

**SENATE . . . . . No. 356**

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**The Commonwealth of Massachusetts**

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**In the Year Two Thousand Nine**  
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An Act establishing risk-limiting audits of election results..

*Be it enacted by the Senate and House of Representatives in General Court assembled, and by the authority of the same, as follows:*

1 SECTION 1. Chapter 54 of the general laws, as appearing in the 2004 Official Edition, is  
2 hereby amended by inserting after section 109 the following section:-

3 Section 109A. Audits of election results

4 Purpose. The purpose of this section is to provide a routine cross-check on the accuracy  
5 of election night vote totals, both for ballots counted originally by hand and for ballots counted  
6 by machine. The audit compares reported preliminary (unofficial) election vote totals for certain  
7 election contests to hand-to-eye counts of the same ballots and contests in order to independently  
8 confirm election outcomes. In the case that the audit uncovers discrepancies that reach a  
9 specified level, a contest-wide hand count is mandated.

10 (a) Races to be Audited. Following each primary, general or special election, random  
11 hand-count audits shall be conducted for the following offices: US President, US Senator, US  
12 Representative, Governor, Secretary of the Commonwealth, State Attorney General and one of  
13 the following three state offices chosen by random drawing: Lieutenant Governor, Treasurer and

14 Auditor. All statewide initiative and referenda questions shall also be audited. Races in which  
15 only one candidate's name appears on the ballot shall not be audited. The state secretary may  
16 require the audit of additional offices when anomalous conditions are observed.

17         Primaries that take place less than sixty days before a general election may be exempted  
18 from the audit at the discretion of the state secretary except when winning candidates are  
19 separated by less than 7% of the vote share from the nearest losing candidates.

20         (b) Selection of precincts to be audited. Statewide races shall be selected from a pool  
21 including all precincts in the state. US House races shall be selected from a pool including all  
22 precincts in a single congressional district. The precincts to be audited shall be chosen using a  
23 manual, publicly verifiable, non-computerized random selection process. The time and place of  
24 such random drawing shall be publicly noticed at least ten days in advance of the election. The  
25 drawing shall be open to one observer representing each candidate or question that may be  
26 audited, who shall be positioned where s/he can meaningfully observe the process, and shall be  
27 open to the public. The drawing shall take place as soon as possible after the close of the polls  
28 but after preliminary results have been reported. The cities, towns and precincts selected shall  
29 be announced aloud at the time of the drawing and recorded in the order they are selected. This  
30 information shall be published on the website of the state secretary as soon as possible but not  
31 later than (ten) hours after the drawing.

32         (c) Report of preliminary results prior to random drawing. A written report of  
33 preliminary election tallies, excluding unprocessed ballots such as provisional and late absentee  
34 ballots, must be provided by the municipality to members of the public and to the state secretary  
35 before the selection of the precincts for the audit as provided in paragraph (b.) The preliminary

36 unofficial results shall be immediately transmitted to the state secretary, as provided for in Ch 54  
37 Section 105, who shall calculate from them the preliminary margins of victory in order to  
38 commence the audit and shall make public the margins of victory for auditable races and the  
39 precinct data for all municipalities.

40 (d) Time and place of the audit. Each municipality shall designate in advance the location  
41 where they will conduct an audit should they be selected for an audit in the random drawing.  
42 The audit shall commence no later than 24 hours following the drawing.

43 (e) Audit procedures.

44 Audits shall be conducted publicly in a similar manner to the procedures for counting  
45 ballots in Section 105 of Chapter 54. In addition, audits shall follow these procedures: 1) each  
46 precinct audit will be presided over by two registrars of voters from the two leading political  
47 parties and shall examine such election records as they deem necessary to meaningfully compare  
48 reported vote totals with the vote totals from the audited paper ballots, including but not limited  
49 to spoiled and unused ballots, absentee ballots, and the poll register; 2) observers representing  
50 candidates and ballot questions shall be positioned where they can clearly and comfortably  
51 observe those who count the votes and record the vote totals; 3) upon commencing an audit of its  
52 contents the registrars shall examine the signatures and the seals securing ballot containers  
53 before they are opened and compare them to the signatures and seal numbers recorded after close  
54 of polls in the Precinct Log described in paragraph (f) 3 of this section and determine whether  
55 either have been disturbed and if so shall record this in the Precinct Log; 4) audit personnel shall  
56 count and record the total number of ballots cast at the precinct on Election Day and count the  
57 total votes, blank votes, over-votes and total write-ins for each candidate and the Yes and No

58 votes and blanks for each ballot question on those ballots and record such on official forms  
59 provided by the state secretary; 5) voter intent shall be the standard for counting votes; 6) in  
60 jurisdictions where votes were counted initially by an electronic voting system, an additional  
61 record shall be kept of the number of votes for which voter intent is discernable but ballots were  
62 not marked according to the instructions provided to the voters under Section 48 of Chapter 54;  
63 7) audit personnel shall compare the information on the signed machine tally slips produced at  
64 the precinct at close of polls to the vote totals report submitted to the state secretary as required  
65 in Section 105 of Chapter 54 and shall record discrepancies, if any, on the appropriate audit form  
66 ; 8) all the ballots shall be enclosed in their proper envelopes or containers when they have been  
67 counted and each envelope or container shall be sealed with a secure numbered seal provided  
68 therefore; 9) at least three members of the audit team shall sign and date an affixed seal designed  
69 so that it cannot be removed without damaging the signatures, shall record the name of the city  
70 or town, ward, if any, and precinct thereon.

