

HR1/ S1 Support, Concern & Suggestions

Position paper by

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Statement: Overall [HR1 /S1](#) is an excellent bill that is long overdue. It is a visionary, once-in-a-generation effort to improve the functionality, fairness, and security of U.S. elections. It will address multiple, systemic, ongoing problems in our elections. We fully support its passage.

We have some specific concerns and comments regarding the [security, accessibility, campaign finance reform, auditing](#), and [election protocol](#) provisions of HR1. They are listed below divided by topic. **Concerns that are very urgent are in red.**

ABOUT SMART Elections: [SMART Elections](#) is a non-partisan [journalism and advocacy group](#) and our [leadership](#) has over 15 years of experience studying election security and election reform. We [collaborate with](#) and are advised by some of the top election security and auditing experts in the country. [We work closely with disability rights advocates](#). We are committed to fairness and equal treatment of all candidates and voters in elections.

Organizations that wish to support these suggestions may sign on using this [Google form](#).

ELECTION SECURITY & ACCESSIBILITY

CONCERNS & SUGGESTIONS

1. **Scanning ballots 14 days prior to Election Day is an invitation to fraud & abuse,** and unnecessary to speed the process of absentee counting. Scanning is the part of the process that goes the quickest. If ballots are processed ahead of Election Day, that will speed up the counting process sufficiently to provide a timely report of election results. (Division A; Voting; Subtitle I—Voting by Mail; Section 307)
 - [Suggested Change -](#) remove 2 words
 - **Level: URGENT**

(1) IN GENERAL.—The State shall begin processing ~~and scanning~~ ballots cast by mail for tabulation at least 14 days prior to the date of the election involved.

Details - According to Candice Hoke, Professor of Law at Cleveland-Marshall College of Law, and an expert on laws governing election technologies.

“The well meant provisions of HR 1 ... could ... undermine election security. Election officials would likely be subject to great pressure from Party officials to run early AB reports & surreptitiously share them ... [The attached [Cleveland State University Center for Election Integrity report excerpt](#)] documents the early printing of absentee ballot reports in violation of State law. ... The report also documents the express promises the Cuyahoga Board of Elections Director (Michael Vu, now in San Diego’s election office) made to a State court and to the SoS that no early tabulations/reports would be generated.”

2. As written, **Unsafe voting machines could be misunderstood to be mandated.**
(Division A; Section 1503)
 - [Suggested Change](#) - new text added
 - **Level: URGENT**
3. Other **improvements are needed to ensure that voters are able to mark their ballots by hand,** and that voters with disabilities are able to vote privately, independently and securely.
(Division A; Section 1502 & 1503)
 - [Suggested Change](#) - new text added
 - Suggested change - change all references from voter-verified to **voter-verifiable**.

Explanation: This is a matter of accuracy. It is not possible to ascertain if a voter did actually verify their votes. Therefore it is more accurate to say that they are offered a voter-verifiable ballot. Other security bills such as the SAFE Act use the term voter-verifiable. Election security and auditing experts we consulted with prefer it. Recommendation is that this change be made throughout the bill.
4. It would be best to **prohibit the use of thermal paper for ballots.** (We have modified our position since this paper was written. We now support durability requirements, rather than a complete ban on thermal paper for ballots).
 - [Suggested Change](#) - new text added to clarify that thermal paper does not meet the definition for durability.
5. It would be best to **prohibit barcodes, QR codes, or any other type of matrix code from being used to record or count votes.** Colorado, a state that is leading on election security, has already banned their use for counting votes. (Division A; Section 1504. Durability and readability requirements for ballots.)

- [Suggested Change](#) - new text added to specifically prohibit the use of barcodes, QR codes and all other codes for use in counting votes.
6. [Require the use of recycled paper for paper ballots.](#)
- [Suggested Change](#) - add 1 word

All paper ballots used in an election for Federal office shall be printed in the United States on **recycled** paper manufactured in the United States.

