/rcv/RCV-HISTORY		
Redistribution of Surplus (Multi winner Contests) (Weighted Inclusive Gregory Method-WIMG)	Determine New Transfer Value	(2) Each ballot counted for the candidate shall be transferred to, and counted for, the highest-ranked continuing candidate on that ballot using a new transfer value, calculated as the product, rounded down to four decimal places, of the old transfer value times the candidate's surplus factor. (4) After the candidate's surplus is transferred and his or her residual surplus is calculated, the candidate does not have a surplus, and the candidate's vote total for the remainder of the tabulation shall be equal to the threshold. (SB 1288, 22101(f))	New Transfer Value=Current value of vote x Surplus Factor	CA SB 1288 (2017), CA SB 212 (2019), 22101(f); Minneapolis Code tit. 8.5, ch. 167.70(c); http://vote.minneapolismn.gov/rcv/RCV-HISTORY ;	CA SB 1288: http://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB1288 ,"CA SB 1288; (2016), Minneapolis: https://drive.google.com/open?id=0B6Xsbk1wDKOoZ2NYTHFNSzFCskE http://vote.minneapolismn.gov/rcv/RCV-HISTORY		
Redistribution of Surplus (Multi winner Contests) (Weighted Inclusive Gregory Method-WIMG)	Residual Surplus	(3) "Residual surplus" means the number of surplus votes not transferred pursuant to paragraphs (1) and (2) due to rounding. The residual surplus for the transfer equals the surplus for the candidate minus the sum of the new transfer values for every ballot transferred from the candidate. The residual surplus shall not be counted for any candidate nor as part of other exhausted votes.	Residual surplus = Surplus for candidate - sum of the new transfer values for every ballot transferred from candidate				
Redistribution of Surplus (Multi winner Contests) (Weighted Inclusive Gregory Method-WIMG)	Transfer New Transfer value to next highest ranked continuing candidate	(2) Each ballot counted for the candidate shall be transferred to, and counted for, the highest-ranked continuing candidate on that ballot using a new transfer value, calculated as the product, rounded down to five decimal places, of the old transfer value times the candidate's surplus factor. (4) After the candidate's surplus is transferred and his or her residual surplus is calculated, the candidate does not have a surplus, and the candidate's vote total for the remainder of the tabulation shall be equal to the threshold. (SB 1288, 22101(f))	For each candidate with a surplus, transfer to next highest ranked continuing candidate the new transfer value of each vote				

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Category	Label	Plain Language	Rules	Jurisdiction	Link to Authoritative Source Document(s)	NIST/TGDC/Standard/Spec	Misc. Note
Redistribution of Surplus (Multi winner Contests) (Cincinnati Method)	Determine Surplus	The technique used by Cambridge for selecting ballots to transfer from a candidate's surplus to bring the candidate down to quota is called the Cincinnati Method. The surplus is the votes in excess of the quota that are received by a candidate	Surplus Vote=Total votes for candidate - Quota (threshold)	Mass. Gen. Laws 54A-http://www.cambridgema.gov/election/~link.aspx?id=D58142E0FBC64BEDB4B0F92D957FD453&z=z;	Massachusetts: http://www.cambridgema.gov/election/~link.aspx?id=D58142E0FBC64BEDB4B0F92D957FD453&z=z; https://drive.google.com/open?id=0B6Xsbk1wDKOodHY2czEwRGE2ZjA		
Redistribution of Surplus (Multi winner Contests) (Cincinnati Method)	Determine "n"	n is nearest whole number computed by the formula: n=Candidates total ballots/surplus	n=total votes for candidate/surplus vote	Mass. Gen. Laws 54A-http://www.cambridgema.gov/election/~link.aspx?id=D58142E0FBC64BEDB4B0F92D957FD453&z=z;	Massachusetts: http://www.cambridgema.gov/election/~link.aspx?id=D58142E0FBC64BEDB4B0F92D957FD453&z=z; https://drive.google.com/open?id=0B6Xsbk1wDKOodHY2czEwRGE2ZjA		
Redistribution of Surplus (Multi winner Contests) (Cincinnati Method)	Transfer surplus ballots	every nth ballot is drawn and transferred to a continuing candidate until the original candidate is credited with ballots equaling no more than quota. A ballot selected by this method that does not show a preference for a continuing candidate is skipped and remains with the original candidate. If not enough ballots are removed when ballots n, 2n, 3n, have been transferred, the sequence starts again with n+1, 2n+1, 3n+1,	Transfer every nth ballot to next highest ranked continuing candidate until votes for original candidate = quota	Mass. Gen. Laws 54A-http://www.cambridgema.gov/election/~link.aspx?id=D58142E0FBC64BEDB4B0F92D957FD453&z=z;	Massachusetts: http://www.cambridgema.gov/election/~link.aspx?id=D58142E0FBC64BEDB4B0F92D957FD453&z=z; https://drive.google.com/open?id=0B6Xsbk1wDKOodHY2czEwRGE2ZjA		
Elimination of candidate(s)	Undeclared Write-In	all undeclared write-in candidates must be defeated simultaneously. MUST (Minneapolis Charter, 167.60(c)(1)(b))	Eliminate undeclared write-in candidates	Minneapolis Charter, 167.60 (c)(1)(b)	Minneapolis: https://drive.google.com/open?id=0B6Xsbk1wDKOoZ2NYTHFNSzFCSkE		
Elimination of candidate(s)	Mathematically impossible to be elected (Batch Elimination)	If a candidate satisfies both of the following conditions, then all candidates with fewer votes may be designated as defeated: (1) At least one other candidate has at least as many votes as the candidate. (2) The candidate has more votes than the total votes for all candidates with fewer votes. MUST (IF ANY) (SB 1288, 22100(d)-(e))	Eliminate candidates for whom it is mathematically impossible to be elected. (eliminate candidates C1, C2, C3....Cn if sum of votes for C1....Cn < votes for candidate B and votes for B < votes for candidate X)	CA SB 1288, 22100(d)-(e), Minneapolis Charter, 167.60 (c)(1)(b), Maine Rev. Statutes, tit. 21 §§ 723-A(2)(B); 723-A (4)(B), St Paul Ordinances, 31.05(d)(1)-(2), Takoma Park Charter, § 606(f)	CA SB 1288: http://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB1288; Minneapolis: https://drive.google.com/open?id=0B6Xsbk1wDKOoZ2NYTHFNSzFCSkE; Maine: http://legislature.maine.gov/statutes/21-A/title21-Asec723-A.html; St. Paul: https://drive.google.com/open?id=0B6Xsbk1wDKOoNmNzWDVVRTkdNqVk; Takoma Park: https://drive.google.com/open?id=0B6Xsbk1wDKOoWU1BRkZYmZpXzA		

