

SENATE No. 356

The Commonwealth of Massachusetts

PRESENTED BY:

Anthony W. Petruccelli

To the Honorable Senate and House of Representatives of the Commonwealth of Massachusetts in General Court assembled:

The undersigned legislators and/or citizens respectfully petition for the passage of the accompanying bill:

An Act establishing risk-limiting audits of election results.

PETITION OF:

NAME:	DISTRICT/ADDRESS:
Anthony W. Petruccelli	First Suffolk and Middlesex
Scott P. Brown	Norfolk, Bristol and Middlesex

The Commonwealth of Massachusetts

In the Year Two Thousand and Nine

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 of
5 election night vote totals, both for ballots counted originally by hand and for ballots counted by
6 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 hand-
11 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 from
18 the audit at the discretion of the state secretary except when winning candidates are separated by
19 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 including
21 all precincts in the state. US House races shall be selected from a pool including all precincts in
22 a single congressional district. The precincts to be audited shall be chosen using a manual,
23 publicly verifiable, non-computerized random selection process. The time and place of such
24 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 preliminary
33 election tallies, excluding unprocessed ballots such as provisional and late absentee ballots, must
34 be provided by the municipality to members of the public and to the state secretary before the
35 selection of the precincts for the audit as provided in paragraph (b.) The preliminary unofficial
36 results shall be immediately transmitted to the state secretary, as provided for in Ch 54 Section

37 105, who shall calculate from them the preliminary margins of victory in order to commence the
38 audit and shall make public the margins of victory for auditable races and the precinct data for all
39 municipalities.

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

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

71 (f) Precinct Log. A log book shall be maintained by hand for each precinct in which shall be
72 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 under the

82 supervision of the municipal clerk.

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

86 (h) Cost. The cost of the audits is the responsibility of the Commonwealth of Massachusetts
87 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 order in
90 which they are drawn. The same sequence of randomly selected precincts may be used for all
91 statewide contests. The minimum number of precincts that must be audited for each contest will
92 vary according to the contest-wide margin of victory. At the discretion of the state secretary,
93 several contests may be grouped together and audited according to the highest number of picks
94 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 contest by
97 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 chance
102 that a precinct will be selected for inclusion in the random sample shall be proportional to the

103 number of ballots cast therein, provided however, that any precinct picked more than once need
104 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 by (2)
118 and (3) of this subsection shall assume that within any precinct, at least 25% of the total votes
119 cast may not have been counted for the same candidate or ballot position for which they would
120 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 audits
122 of statewide contests nor shall less than five precincts in each Congressional District be selected
123 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 election
128 auditing, the state secretary shall develop procedures which shall include the use of mathematical
129 formula/e and a table or tables pursuant to the requirements of paragraphs (2-6) of this
130 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 preceding
137 paragraph, may substitute another method of random selection if it is at least as transparent as the
138 one described herein and at least as effective in ensuring that, pursuant to paragraphs (2) and (3)
139 of this subsection, a 100% hand recount will occur whenever such a recount would reverse the
140 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 columns or
143 rows on official audit report forms provided by the state secretary 1) the unofficial tallies
144 reported to the state secretary as required by Section 105 of Chapter 54, and 2) the audit tallies
145 for the same ballots counted in item (1) above, as recorded on the official audit forms provided

146 for in paragraph (e)(4). 3) The registrars shall then compare these figures for discrepancies and
147 shall note any in a third adjacent column and 4) shall record in a fourth adjacent column the
148 number of votes for each race for which voter intent is discernable but that are not marked by the
149 voter according to the instructions provided to the voters under Section 48 of Chapter 54, that
150 were identified under (e) (6) of this section, in order to assist with an analysis of discrepancies, if
151 any.

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

156 (n) Comparison of contest-wide audit sample to preliminary contest-wide results. Upon receipt
157 of the results of the manual audit count from the audited precincts, the state secretary shall
158 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 reported
172 tallies, where the original results were obtained using electronic equipment, the manual count of
173 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 corresponding
175 data for the originally reported tallies, shall be made publicly available on a precinct-by-precinct
176 basis both in hardcopy and in electronic file format, and shall be archived for at least ten years in
177 order to facilitate research and to provide for continuous improvement of election procedures.

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

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

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

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

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