7. **Make [Digital ballot images](#) public records.**

The photo that is taken of the ballot by all modern scanners must be preserved and made available to the public as a public record. Courts have established that these images are part of the chain of custody of the vote count because it is this image that the scanner counts, not the paper ballot. As such they are a vital element in allowing the public to verify that elections results are correct, or identifying potential problems.

- [Suggested Change](#) - new text added

CAMPAIGN FINANCE

8. **Do not raise the amount needed to qualify for matching funds for presidential candidates.**

(Division B—Campaign Finance; SEC. 5202. ELIGIBILITY REQUIREMENTS FOR MATCHING PAYMENTS.; Pages: 609)

- Suggested Change: leave the law as is. Strike this from bill:

~~(1) by striking “\$5,000” and inserting “\$25,000”~~

Level: URGENT

Explanation: Candidates without big donors are already struggling to meet current requirements for matching funds. Raising the threshold for qualifying funds will unnecessarily deter 3rd parties, candidates without large donors, and those who are not independently wealthy.

9. **Reduce the current levels for matching funds for Congressional races from \$50,000 to \$5,000. (Add provision)**

Explanation: This will help 3rd parties, candidates without large donors, and those who are not independently wealthy qualify for matching funds in Congressional races.

10. **Do not raise the amount that the national political committees can give to the presidential candidates from \$5,000 to \$100,000,000 each.**

(Division B—Campaign Finance; SEC. 5214. INCREASE IN LIMIT ON COORDINATED PARTY EXPENDITURES; Pages: 627)

- Suggested Change: leave the law as is, or raise the amount to allow for inflation. Strike this from bill:

~~(2)(A) The national committee of a political party may not make any expenditure in connection with the general election campaign of any candidate for President of the United States who is affiliated with such party which exceeds \$100,000,000.~~

Level: URGENT

Explanation: Raising the limit on donations from each national committee from its [current level of \\$5,000](#) to \$100,000,000 will vastly increase the ability of large donors who contribute to these committees to influence campaigns. **It is a huge loophole in the overall intent of the bill to curb the influence of big money.**

11. Do not set matching funds at a 6:1 ratio.

(Division B—Campaign Finance; SEC. 5214. INCREASE IN LIMIT ON COORDINATED PARTY EXPENDITURES; Pages: 627)

- Suggested Change: Give equal grants to qualified candidates in keeping with the existing presidential general election grants.

Explanation: 6:1 matching funds will increase the disparity between candidates, turning small differences in fundraising into huge differences.

12. Continue to limit how much campaigns may spend if they accept public funding, but raise it to a more realistic amount.

Explanation: If the limits on how much campaigns can spend are eliminated, then public funding simply adds more money to the already over-heated private spending system. One of the key goals of public funding of campaigns is to even the playing field by limiting everyone to the same total expenditures. Without limits on spending we have lost this benefit.

AUDITING

We are not proposing specific text at this time for these provisions. Many of the following suggestions could be implemented by changing or adding a few words, or a line of text to existing provisions.

These notes primarily apply to, or could be added to:

PART 9—GRANTS FOR CONDUCTING RISK-LIMITING AUDITS OF RESULTS OF ELECTIONS; Page 366

CONCERNS & SUGGESTIONS

13. All federal races must be audited at every election.
14. The risk limit in risk-limiting audits must be capped at 5%
15. Races to audit must be chosen randomly and publicly, not by individuals such as the Secretary of State or other election officials.
16. Races to audit must be chosen after all results are published.
17. Require compliance audits
18. Full hand-count audits must be done for all all statewide elections in which the margin of victory for a candidate or ballot proposition is 0.2% of all votes cast in the contest; and in all other elections in which the margin of victory for a candidate or ballot proposition is 0.5% of all votes cast in the contest; (Currently NY law.)
19. In addition to conducting a risk-limiting audit on all federal races, one precinct per jurisdiction must be chosen randomly and publicly for a 100% public hand-count audit of all races. This procedure is currently in practice in Michigan.
20. As written in HR1, the public is not given enough information to ensure that the risk-limiting audit did not stop prematurely.