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STATUS: DRAFT - Work In Progress		Voting Methods and Tabulation Universe, a spreadsheet that contains our 'ground truth' of how various jurisdictions conduct elections					
Category	Label	Plain Language	Rules	Jurisdiction	Link to Authoritative Source Document(s)	NIST/TGDC/Standard/Spec	Misc. Note
Elimination of candidate(s)	Defeat last place candidate	If no candidate's vote total is equal to or greater than the threshold, a new round begins and the candidate with the fewest votes is defeated MUST (St Paul Ordinances, 31.05(d)(2))	If no candidate meets threshold, eliminate candidate with fewest votes	Minneapolis Charter, 167.60 (c)(1)(b), St Paul Ordinances, 31.05(d)(2), Portland Charter, Art. II § 3(c), San Francisco Charter, § 13.102(c), Berkeley Code, 2.14.040(c), Oakland Charter, 1105(d), San Leandro Code, tit. 1 § 1-11-320(c), If no other candidates eliminated in round: SB 1288, 22100(d)–(e), Minneapolis Charter, 167.60(c)(1)(b), Maine Rev. Statutes, tit. 21 § 723-A(2) (B); 723-A(4)(B), St Paul Ordinances, 31.05(d)(1)–(2), Takoma Park Charter, § 606 (f), Santa Fe Code 9-1.15(E) (3)	Minneapolis: <a drive.google.com="" href="https://drive.google.com/open?id=0B6Xsbk1wDKOoZ2NYTHFNSzFCSE; St. Paul: https://drive.google.com/open?id=0B6Xsbk1wDKOoNmNzWDVVRTkdNqVk; Portland: https://drive.google.com/open?id=0B6Xsbk1wDKOoV0JUWEtsakFxmE0; San Francisco: https://drive.google.com/open?id=0B6Xsbk1wDKOodUnSQUtNEZ6X2c; Berkeley: https://drive.google.com/open?id=0B6Xsbk1wDKOodlhVUnBmbXFUVEU; Oakland: https://drive.google.com/open?id=0B6Xsbk1wDKOoeVp2S1NUS3V0Sm8; San Leandro: https://drive.google.com/open?id=0B6Xsbk1wDKOoT2ttM011T3FQM0U; CA SB 1288: http://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=20150160SB1288; Maine: http://legislature.maine.gov/statutes/21-A/title21-Asec723-A.html; Takoma Park: https://drive.google.com/open?id=0B6Xsbk1wDKOoWU1BRkZYMzZpXzA</td><td></td><td></td></tr> <tr> <td>Elimination of candidate(s)</td><td>All but top two</td><td>If no candidate receives that minimum number, the two candidates with the greatest number of firstchoice votes advance to a second round of counting.</td><td>All but top two 1st choice vote getters eliminated</td><td>NCGS 163-329(b1)(2)</td><td>North Carolina: https://drive.google.com/open?id=0B6Xsbk1wDKOoMkdwYTJQSkxqTzQ		
Rounds	Subsequent rounds 4.1.2.8.11	The votes in the successive rounds shall be re-tabulated among the remaining candidates until one candidate receives a majority of the votes cast in that round. In each successive round, each voter's ballot shall count as a single vote for whichever candidate the voter has ranked highest who has not been eliminated in a prior round, (Portland Charter, Art. II § 3(c))	All continuing ballots recounted with eliminated candidates' continuing ballots counting for highest-ranked continuing candidate. Elimination based on fewest votes. Rounds continue until candidate elected.	Portland Charter, Art. II § 3(c), Maine Rev. Statutes, tit. 21 § 723-A(2), San Leandro Code, tit. 1 1-11-320(d), Takoma Park Charter, § 606E	Portland: https://drive.google.com/open?id=0B6Xsbk1wDKOoV0JUWEtsakFxmE0; Maine: http://legislature.maine.gov/statutes/21-A/title21-Asec723-A.html; San Leandro: https://drive.google.com/open?id=0B6Xsbk1wDKOoT2ttM011T3FQM0U; Takoma Park: https://drive.google.com/open?id=0B6Xsbk1wDKOoWU1BRkZYMzZpXzA		
Rounds	Subsequent rounds	Every ballot counting towards the eliminated candidate shall be advanced to the next-ranked continuing candidate. All the continuing ballots for all continuing candidates shall be counted again in a new round. During the elimination stage of any round, in the event that any candidate has more votes than the combined vote total of all candidates with fewer votes, all the candidates with fewer votes shall be eliminated simultaneously, and those ballots advanced to the next-ranked continuing candidate. Berkeley Code, 2.14.040(D)	All continuing ballots recounted with eliminated candidates' ballots counting for highest-ranked continuing candidate. Elimination may be based on mathematically impossible to be elected or fewest votes. Rounds continue until candidate elected.	Berkeley Code, 2.14.040(D), Oakland Charter, 1105(d), NCGS 163-329(b1)(2)	Berkeley: https://drive.google.com/open?id=0B6Xsbk1wDKOodlhVUnBmbXFUVEU; Oakland: https://drive.google.com/open?id=0B6Xsbk1wDKOoeVp2S1NUS3V0Sm8		

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Category	Label	Plain Language	Rules	Jurisdiction	Link to Authoritative Source Document(s)	NIST/TGDC/Standard/Spec	Misc. Note
Rounds	Subsequent rounds	(1) all candidates for whom it is mathematically impossible to be elected must be defeated simultaneously, or the candidate with the fewest votes is defeated, (2) Votes for the defeated candidate(s) must be transferred to each ballot's next-ranked continuing candidate, except votes for candidates defeated in the final round are not transferred if, by their defeat, the number of continuing candidates is reduced to one (1), (3) The number of votes cast for each candidate, as indicated by the highest continuing ranking on each ballot, must be counted, (4) These procedures must be repeated until one (1) candidate reaches the threshold, or until only one (1) continuing candidate remains. Minneapolis Charter, 167.60(c)(1)(b)	Eliminated candidates' continuing ballots count for highest-ranked continuing candidate. Elimination may be based on mathematically impossible to be elected, fewest votes or not in top two. Rounds continue, if necessary, until candidate elected.	Minneapolis Charter, 167.60 (c)(1)(b), CA SB 1288, 22100 (f), St Paul Ordinances, 31.05 (d)(1)–(3).	Minneapolis: https://drive.google.com/open?id=0B6Xsbk1wDKOoZ2NYTHFNSzFCSE; CA SB 1288: http://leginfo.ca.gov/faces/billNavClient.xhtml?bill_id=201520160SB1288; St. Paul: https://drive.google.com/open?id=0B6Xsbk1wDKOoNmNzWDVRTkdnQVk		

DRAFT: Voting Method & Tabulation Universe, V1.0		L. Lochridge - Editor and Working Group Chair, George Gilbert, Chris Hughes - Editor & Legislation Expert, Herb Deutsch, Celeste Landry		STATUS: DRAFT - Work In Progress Voting Methods and Tabulation Universe, a spreadsheet that contains our 'ground			
Category	Label	Plain Language	Rules	Jurisdiction	Link to Authoritative Source Document(s)	NIST/TGDC/Standard/Spec	Misc. Note
Rounds (Multi winner contests)	Subsequent rounds (Multi Winner)	<p>Plain Language</p> <p>(c)(1) The threshold must be calculated. (c)(1)a. The number of votes cast for each candidate for the current round must be counted. If the number of candidates, other than any undeclared write-in candidate, whose vote total is equal to or greater than the threshold is equal to the number of seats to be filled, those candidates who are continuing candidates are elected and the tabulation is complete. If the number of candidates, other than any undeclared write-in candidate, whose vote total is equal to or greater than the threshold is not equal to the number of seats to be filled, a new round begins and the tabulation must continue as described in clause b. (c)(1)b. Surplus votes for any candidates whose vote total is equal to or greater than the threshold must be calculated. (c)(1)c. At the beginning of the second round only, after any surplus votes are calculated but not yet transferred, all undeclared write-in candidates and all candidates for whom it is mathematically impossible to be elected must be defeated simultaneously. For rounds subsequent to the second round, after any surplus votes are calculated but not yet transferred, all candidates for whom it is mathematically impossible to be elected must be defeated simultaneously. Votes for the defeated candidates must be transferred to each ballot's next-ranked continuing candidate, except votes for candidates defeated in the final round are not transferred if, by their defeat, the number of continuing candidates is reduced to the number of seats yet to be filled. If no candidate can be defeated under this clause, the tabulation must continue as described in clause d. Otherwise, the tabulation must continue as described in clause a. (c)(1)d. The candidate with the largest surplus is declared elected and that candidate's surplus is transferred....The transfer value of each vote cast for an elected candidate must be transferred to the next continuing candidate on that ballot. If no candidate has a surplus, the tabulation must continue as described in clause e. Otherwise, the tabulation must continue as described in clause a. (c)(1)e. If there are no transferable surplus votes, the candidate with the fewest votes is defeated. (c)(1)f. The procedures in clauses a. to e. must be repeated until the number of candidates whose vote total is equal to or greater than the threshold is equal to the number of seats to be filled, or until the number of continuing candidates is equal to the number of seats yet to be filled. Votes for a defeated candidate are transferred at their transfer value to each ballot's next-ranked continuing candidate, except votes for candidates defeated in the final round are not transferred if, by their defeat, the number of continuing candidates is reduced to the number of seats yet to be filled. (Minneapolis Charter, tit. 8.5, ch. 167.70 (c)(1))</p>	<p>Rules</p> <p>1. Undeclared write-ins and/or candidates mathematically impossible to be elected are defeated and their ballots counted for the highest ranked continuing candidate at current transfer value</p> <p>2. Surplus or candidate's ballots with fewest votes count for highest-ranked continuing candidate at current transfer value</p>	<p>Jurisdiction</p> <p>Minneapolis Charter, tit. 8.5, ch. 167.70 (c)(1)</p>	<p>Link to Authoritative Source Document(s)</p> <p>Minneapolis: https://drive.google.com/open?id=0B6Xsbk1wDKOoZ2NYTHFNSzFCSE</p>		