71 (f) Precinct Log. A log book shall be maintained by hand for each precinct in which shall  
72 be recorded various items pertaining to elections and to their audits, if any. Items to be recorded  
73 therein include: 1) the model and serial numbers of all voting and counting devices used, if any,  
74 2) the numbers printed on the seals used to close containers on election night, 3) the numbers  
75 printed on seals used to close containers after the audit, as set forth in paragraph (e) 3 of this  
76 section, 4) the names and signatures of those signing seals and tally slips on election night, 5) the  
77 names and signatures of those signing seals and tally slips after the audit, 6) any problems or  
78 anomalies encountered during the audit, and 7) any protests made by those conducting the audit  
79 or any citizen or candidate observer present pertaining to the conduct of the audit along with the  
80 names and contact information of such persons.

81           The Log shall be kept in a secure location but shall be available for public inspection  
82 under the supervision of the municipal clerk.

83           (g) Reporting the model of voting devices. Two officials from each precinct shall record  
84 the model and serial number of all voting and counting devices used, if any, in the Precinct Log  
85 and shall sign the log.

86           (h) Cost. The cost of the audits is the responsibility of the Commonwealth of  
87 Massachusetts excluding the salaries of city and town employees for normal hours of work.

88           (i) Sequential selection of precincts to count for different statewide contests.

89           The precincts chosen to audit statewide races or ballot questions shall be recorded in the  
90 order in which they are drawn. The same sequence of randomly selected precincts may be used  
91 for all statewide contests. The minimum number of precincts that must be audited for each  
92 contest will vary according to the contest-wide margin of victory. At the discretion of the state  
93 secretary, several contests may be grouped together and audited according to the highest number  
94 of picks required by any contest within that group.

95           (j) Calculation of the percentage margin of victory for each contest.

96           The margin of victory percentage shall be calculated contest-wide for each audited  
97 contest by dividing the difference between the total numbers of votes received by the two leading  
98 candidates or ballot positions, by the total number of ballots cast in all the precincts in which the  
99 audited contest appeared on the ballot.

100           (k) The method for random selection of precincts to be audited.

101           1. The audit shall follow a protocol whereby, for each audited race or ballot question, the  
102 chance that a precinct will be selected for inclusion in the random sample shall be proportional to  
103 the number of ballots cast therein, provided however, that any precinct picked more than once  
104 need only be audited once for any particular contest. If, prior to the start of the random selection  
105 process, the actual precinct-level turnout data cannot be obtained from all precincts in which an  
106 audited contest appeared on the ballot, then, the numbers of active registered voters in all such  
107 precincts, as of a recent specified date, may be used in lieu thereof, to determine the chance of  
108 each precinct being selected.

109           2. For any audited statewide offices or ballot questions the audit shall be designed and  
110 implemented to provide approximately a 99% chance that a hand recount of 100% of the ballots  
111 will occur whenever such a recount would reverse the preliminary outcome reported by the  
112 voting system.

113           3. For each election held for United States Representative, the audit shall be designed and  
114 implemented to provide approximately a 90% chance that a hand recount of 100% of the ballots  
115 will occur whenever such a recount would reverse the preliminary outcome reported by the  
116 voting system.

117           4. Any procedures implemented by the state secretary to achieve the probability required  
118 by (2) and (3) of this subsection shall assume that within any precinct, at least 25% of the total  
119 votes cast may not have been counted for the same candidate or ballot position for which they  
120 would be counted in a 100% hand-to-eye recount.

121           5. Not less than ten of the precincts in the Commonwealth shall be selected randomly for  
122 audits of statewide contests nor shall less than five precincts in each Congressional District be  
123 selected randomly for audits of US House races.

124           6. A full statewide hand-count shall be conducted for any audited statewide contest with a  
125 margin of victory of one quarter of one per cent or less. A full contest-wide hand-count shall be  
126 conducted for any US House race with a margin of victory of one half of one per cent or less.