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Category	Label	Plain Language	Rules	Jurisdiction	Link to Authoritative Source Document(s)	NIST/TGDC/Standard/Spec	Misc. Note
Rounds (Multi winner contests)	Subsequent rounds (Proportional Multi Winner)	<p>(f) For each candidate that is designated as elected and has a surplus, the surplus of that candidate shall be transferred as follows:</p> <p>(1) The surplus factor for the candidate shall be calculated as the quotient, rounded down to five decimal places, of the candidate's surplus divided by the total number of votes for the candidate.</p> <p>(2) Each ballot counted for the candidate shall be transferred to, and counted for, the highest-ranked continuing candidate on that ballot using a new transfer value, calculated as the product, rounded down to five decimal places, of the old transfer value times the candidate's surplus factor.</p> <p>(3) "Residual surplus" means the number of surplus votes not transferred pursuant to paragraphs (1) and (2) due to rounding. The residual surplus for the transfer equals the surplus for the candidate minus the sum of the new transfer values for every ballot transferred from the candidate. The residual surplus shall not be counted for any candidate nor as part of other exhausted votes.</p> <p>(4) After the candidate's surplus is transferred and his or her residual surplus is calculated, the candidate does not have a surplus, and the candidate's vote total for the remainder of the tabulation shall be equal to the threshold.</p> <p>(g) If a surplus was not transferred in this round pursuant to subdivision (f), the continuing candidate with the fewest votes shall be designated as defeated.</p> <p>(2) Each ballot that counted for the defeated candidate shall be transferred to, and counted for, the highest ranked continuing candidate on that ballot using the current transfer value. After all ballots have been transferred, a defeated candidate shall have zero votes.</p>	<p>1. Candidates mathematically impossible to be elected are defeated and their ballots counted for the highest ranked continuing candidate at current transfer value</p> <p>2. Surplus or candidate's ballots with fewest votes count for highest-ranked continuing candidate at current transfer value</p>	CA SB 1288, 22101(f)-(g)(2)	CA SB 1288		
Rounds (Multi winner contests)	Subsequent rounds (Proportional Multi Winner)	"The computer disk with the ballot files is installed in a second computer. This computer contains the software which counts the ballots. The software has been programmed to follow the "Cambridge Rules," as documented in M.G.L. Chapter 54A and in the Cincinnati Code - Article IX of 1938. " (It is hard to tell exactly what they are now doing. Further inquiry is being made and documentation sought. Gg)	Surplus and eliminated candidates' ballots count for highest-ranked continuing candidate at full vote value	Cambridge: http://www.cambridgema.gov/election/~link.aspx?id=D58142E0FBC64BEDB4B0F92D957FD453&z=z ; Cincinnati Charter of 1936, Art. IX(m) (1936); [No subsequent round provision in Massachusetts Law]	Cincinnati Method Description: https://drive.google.com/open?id=0B6Xsbk1wDKOoVGtUMIE0b1FWV0U ; Cambridge Ballot Adjudication: http://www.cambridgema.gov/election/~link.aspx?id=D58142E0FBC64BEDB4B0F92D957FD453&z=z		
Determine if Elected	Elected	If: (1) There is only one continuing candidate or (2) There are exactly two continuing candidates, in which case the candidate with a majority of votes shall be designated as elected	Only one continuing candidate remains or two candidates remain	CA SB 1288, 22100(b)(1-2)	CA SB 1288		

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Category	Label	Plain Language	Rules	Jurisdiction	Link to Authoritative Source Document(s)	NIST/TGDC/Standard/Spec	Misc. Note
Rounds (Multi-Pass IRV)	Subsequent rounds (Multi-Pass IRV)	If more than one seat is to be filled in the same race, the voter votes the same way as if one seat were to be filled. The counting is the same as when one seat is to be filled, with one or more rounds as needed, except that counting is done separately for each seat to be filled. The first counting results in the first winner. Then the second count proceeds without the name of the first winner. This process results in the second winner. For each additional seat to be filled, an additional count is done excluding the names of the candidates who have already won.	Ballots counted in one or two rounds, as in single winner contests, for each successive seat to be filled with elected candidates names removed for successive counts.	NCGS 163-329(b1)(2)	North Carolina: https://drive.google.com/open?id=0B6Xsbk1wDKOoMkdwYJTQSkxqTzQ		
Determine Continuing/Exhausted Ballots	Determine Continuing/ Exhausted Ballots A	Exhausted ballot: does ballot not rank any continuing candidate, contains an overvote at the highest continuing ranking or contains 2 or more sequential skipped rankings before its highest continuing ranking. MUST (Maine Rev. Statute, 21-A M.R.S.A. § 723-A(1)(D))	Continuing Ballot if: highest continuing ranking exists .and. not an overvote .and. 2 sequential rankings not skipped preceding highest continuing ranking. Otherwise=Exhausted Ballot	Maine Rev. Statute, 21-A M.R. S.A. § 723-A(1)(D)	Maine: http://legislature.maine.gov/statutes/21-A/title21-Asec723-A.html		
Determine Continuing/Exhausted Ballots	Determine Continuing/ Exhausted Ballots B	Exhausted...If all of the choices have been eliminated or there are no more choices indicated on the ballot. If a ranked-choice ballot gives equal rank to two or more candidates, the ballot shall be declared exhausted when such multiple rankings are reached. MUST (San Francisco Charter, art. XIII, § 13.102(a)(3))	Continuing Ballot if: highest continuing ranking exists .and. not an overvote. Otherwise=Exhausted Ballot	San Francisco Charter, art. XIII, § 13.102(a)(3), 54A Mass. Gen. Laws § 9(h), Santa Fe Code 9-1.15(B)(2)(3)(5)(9)(12)	San Francisco: https://drive.google.com/open?id=0B6Xsbk1wDKOodUNsQUttNEZ6X2c;Mass/Cambridge:https://drive.google.com/open?id=0B6Xsbk1wDKOodHY2czEwRGE2ZjA		
Determine Continuing/Exhausted Ballots	Determine Continuing/ Exhausted Ballots C	22002. A ballot that does not contain a highest-ranked continuing candidate shall not count for any candidate, but rather shall count as an overvote, abstention, or other exhausted vote. SB 1288, 22001(c) Abstention means a ballot that is to be counted for the highest-ranked continuing candidate, but that does not contain a highest-ranked continuing candidate or overvote, and the voter did at least one of the following: (1) Failed to assign an available ranking to every qualified candidate, and the ballot allowed the voter to rank an additional qualified candidate without creating an overvote ranking. (2) Assigned a qualified candidate two or more different rankings . (SB 1288, 22002, 22001(c))	Continuing Ballot if: highest continuing ranking exists .and. not an overvote .and. not skipped ranking .and. not duplicate ranking. Otherwise=Exhausted Ballot	CA SB 1288, 22002, CA SB 1288, 22001(c)	CA SB 1288		
Resolve ties	Resolve ties, continuing or elected	(1) Ties between candidates with the fewest votes must immediately and publicly be decided by lot by the chief election official. The candidate chosen by lot remains a continuing candidate and the other candidate is defeated, (2) Ties between two (2) continuing candidates must immediately and publicly be decided by lot by the chief election official at the ranked voting tabulation center. The candidate chosen by lot is elected. (St Paul Ordinances, 31.05(d)(1)–(2))	Decided by "lot". Candidate chosen by lot is continuing or elected.	St Paul Ordinances, 31.05(d)(1)–(2), NCGS 163-329(b1)(2)	St. Paul: https://drive.google.com/open?id=0B6Xsbk1wDKOoNmNzWdVrTKdnQVv		
	Resolve ties, defeat A	1) Ties between candidates with the fewest votes must immediately and publicly be decided by lot by the chief election official. The candidate chosen by lot must be defeated, (2) In the case of a tie between two (2) or more continuing candidates, the tie must be decided by lot as provided in Minneapolis Charter Chapter 2, Section 12. A tied candidate chosen by lot must be defeated. (Minneapolis Charter, 167.60(C)(1)(c)–(d))	Decided by "lot" "immediately and publicly." Candidate chosen by lot is defeated.	Minneapolis Charter, 167.60 (C)(1)(c)–(d)	Minneapolis: https://drive.google.com/open?id=0B6Xsbk1wDKOoNmNzWdVrTKdnQVv		

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Category	Label	Plain Language	Rules	Jurisdiction	Link to Authoritative Source Document(s)	NIST/TGDC/Standard/Spec	Misc. Note
Resolve ties	Resolve ties, defeat B	A tie under this section between candidates for the most votes in the final round or a tie between last-place candidates in any round must be decided by lot, and the candidate chosen by lot is defeated. Election officials may resolve prospective ties between candidates before the election. (Maine Rev. Statutes, tit. 21 § 723-A(3))	Decided by lot. Resolution process may be determined prior to election. Candidate chosen by lot is defeated.	Maine Rev. Statutes, tit. 21 § 723-A(3)	Maine: http://legislature.maine.gov/statutes/21-A/title21-A-sec723-A.html		
Resolve ties	Resolve ties, all outcomes	In the event of a tie that affects the outcome of the election, the tie shall be broken by comparing the votes of the tied candidates in the previous rounds of counting, starting with the count immediately preceding the round in which the tie occurs. If one of the tied candidates had more votes than the remaining tied candidates in the preceding round or an earlier round of counting, then that candidate shall advance and the others shall be eliminated. If the candidates were tied in each preceding round, then the tie shall be resolved by lot. In the event that this tie occurs between or among all remaining candidates, then a runoff election between or among the tied candidates shall be held within forty-five (45) days after the date of the election. (Takoma Park Charter, § 13.102(h))	Ties resolved by standing in previous round(s) or runoff if ties at all rounds	Takoma Park Charter, § 606 (h)	Takoma Park: https://drive.google.com/open?id=0B6Xsbk1wDKOodlhVUnBMbXFUVEU		
Resolve ties	Resolve ties, defeat C	In the event that two or more candidates tie for the fewest number of votes, the candidate to eliminate shall be chosen by lot. (Berkeley Code, 2.14.050)	Decided by "lot." Candidate chosen by lot is defeated.	Berkeley Code, 2.14.050, Oakland Charter, 1105(e), SB 1288, 22003, San Francisco Charter, § 13.102 (f), San Leandro Code, tit. 1 1-11-325, Santa Fe Code 9-1.15(F)	Berkeley: https://drive.google.com/open?id=0B6Xsbk1wDKOodlhVUnBMbXFUVEU ; Oakland: https://drive.google.com/open?id=0B6Xsbk1wDKOoeVp2S1NUS3V0Sm8 ; San Francisco: https://drive.google.com/open?id=0B6Xsbk1wDKOodUNsQUttNEZ6X2c ; San Leandro: https://drive.google.com/open?id=0B6Xsbk1wDKOoT2ttM011T3FQM0U		
Resolve Overvotes	Resolve Overvotes A	If a ranked-choice ballot gives equal rank to two or more candidates, the ballot shall be declared exhausted when such multiple rankings are reached. (San Francisco Charter, § 13.102(a))	If overvote exists, at the highest continuing ranking: Ballot is exhausted	San Francisco Charter, § 13.102(a), CA SB 1288, 22002, Berkeley Code, 2.14.080, Oakland Charter, 1105(g)-(h), Maine Rev. Statutes, tit. 21 § 723-A(2), Santa Fe Code, 9-1.15(B)(9)	San Francisco: https://drive.google.com/open?id=0B6Xsbk1wDKOodUNsQUttNEZ6X2c		
Resolve Overvotes	Resolve Overvotes B	When a skipped ranking, overvote or repeat candidate ranking is encountered on a ballot, that ballot shall count towards the highest continuing ranking that is not a skipped ranking, an overvote or repeat candidate ranking. (Minneapolis Charter, 167.60(c)(2))	If overvote exists, at the highest continuing ranking: Ballot counts for highest continuing ranking not overvoted.	Minneapolis Charter, 167.60 (c)(2), St Paul Ordinances, 31.05(d)(4)(b), NCGS 163-329 (b1)(2)	Minneapolis: https://drive.google.com/open?id=0B6Xsbk1wDKOoZ2NYTHFNSzFCSkE ; St. Paul: https://drive.google.com/open?id=0B6Xsbk1wDKOoNmNzWDVRTkdQVk		
Resolve Overvotes	Resolve Overvotes C	Ballots with two or more of the same number shall be declared exhausted when such duplicate rankings are reached unless only one of the candidates with the duplicate ranking is an advancing candidate. (Takoma Park Charter, § 606 (g))	If overvote exists, at the highest continuing ranking: Ballot is exhausted unless one of the candidates has been eliminated	Takoma Park Charter, § 606 (g)	Takoma Park: https://drive.google.com/open?id=0B6Xsbk1wDKOodlhVUnBMbXFUVEU		

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Category	Label	Plain Language	Rules	Jurisdiction	Link to Authoritative Source Document(s)	NIST/TGDC/Standard/Spec	Misc. Note
Resolve Repeat Rankings	Resolve Repeat Rankings A	When a skipped ranking, overvote or repeat candidate ranking is encountered on a ballot, that ballot shall count towards the highest continuing ranking that is not a skipped ranking, an overvote or repeat candidate ranking. (Minneapolis Charter, 167.60(c))	Advance to next highest ranked continuing candidate if an additional ranking for a previously ranked candidate is encountered.	Minneapolis Charter, 167.60 (c)(2), Berkeley Code, 2.14.080, Oakland Charter, 1105(g)–(h), Maine Rev. Statutes, tit. 21 § 723-A(2), St Paul Ordinances, 31.05(d)(4) (b), San Francisco Charter, § 13.102(a), Takoma Park Charter, § 606(g), NCGS 163-329(b1)(2), Santa Fe Code 9-1.15(B)(4), Maine Rev. Statutes, tit. 21 § 723-A(2)	Minneapolis: https://drive.google.com/open?id=0B6Xsbk1wDKOoZ2NYTHFNSzFCskE ; Berkeley: https://drive.google.com/open?id=0B6Xsbk1wDKOodlhVUnBMbXFUVEU ; Oakland: https://drive.google.com/open?id=0B6Xsbk1wDKOoeVp2S1NUS3V0Sm8 ; Maine: http://legislature.maine.gov/statutes/21-A/title21-Asec723-A.html ; St. Paul: https://drive.google.com/open?id=0B6Xsbk1wDKOoNmNzWDVRTkdnQVk ; San Francisco: https://drive.google.com/open?id=0B6Xsbk1wDKOodUNsQUtNEZ6X2c ; Takoma Park: https://drive.google.com/open?id=0B6Xsbk1wDKOodUNsQUtNEZ6X2c		
Resolve Repeat Rankings	Resolve Repeat Rankings B	"Exhausted ballot" means a ballot that is an abstention, an overvote that is not counted fractionally or an other exhausted ballot. (SB 1288 22002) Abstention means a ballot that is to be counted for the highest-ranked continuing candidate, but that does not contain a highest-ranked continuing candidate or overvote, and the voter did at least one of the following: (1) Failed to assign an available ranking to every qualified candidate, and the ballot allowed the voter to rank an additional qualified candidate without creating an overvote ranking. (2) Assigned a qualified candidate two or more different rankings . (SB 1288, 22001 (a))	Exhaust ballot	CA SB 1288 22002., CA SB 1288, 22001(a); Eastpointe, Michigan	CA SB 1288		
Resolve Skipped Rankings	Resolve Skipped Rankings A	When a skipped ranking, overvote or repeat candidate ranking is encountered on a ballot, that ballot shall count towards the highest continuing ranking that is not a skipped ranking, an overvote or repeat candidate ranking. (Minneapolis Charter, 167.60(c)(2))	Advance to next ranking	Minneapolis Charter, 167.60 (c)(2), Oakland Charter, 1105 (g)–(h), Berkeley Code, 2.14.070, St Paul Ordinances, 31.05(d)(4)(b), San Francisco Charter, § 13.102(a), NCGS 163-329(b1)(2), Santa Fe Code, 9-1.15(B)(12)	Minneapolis: https://drive.google.com/open?id=0B6Xsbk1wDKOoZ2NYTHFNSzFCskE ; Oakland: https://drive.google.com/open?id=0B6Xsbk1wDKOoeVp2S1NUS3V0Sm8 ; Berkeley: https://drive.google.com/open?id=0B6Xsbk1wDKOodlhVUnBMbXFUVEU ; St. Paul: https://drive.google.com/open?id=0B6Xsbk1wDKOoNmNzWDVRTkdnQVk ; San Francisco: https://drive.google.com/open?id=0B6Xsbk1wDKOodUNsQUtNEZ6X2c ; North Carolina: https://drive.google.com/open?id=0B6Xsbk1wDKOoMkdwYTTJQSkxqTzQ		
Resolve Skipped Rankings	Resolve Skipped Rankings B	Ballots skipping one number shall be counted for that voter's next clearly indicated choice, but ballots skipping more than one number shall be declared exhausted when this skipping of numbers is reached. (Takoma Park Charter, § 606 (g))	Ballot Exhausted/Eliminated after 2 consecutive skipped rankings	Takoma Park Charter, § 606 (g); Maine Rev. Stat. 21-723-A (D)	Takoma Park: https://drive.google.com/open?id=0B6Xsbk1wDKOoMkdwYTTJQSkxqTzQ		