127           7. In consultation with persons with documented expertise in statistical protocols for  
128 election auditing, the state secretary shall develop procedures which shall include the use of  
129 mathematical formula/e and a table or tables pursuant to the requirements of paragraphs (2-6) of  
130 this subsection showing the minimum number of precincts to be picked for various margins of  
131 victory, the discrepancies that would trigger further hand counts, the number of such additional  
132 precincts picks that would be needed if further hand counts are required, and the level of  
133 discrepancies that would trigger a full contest-wide hand count of a race. Written standards and  
134 procedures for the audit as well as tables and formulae shall be published ninety days in advance  
135 of an election and shall be subject to initial public comment and periodic review.

136           8) The state secretary, in consultation with the expert or experts referred to in the  
137 preceding paragraph, may substitute another method of random selection if it is at least as  
138 transparent as the one described herein and at least as effective in ensuring that, pursuant to  
139 paragraphs (2) and (3) of this subsection, a 100% hand recount will occur whenever such a  
140 recount would reverse the preliminary outcome reported by the voting system

141           (1) Audit report: Comparison of precinct audit results to original reported results.

142           Following completion of the audit, the registrars of voters shall record in adjacent  
143 columns or rows on official audit report forms provided by the state secretary 1) the unofficial  
144 tallies reported to the state secretary as required by Section 105 of Chapter 54, and 2) the audit  
145 tallies for the same ballots counted in item (1) above, as recorded on the official audit forms  
146 provided for in paragraph (e)(4). 3) The registrars shall then compare these figures for  
147 discrepancies and shall note any in a third adjacent column and 4) shall record in a fourth  
148 adjacent column the number of votes for each race for which voter intent is discernable but that  
149 are not marked by the voter according to the instructions provided to the voters under Section 48  
150 of Chapter 54, that were identified under (e) (6) of this section, in order to assist with an analysis  
151 of discrepancies, if any.

152           (m) Reporting audit results. The registrars shall submit the official audit form or forms  
153 described in paragraph (l) of this section to the state secretary who shall make public the  
154 information in these reports as soon as practicable thereafter in both human- and machine-  
155 readable formats, such as a spreadsheet or comma-separated-value (CVV) file.

156           (n) Comparison of contest-wide audit sample to preliminary contest-wide results. Upon  
157 receipt of the results of the manual audit count from the audited precincts, the state secretary  
158 shall calculate the total number of votes for each candidate and ballot question as recorded in the  
159 manual audit count and shall compare the resulting totals to the sum of the originally reported  
160 preliminary votes submitted under Ch. 54 Sec 105 for each candidate and ballot question in the  
161 audited precincts.

162           (o) Discrepancies that trigger further hand counts. Whenever discrepancies between the  
163 preliminary unofficial results and the audit sample reach a certain critical threshold, further hand



164 counts shall be conducted as prescribed in the tables required by paragraph (k) 7 of this section.  
165 If, after one or more expansions of the audit sample, discrepancies in the expanded audit indicate  
166 a substantial possibility of a different prevailing candidate or outcome, either passage or defeat,  
167 than the outcome originally reported in the initial election count, a complete hand count of all  
168 ballots cast on which the above contest or contests appeared shall be conducted in coordination  
169 with requirements for recounts and results reported within sufficient time to meet state and  
170 federal election deadlines for certification.

171 (p) Vote of record. If there is a discrepancy between a manual count and originally  
172 reported tallies, where the original results were obtained using electronic equipment, the manual  
173 count of the official paper ballots shall be the official vote of record.

174 (q) Archiving audit results. The results of audits and hand-counts, as well as the  
175 corresponding data for the originally reported tallies, shall be made publicly available on a  
176 precinct-by-precinct basis both in hardcopy and in electronic file format, and shall be archived  
177 for at least ten years in order to facilitate research and to provide for continuous improvement of  
178 election procedures.

179 (r) Analysis of discrepancies. Discrepancies between the hand-counted audit and the  
180 original vote tally shall be analyzed to ascertain their cause. The state secretary shall oversee the  
181 analysis and shall publish and make available online the findings within 180 days.

182 (s) Analyzing discrepancies by machine model. When a manual audit count is  
183 conducted, the sum of the votes from each audited precinct for each candidate and ballot  
184 question shall be calculated for each model of electronic or mechanical voting or counting device  
185 and compared to the sum of the originally reported tallies from those machines in the audited

186 precincts. Whenever the difference between the hand-counted audit and the originally reported  
187 tally is more than one percent for any particular machine model, the discrepancy between the  
188 hand-counted audit and the original vote tally shall be analyzed to ascertain the cause of the  
189 discrepancy. The state secretary shall oversee the analysis and shall publish and make available  
190 online the findings within 180 days.

191 (t) Training for audit personnel. Training for audit personnel shall be based on uniform  
192 written and visual training materials issued by the State Secretary.

193 (u) Candidates. Candidates in races that may potentially be audited must be informed of  
194 this fact at least 3 days before the election so that they may have observers present at the audit if  
195 they choose.