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Category	Label	Plain Language	Rules	Jurisdiction	Link to Authoritative Source Document(s)	NIST/TGDC/Standard/Spec	Misc. Note
Resolve Skipped Rankings	Resolve Skipped Rankings C	"Exhausted ballot" means a ballot that is an abstention, an overvote that is not counted fractionally or an other exhausted ballot. (SB 1288 22002) Abstention means a ballot that is to be counted for the highest-ranked continuing candidate, but that does not contain a highest-ranked continuing candidate or overvote, and the voter did at least one of the following: (1) Failed to assign an available ranking to every qualified candidate, and the ballot allowed the voter to rank an additional qualified candidate without creating an overvote ranking. (2) Assigned a qualified candidate two or more different rankings. (SB 1288, 22001 (a))	Exhaust ballot	CA SB 1288 22002., CA SB 1288, 22001(a); Colo. R. 26.8.2	CA SB 1288; Colo. R. 26		
SINGLE-ROUND TABULATION VARIANTS'							
Straight Party Voting	Straight Party	Voter may cast a vote for all candidates of a political party with a single mark or selection	In partisan elections the ballot labels shall include a voting square or position whereby the voter may by one punch or one X record a straight party ticket vote for all the candidates of one party or may vote a split ticket for the candidates of his or her choice. (Alabama Code Title 45. Local Laws § 45-4-111(d)(1)d)	Alabama §§ 45-4-111(d)(1)(d), 17-7-21(3), Oklahoma § 26-7-119, Pennsylvania § 1109(A) (3)(d) , South Carolina § 7-13-330, Texas § 64.004, Utah § 20A-3-106, Michigan § 168.736c, Indiana § 3-11-14-23(c)			
Split ticket Voting	Split ticket (Single seat)	A straight party mark counts for all candidates of the party selected except a voter may split ticket by also marking individual names in any single seat contest. Selection of a candidate in a contest supercedes any straight ticket selection for that contest.	When only one candidate is to be elected to any office and the elector desires to vote for a candidate not on the straight party ticket, the elector may mark the name of the candidate for whom he or she desires to vote on the ballot. (Alabama Code Title 17. Elections § 17-6-36)	Alabama § 17-6-36, Oklahoma § 26-7-127(5), Pennsylvania tit. 25 § 1003, South Carolina §§ 17-13-330, 17-13-1340(b), Texas § 65.007, Utah § 20A-3-106, Michigan § 168.736c, Indiana § 3-12-1-7(b)(3)(B)			
Split ticket Voting	Split ticket (Multi-seat Inclusive)	A straight party mark counts for all candidates of the party selected except a voter may split ticket by also marking individual names in any multi seat contest. If fewer individual names are selected than seats to be filled and the number of candidates of the party selected by the straight party option would not result in the contest being overvoted, the straight party candidates also receive a vote.	When two or more candidates are to be elected to the same office and the elector desires to vote for candidates on different party tickets for such office, the elector may mark the names of the candidates for whom he or she desires to vote on the ballot. (Alabama Code Title 17. Elections § 17-6-37)	Alabama § 17-6-37, Oklahoma § 26-7-127, Texas § 65.007, Utah § 20A-3-106(1)(i), Michigan § 168.736c, Indiana §			
Split ticket Voting	Split ticket (Multi-seat Exclusive)	A straight party mark counts for all candidates of the party selected except a voter may split ticket by also marking individual names in any single- or multi seat contest. For multi-seat contests, a candidate selection negates the straight party selection for that contest.	For an office where more than one candidate is to be voted for, the voter, after marking in the party square, may divide his vote by marking a cross (X) or check () to the right of each candidate for whom he or she desires to vote. For such office votes shall not be counted for candidates not individually marked. (Penn. Elec. Code tit. 25, § 1003), http://scstatehouse.gov/code/t07c013.php)	Pennsylvania tit. 25 §§ 1003, 1112-A(2), South Carolina			

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		STATUS: DRAFT - Work In Progress Voting Methods and Tabulation Universe, a spreadsheet that contains our 'ground truth' for the rules that govern the process					
Category	Label	Plain Language	Rules	Jurisdiction	Link to Authoritative Source Document(s)	NIST/TGDC/Standard/Spec	Misc. Note
Multi-seat exclusion	Multi-seat exclusion	Multi-seat contests excluded from straight party application.	To vote for any candidate for an at-large office (insert county council, city common council, town council, or township board if those offices appear on this ballot), you must make another voting mark for each candidate you wish to vote for. Your straight party vote will not count as a vote for any candidate for that office. (Indiana Code Title 3. Elections § 3-11-2-10(c)(2))	Indiana § 3-11-2-10(c)(2)			
Independent ticket limitation	Independent ticket limitation	Straight party vote for Independent ticket counts only for President and VP, governor and lieutenant governor contests.	A vote cast for an independent ticket will only be counted for the candidates for President and Vice President or governor and lieutenant governor comprising that independent ticket. This vote will NOT be counted for any OTHER independent candidate appearing on the ballot. (Indiana Code Title 3. Elections § 3-11-2-10(d))	Indiana § 3-11-2-10(d)			
Straight Party Voting	Straight Party Overvote	If a voter votes for more than one party in the "straight party" section of their ballot, that ballot will be counted as an overvote for any partisan race.	IC 3-12-1-7(f) If a voter votes a straight party ticket for more than one (1) political party, the whole ballot is void with regard to all candidates nominated by a political party, declared write-in candidates, or candidates designated as independent candidates on the ballot. However, the voter's vote for a school board candidate or on a public question shall be counted if otherwise valid under this chapter.	Indiana § 3-12-1-7(f)			

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STATUS: DRAFT - Work In Progress Voting Methods and Tabulation Universe, a spreadsheet that contains our 'ground truth' of the current state of the world							
Category	Label	Plain Language	Rules	Jurisdiction	Link to Authoritative Source Document(s)	NIST/TGDC/Standard/Spec	Misc. Note
Counting	Tally	One vote shall be counted for each validly selected contest option on a ballot	<p>15276.</p> <p>The precinct board members shall ascertain the number of votes cast for each person and for and against each measure in the following manner:</p> <p>One precinct board member shall read from the ballots. As the ballots are read, at least one other precinct board member shall keep watch of each vote so as to check on any possible error or omission on the part of the officer reading or calling the ballot.</p> <p>(Repealed and added by Stats. 1998, Ch. 1073, Sec. 27. Effective January 1, 1999.)</p> <p>15277.</p> <p>(a) Two of the precinct board members shall each keep a tally sheet in a form prescribed by the elections official. Each tally sheet shall contain all of the following:</p> <p>(1) The name of each candidate being voted for and the specific office for which each candidate is being voted. The offices shall be in the same order as on the ballot.</p> <p>(2) A list of each measure being voted upon.</p> <p>(3) Sufficient space to permit the tallying of the full vote cast for each candidate and for and against each measure.</p> <p>(b) The precinct board members keeping the tally sheets shall record opposite each name or measure, with pen or indelible pencil, the number of votes by tallies as the name of each candidate or measure voted upon is read aloud from the respective ballot.</p>	California (this is as close as I could come to a statute that said votes from each ballot should increment each ballot option's tally by 1) (Effectively applies to all jurisdictions)			
Counting	Overvote	A ballot that is overvoted for an office shall not be counted for that office.	If an official ballot is marked in a ballot item with more choices than there are offices to be filled or propositions that may prevail, the official ballot shall not be counted for that ballot item, but shall be counted in all other ballot items in which there is no overvote and the voter's choice can be clearly determined. (https://www.ncga.state.nc.us/EnactedLegislation/Statutes/PDF/BySection/Chapter_163/GS_163-182.1.pdf)	All Jurisdictions, N.C. Gen. Stat. § 163-182.1(a)(4)			
Counting	Undervote	If a contest is marked with a lesser number of choices of candidates or ballot questions than the number for which he or she is lawfully entitled to vote, the votes cast for all otherwise properly marked candidates or ballot questions shall be counted.	NY Rules and Regulations § 6210.13(6) Standards for determining valid votes: If a contest is marked with a lesser number of choices of candidates or ballot questions than the number for which he or she is lawfully entitled to vote, the votes cast for all otherwise properly marked candidates or ballot questions shall be counted.	NY Rules and Regulations § 6210.13(6) Standards for determining valid votes			

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Category	Label	Plain Language	Rules	Jurisdiction	Link to Authoritative Source Document(s)	NIST/TGDC/Standard/Spec	Misc. Note
Counting	Overvote	If a ballot is marked in each of two or more target areas or sensitive areas for a candidate whose name appears on the ballot more than once for the same office, and the total number of votes cast for such race for different candidates does not exceed the number for which he or she is lawfully entitled to vote, only the first vote for such candidate with multiple markings shall be counted for such candidate.	NY Rules and Regulations § 6210.13(7) If a ballot is marked in each of two or more target areas or sensitive areas for a candidate whose name appears on the ballot more than once for the same office, and the total number of votes cast for such race for different candidates does not exceed the number for which he or she is lawfully entitled to vote, only the first vote for such candidate with multiple markings shall be counted for such candidate.	NY Rules and Regulations § 6210.13(7) Standards for determining valid votes			
Counting							
Counting	Voter Intent Yes (ballot)	No ballot rejected due to technical errors in marking if voter intent can be determined by human examination.	No official ballot shall be rejected because of technical errors in marking it, unless it is impossible to clearly determine the voter's choice. (https://www.ncga.state.nc.us/EnactedLegislation/Statutes/PDF/BySection/Chapter_163/GS_163-182.1.pdf)	North Carolina,GS_163-182.1			
Counting	Voter Intent Yes (contest)	If voter intent in a contest cannot be clearly determined, the ballot shall not be counted for that contest but shall be counted for all other contests in which voter intent can be determined.	If it is impossible to clearly determine a voter's choice in a ballot item, the official ballot shall not be counted for that ballot item, but shall be counted in all other ballot items in which the voter's choice can be clearly determined. (https://www.ncga.state.nc.us/EnactedLegislation/Statutes/PDF/BySection/Chapter_163/GS_163-182.1.pdf)	N.C. Gen. Stat. § 163-182.1(a)(3)			
Counting	Voter Intent No (ballot)	An improperly marked ballot on which the votes cannot be read by the tabulation device shall not be counted. (Michigan) (a) Any ballot that is not marked as provided by law shall be rejected. (California)	(k) A vote shall not be counted for a candidate unless a cross or a check mark has been placed by the voter in the square before the space in which the name of the candidate has been printed, written, or placed. (2) If an electronic voting system requires that the elector place a mark in a predefined area on the ballot in order to cast a vote, the vote shall not be considered valid unless there is a mark within the predefined area. A stray mark made within a predefined area is not a valid vote. (Chapter 168 Sec. 803. (1) [Michigan]) ballot that is not marked as provided by law shall be rejected. (Ca. Elections Code, Division 15, Chapter 3, Article 115154.)	Mich. Comp. Laws §§ 168.803 (1)(k)-(2); Cal. Elec. Code Div. 15, Ch. 3, § 15154			
Counting	Voter Intent No (contest)	An improperly marked contest shall not be counted but other properly marked contests shall be counted.	(f) A failure to properly mark a ballot as to 1 or more candidates does not alone invalidate the entire ballot if the ballot has been properly marked as to other candidates, unless the improper marking is determined to be a distinguishing mark as described in this subsection. [Michigan 168.803(1)(f)]	Mich. Comp. Laws § 168.803 (1)(f)			

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Category	Label	Plain Language	Rules	Jurisdiction	Link to Authoritative Source Document(s)	NIST/TGDC/Standard/Spec	Misc. Note
Counting	Voter Intent (hand to eye examination)	If a ballot is rejected by a tabulation device, it must be examined by hand to eye for voter intent determination	If an official ballot is rejected by a scanner or other counting machine, but human counters can clearly determine the voter's choice, the official ballot shall be counted by hand and eye. (https://www.ncga.state.nc.us/EnactedLegislation/Statutes/PDF/BySection/Chapter_163/GS_163-182.1.pdf)	N.C. Gen. Stat. § 163-182.1(a)(5)			
Counting	Write-ins	No write-ins in primaries. Write-ins in general elections shall be counted only for qualified candidates.	Write-in votes shall not be counted in party primaries or in referenda, but shall be counted in general elections if all of the following are true: a. The write-in vote is written by the voter or by a person authorized to assist the voter pursuant to G.S. 163-166.8. b. The write-in vote is not cast for a candidate who has failed to qualify under G.S. 163-123 as a write-in candidate. c. The voter's choice can be clearly determined. (https://www.ncga.state.nc.us/EnactedLegislation/Statutes/PDF/BySection/Chapter_163/GS_163-182.1.pdf) California: 15340. Except for a voter-nominated office at a general election, each voter is entitled to write on the ballot the name of any candidate for any public office, including that of President and Vice President of the United States. 15341. Notwithstanding any other provision of law, no name written upon a ballot in any election shall be counted for an office or nomination unless the candidate whose name has been written on the ballot has complied with Part 3 (commencing with Section 8600) of Division 8.	N.C. Gen. Stat. § 163-182.1 (6); Cal. Elec. Code Div. 15, Ch. 4, §§ 15340–15341			

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Category	Label	Plain Language	Rules	Jurisdiction	Link to Authoritative Source Document(s)	NIST/TGDC/Standard/Spec	Misc. Note
Counting	Write-ins	Write-in candidates must file statement of write-in candidacy. No write-in for "voter nominated office"	<p>8600.</p> <p>Every person who desires to be a write-in candidate and have his or her name as written on the ballot of an election counted for a particular office shall file:</p> <p>(a) A statement of write-in candidacy that contains the following information:</p> <p>(1) Candidate's name.</p> <p>(2) Residence address.</p> <p>(3) A declaration stating that he or she is a write-in candidate.</p> <p>(4) The title of the office for which he or she is running.</p> <p>(5) The party nomination which he or she seeks, if running in a partisan primary election.</p> <p>(6) The date of the election.</p> <p>(7) A certification of the candidate's complete voter registration and party affiliation/preference history for the preceding 10 years, or for as long as he or she has been eligible to vote in the state if less than 10 years, if running for a voter-nominated office.</p> <p>(8) For any of the offices described in Section 13.5, a statement that the candidate meets the statutory and constitutional requirements for that office as described in that section.</p> <p>(b) The requisite number of signatures on the nomination papers, if any, required pursuant to Sections 8062, 10220, and 10510, or, in the case of a special district not subject to the Uniform District Election Law (Part 4 (commencing with Section 10500) of Division 10), the number of signatures required by the principal act of the district.</p> <p>(c) Notwithstanding any other provision of law, a person may not be a write-in candidate at the general election for a voter-nominated office.</p> <p>8606.</p> <p>Notwithstanding any other provision of law, a person may not be a write-in candidate at the general election for a voter-nominated office.</p> <p>Also see section 15342</p>	Cal. Elec. Code Div. 8, Part 3, Ch. 1 §§ 8600, 8606; Cal. Elec. Code Div. 15, Ch. 4, § 15342			

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Category	Label	Plain Language	Rules	Jurisdiction	Link to Authoritative Source Document(s)	NIST/TGDC/Standard/Spec	Misc. Note
Ballot Validation	Voter Error Alert	Voter Error Alert	Provide that if the voter selects votes for more than the number of candidates to be elected or proposals to be approved in a ballot item, the voting system shall do all the following: a. Notify the voter that the voter has selected more than the correct number of candidates or proposals in the ballot item. G.S. 163-182.1 Page 4 b. Notify the voter before the vote is accepted and counted of the effect of casting overvotes in the ballot item. c. Provide the voter with the opportunity to correct the official ballot before it is accepted and counted. (https://www.ncga.state.nc.us/EnactedLegislation/Statutes/PDF/BySection/Chapter_163/GS_163-182.1.pdf)	N.C. Gen. Stat § 163-182.1(b) (2) [HAVA Requirement - find HAVA cite]			

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Category	Label	Plain Language	Rules	Jurisdiction	Link to Authoritative Source Document(s)	NIST/TGDC/Standard/Spec	Misc. Note
Resolving Ties	Ties	Decided by lot	<p>168.851 Tie vote; determination of election by lot, procedure; drawing for state legislature. Sec. 851. If it shall appear on the canvass of the votes polled at any election canvassed by the board of county canvassers that 2 or more persons have received an equal number of votes for the same office, and that a failure to elect to any office is caused thereby, the election to the office shall be determined in the following manner: The board of canvassers for the county in which such election was held shall appoint a day for the appearance of all affected persons before the county clerk for the purpose of determining by lot among such persons the right to the office, and shall cause notice thereof to be given to all the persons interested. The county clerk shall prepare as many slips of paper as there are such persons, and write the word "elected" on as many slips of paper as there are offices to be filled, and the words "not elected" on the remaining slips, and fold the same so as to conceal the writing and so that they may appear as near alike as possible. The slips shall be placed in a box and, at the time and place appointed for the drawing of the lots, each of the persons aforesaid may draw 1 of the slips from the box, and any person drawing a slip on which is written the word "elected" shall be deemed legally elected to the office in question and the county clerk shall forthwith give him a certificate of election. [Michigan] NC § 163-182.8. Determining result in case of a tie. If the count, upon completion of canvass by the proper board of elections, shows a tie vote other than in a primary, the tie shall be resolved as follows:</p> <p>(2) If 5,000 or fewer voters cast official ballots in the ballot item, the board of elections with jurisdiction to certify the election shall break the tie by a method of random selection to be determined by the State Board of Elections. https://www.ncga.state.nc.us/EnactedLegislation/Statutes/PDF/BySection/Chapter_163/GS_163-182.8.pdf</p>	Mich. Comp. Laws § 168.851, N.C. Gen. Stat. § 163-182.8 (2); (Most jurisdictions provide for deciding ties "by lot" in some fashion)			

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Category	Label	Plain Language	Rules	Jurisdiction	Link to Authoritative Source Document(s)	NIST/TGDC/Standard/Spec	Misc. Note
Resolving Ties	Ties	Decided by lot or runoff	<p>15651.</p> <p>(a) If at any election, except as provided in subdivision (b) and an election for Governor or Lieutenant Governor, two or more persons receive an equal and the highest number of votes for an office to be voted for in more than one county, the Secretary of State shall forthwith summon the candidates who have received the tie votes, whether upon the canvass of the returns by the Secretary of State or upon recount by a court, to appear before him or her at the Secretary of State's office at the State Capitol at a time to be designated by him or her. The Secretary of State shall at that time and place determine the tie by lot. Except as provided in subdivision (b), in the same manner, at a time and place designated by it, the election board shall determine a tie vote, whether upon the canvass of the returns by the election board or upon a recount by a court, for candidates voted for wholly within one county or city.</p> <p>(b) In lieu of resolving a tie vote by lot as provided in subdivision (a), the legislative body of any county, city, or special district not subject to the Uniform District Election Law (Part 4 (commencing with Section 10500) of Division 10) may resolve a tie vote by the conduct of a special runoff election involving those candidates who received an equal number of votes and the highest number of vote</p>	Cal. Elec. Code Div. 15, Ch. 10, § 15651(a)			
Resolving Ties	Ties	Decided by General Assembly (Gov., Lt. Gov.)	<p>15654.</p> <p>In case any two or more persons have an equal and highest number of votes for either Governor or Lieutenant Governor, the Legislature shall, by a joint vote of both houses, choose one of the persons to fill the office.</p>	Cal. Elec. Code Div. 15, Ch. 10, § 15654			
Resolving Ties	Ties	Decided by runoff (if > 5,000 votes)	<p>§ 163-182.8. Determining result in case of a tie.</p> <p>If the count, upon completion of canvass by the proper board of elections, shows a tie vote other than in a primary, the tie shall be resolved as follows:</p> <p>(1) If more than 5,000 voters cast official ballots in the ballot item, the State Board of Elections shall order a new election in which only the candidates or positions tied will be on the official ballot. The State Board of Elections shall set the schedule for publication of the notice, preparation of absentee official ballots, and the other actions necessary to conduct the election. Eligibility to vote in the new election shall be determined by the voter's eligibility at the time of the new election.</p>	N.C. Gen. Stat. § 162-182.8(1)			

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Category	Label	Plain Language	Rules	Jurisdiction	Link to Authoritative Source Document(s)	NIST/TGDC/Standard/Spec	Misc. Note
Cumulative Voting	Individual Distribution of Votes	Voters have as many votes as there are seats to be elected, and can assign them in any variety of whole vote allotments across the candidates in the race. For example, if a race has seven seats to elect, a voter can cast 5 votes for one candidate, and two for another. A different voter can cast one vote each for seven candidates. If, for example, a voter casts 4 votes out of the 7 they may vote, the 3 unused votes remain unvoted. Applies to multi-seat contests.	"The ballot shall permit voters to cast six votes in the election. A voter may cast all six votes for one individual, the voter may cast one vote each for six different individuals, or the voter may cast multiple votes for some candidates and single votes for others as long as the total number of votes cast do not exceed six."	United States v. Port Chester, S.D.N.Y., Case No. 06 Civ. 15173, Consent Decree at 3.			
Proportional Voting		Voters have as many votes as there are seats to be elected, and votes are assigned proportionally to candidates based on the number of selections that voter makes in the contest. For example, if a race has seven seats to elect, a voter can vote for two candidates and have each candidate receive 3.5 votes. If a different voter in that race votes for seven candidates, each candidate will receive 1 vote. Votes cannot go unused in this form of cumulative voting. Applies only to multi-seat contests.	"Each voter will be able to cast up to five votes for the candidate of his or her choice or split any other combination of votes for candidates up to as many as one vote for each of five candidates. The maximum number of votes each voter may cast in the at-large elections will be five. The five candidates who receive the highest number of votes in the general election will be declared the winners of the at-large seats."	Banks v. Peoria, C.D. Ill. No. 87-2371, Consent Decree Exh. B at 1-2.			
Limited Voting	Casting Votes	Voters have fewer votes than there are seats to be elected. They can vote those votes in any variety of vote allotments across the candidates in a race.	art. IX, § 4, Three county commissioners shall be elected in each county. In the election of these officers each qualified elector shall vote for no more than two persons, and the three persons receiving the highest number of votes shall be elected.	Penn. Const. art. IX, § 4; Also used in Alabama, other VRA places. May be best to FOIA some Consent Decrees from Alabama/others to see how Limited Voting is described.			
Approval Voting	Casting Votes	Voters have as many votes as there are candidates up for election. They may cast zero or one vote for each candidate.	art. XI § A City officials will be elected so that each voter may vote for all the candidates the	Fargo City Charter art. XI	https://library.municode.com/nd/fargo/codes/code_of_ordinances?nodeid=HOME_RULE_CHARTER_ART11_ELECTION_PROCEDURES		
Approval Voting	Winning Condition	Candidates with the most votes win.		Fargo City Charter art. XI	https://library.municode.com/nd/fargo/codes/code_of_ordinances?nodeid=HOME_RULE_CHARTER_ART11_ELECTION_PROCEDURES		
At-large block voting	Winning Condition	Candidates with the most votes win.	art. XI § A Candidates receiving the 669:60 "the whole number of persons voting for any office shall first be ascertained and then the vote for each candidate seeking said office. In order to win an office by unofficial ballot, a candidate must receive a majority of the votes cast for a certain office. In the case that more than one candidate receives a majority, the candidates with the largest majority of votes for the positions available shall be declared elected."				
Single-winner plurality voting	Winning condition	The person who receives the most votes in an election wins election.	And that there may be a due meeti	N.H. Const. Pt. Second, Art. 33.			
Tally							
Audit							
Verification							
Configuration							
Encryption							
Supermajority	Winning Condition	Ballot option must receive 2/3rds of the vote to win.		Fl. Const. art. XI sec. 7			
Supermajority	Winning Condition	Ballot option must receive 60% of the vote to win		Fl. Const. art. XI sec. 5			

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What is this spreadsheet?	This sheet includes links to representative laws or other legal resources defining cumulative and proportional voting methods.				
Jurisdiction	Pincite	Notes			
Peoria, Illinois	Consent Decree, Page 8	VRA case; equal and even cumulative method; no detailed rules			
Port Chester, New York	Consent Decree, Pages 3-4	VRA case			

What is this spreadsheet?	Alabama and Rhode Island have unique presidential preference primary voting methods, where voters actually cast votes for delegates to party conventions instead of candidates themselves. This is in contrast to most other states where voters select a candidate on their ballot (even though those votes do ultimately go towards selecting a delegate to the party convention and not the candidate).		
State	Links	Pincites	Notes
Alabama	Alabama Law	Al. Code 17-13-43	
	Alabama party rules	AL GOP Bylaws Art. XI	
Rhode Island	Rhode Island Law	R.I. Gen. Laws 17-12.1-1 ; 17-12.1-2	
	Rhode Island Party Rules	R.I. GOP Del. Selection Plan Section IV, R. 1.0.1	

What is this spreadsheet?	This spreadsheet includes links to representative partisan primary election laws. Research in to open primaries was necessary as part of the Voting Methods Working Group's research. The practice of including multiple party primaries on a single ballot in open primary states means how a voter marks that ballot determines how and if a ballot is counted in an open primary, necessitating its inclusion in our work. Other primary laws are included if they were collected in the course of research.				
State	Links	Pincites	Notes		
Wisconsin	Wis Open Primary provision	Wis. Code 5.91(6)	Contains party preference contest		
Kansas	Kansas closed primary	Kan. Rev. Stat. 25-3301			
Minnesota	Minnesota Open Primary	204D.05, 204D.08, 8220.0750(J)	Does not contain party preference contest		
	?MI?				

Legislation									
What is this spreadsheet?	This sheet includes as many ranked-choice voting laws as were available at the time of compilation, November 2017. It includes current RCV laws, any repealed laws that were available online, and major pending legislation (determined by whether it had passed at least one House of a state legislature).								
California	Minnesota	Massachusetts	Maryland	Michigan	Colorado	Maine	North Carolina	National	Utah
RCV Guidelines for California Cities	Minneapolis	Massachusetts STV Law	Takoma Park	Eastpointe	Basalt	Portland Maine Tabulation Rues	North Carolina	HR 3057, the Fair Representation Act	Utah Law
San Francisco	St. Paul	Cambridge Elections Website		Ferndale	Telluride				
San Leandro	Minneapolis RCV History	Cincinnati Charter			Telluride Tabulation Manual	Maine Definitions			
Berkeley					Colorado Rule 26				
Oakland									
CA SB 1288									
Technical Documents									
Config and Test File	CVR and Ballot Image Data								

What is this spreadsheet?	This spreadsheet collects links and citations to provisions of all state codes that permit voters to vote a straight-party ticket. It is orgnaized alphabetically.									
State	Pin Cite	Links								
Alabama	Alabama Code Title 45. Local Laws § 45-4-111(d)(1)d , Alabama Code Title 17. Elections §§ 17-6-35 through 37, 17-6-39, 17-7-21	§ 45-4-111(d)(1)	§ 17-6-35	§ 17-6-36	§ 17-6-37	§ 17-6-39	§ 17-7-21			
Indiana	Indiana Code §§ 3-11-2-10(c), 3-11-7-4, 3-11-7.5-10(a), 3-11-13-14(a), 3-11-14-3.5(f), 3-11-14-23(c), 3-12-4-5(d), 3-12-1-7(a), 3-12-1-8(b)	§ 3-11-2-10(c)	§ 3-11-7-4	§ 3-11-7.5-10(a)	§ 3-11-13-14(a)	§ 3-11-14-3.5(f)	§ 3-11-14-23(c)	§ 3-12-1-5(d)	§ 3-12-1-7(a)	§ 3-12-1-8(b)
Kentucky	Kentucky Rev. Stat. §§ 117.085; 117.125; 117.145; 117.381; 118.025	117.085	117.125	117.145	117.381	118.025				
Michigan	Michigan Code § 168.736c	Current Law (not in force)	Former Law (in force)	Pincite for both laws is the same, but links go to different versions of the law						
Oklahoma	Oklahoma Stats. §§ 26-7-119. 26-7-127	26-7-119	26-7-127							
Pennsylvania	Pennsylvania Code §§ 1003, 1109-A(3)(d), 1223	tit. 25 § 1109-A(3)(d). PDF Page 101	tit. 25 § 1003. PDF Page 74	tit. 25 §1223. PDF Page 133	<-- These are all the same pdf, but wanted to have separate links to highlight different pages for pincites					
South Carolina	S.C. Code §§ 7-13-330, 7-13-1340	http://scstatehouse.gov/code/t07c013.php	<-- Cannot link direct to pincites, scroll down about halfway							
Texas	Texas Elec. Code §§ 1.005(20), 64.004	64.004	1.005(20)	65.007						
Utah	Utah Statutes § 20A-3-106	https://le.utah.gov/xcode/Title20A/Chapter3/20A-3-S106.html?v=C20A-3-S106_2015051220150512								

What is this spreadsheet?	This spreadsheet attempts to link to all state post-election audit laws extant as of January 2020. Some laws were not yet available online and so are not included here.					
Full Folder	Post-Election Audits Links	Notes [Any particular points of interest]	Pre-Election Testing		Ballot Reconciliation	Logic & Accuracy Testing
	Alaska 1		https://drive.google.com/open?id=1FX1D		Montana Ballot Reconciliation	
	Alaska 2					
	Arizona 1					
	Arizona 2					
	Cal 1					
	Cal 2					
	Colorado 1					
	Colorado 2					
	Colorado 3					
	Connecticut					
	DC Code					
	Florida					
	Hawaii					
	Hawaii 2					
	Idaho					
	Illinois 1					
	Illinois 2					
	Indiana 1					
	Indiana 2					
	Iowa					
	Kentucky 1					
	Kentucky 2					
	Maryland					
	Massachusetts					
	Michigan 1					
	Michigan 2					
	Minnesota 1					
	Minnesota 2					
	Missouri					
	Montana					
	Nebraska					
	Nevada					
	New Jersey					
	New Mexico 1					
	New Mexico 2					
	New York 1					
	New York 2					
	North Dakota					
	Ohio					
	Oregon					

	Pennsylvania						
	Rhode Island						
	South Carolina						
	Tennessee						
	Texas						
	Texas 2						
	Utah						
	Virginia						
	Vermont						
	Washington 1						
	Washington 2						
	Washington 3						
	Washington 4						
	West Virginia						
	Wyoming 1						
	Wyoming 2						
	Wisconsin						

Footnotes and Supplementary Research Results or Information						
Date of Entry	Name of NOTE Author or POC or Issue	This note refers to [Sheet, Column, Row #]	This note applies to: [Voting Method Variant Cross-cutting]	This note refers to: [Data Item Process Artifact Object Entity Thing] (enter sheet & Row Column and label too)	NOTE	Pointer to Document(s) collected as reference or 'See Also'
2017/12/06	List of states with 'Straight-Ticket' voting in legislative sources research matches NCSL's list as of March 31 2017 at: http://links.to/StraightParty resources https://docs.goi Cross-Cutting Straight Party variant					
2017/12/07	RCV variants, to the extent mentioned, at NCSL on ranked choice voting, are covered in VM extracted rules from legislative "Links to RCV Resources" and "Rules" WRT RC\RCV					

What is this spreadsheet?	States vary widely in their voting system testing laws. This spreadsheet includes links to any such laws that were found in the course of research for the Voting Methods Working Group, as well as any opportunistically available testing laws. It is not meant to be a complete collection of those laws, but a place to store valuable research that occurred over the course of and not directly linked to the subject matter of the Voting Methods Working Group.			
State	Link to Law	Link to Regulations	Counter requirement citation	Notes
California	Cal. Elec. Code Div. 19	Cal Voting System Standards	Cal Voting System Standards 2.1.8 (pg 32)	

[1] Chris Hughes:

Eliminated candidate is not an objectthing because they become irrelevant once defeated, right? They have no role to further play in the tabulation?