If the audit is supposed to justify public trust, the public needs to be able to check the audit. What the public needs access to depends on how the audit is conducted. But, according to Philip Stark, Professor of Statistics at U.C. Berkeley, this requires that the public have evidence of how the risk was calculated, as well as (at a minimum) that:

- all ballots were accounted for
- that the sample was drawn as claimed
- that the seed is what it was supposed to be
- that the correct ballots were selected and retrieved
- that they were interpreted correctly
- that they entered the risk calculation correctly,

21. Election officials must not be responsible for overseeing and/or approving audits of their own elections. [Auditing best practices](#) clearly state:

- “Neither the policy and regulation setting for the audit, nor the authority to judge whether an audit has satisfied those regulations, shall be solely in the hands of any entity directly involved with the tabulation of the ballots or the examination of ballots during the audit.”

Local election officials can help provide documents for the audit, or assist with the process, but audit best practices require independent management and oversight.

WAIT TIMES

22. We strongly support the provision “that no individual will be required to wait longer than 30 minutes to cast a ballot at the polling place.”

(Division A; Voting; SEC. 310. ENSURING EQUITABLE AND EFFICIENT OPERATION OF POLLING PLACES)

- Suggested Change: It could be enhanced with an addition that line monitors are required to ensure that voters with disabilities, elderly voters, or anyone who feels physically unable to wait is given the opportunity to vote immediately.



See Section Below for Details

DETAILED PROPOSALS

On the above concerns & suggestions for ELECTION SECURITY & ACCESSIBILITY

1. Scanning Before Election Day - A Bad Idea

(Division A—Voting; Subtitle I—Voting by Mail; SEC. 307. PROMOTING ABILITY OF VOTERS TO VOTE BY MAIL; Pages: 183 - 184)

CONCERN: Scanning ballots 14 days prior to Election Day is an invitation to fraud & abuse, and unnecessary to speed the process of absentee counting.

Level: URGENT

SOLUTION: cut 2 words from this sentence: The State shall begin processing ~~and-scanning~~ ballots cast by mail for tabulation at least 14 days prior to the date of the election involved.

Explanation:

According to computer science and database systems experts statements in [court documents](#), **vote counts become accessible when scanning and tally processes are started.**

Some election officials may be tempted to look at those counts, or others could pay for access. If election officials or others look at the counts the tools exist for them to change the results ahead of time before they are announced. Votes can easily be changed within cast voter records, which are like spreadsheets. Ballots & media drives with votes can be “lost”. Voters can be purged from the rolls. It is best not to create scenarios that invite bad behavior.

In some states like NY, election officials are notoriously partisan, and appointments and staffing are crony-based. The election commissioners are often the chairs of the Dem & Rep parties. Will they be able to resist the opportunity to look at the results? Some may. Some may not.

Scanning is the part of the process that goes the quickest. If ballots are processed ahead of Election Day, that will speed up the counting process sufficiently for the prompt reporting of results.

Processing ballots can include signature verification, opening envelopes, removing ballots, duplicating any damaged ballots, preparing the ballots to be machine read, processing write-in votes so that they can be tallied by the machine, and other labor-intensive activities. These are OK, up to, but excluding the actual scanning/counting of votes until after the closing of polls.

New York is a state that benefits from not scanning ahead of time. New York allows anyone who requests an absentee ballot, or even votes absentee, to still go to the polls on Election Day and vote. Then their election day vote overrides the absentee ballot vote. If the voter sent their ballot in, but it was never received, or they requested an absentee ballot, but it never arrived. They can still vote. If the ballots are already scanned, this option will be removed. More voters will be disenfranchised, and may wind up voting via affidavit or provisional ballots.

SUGGESTED CHANGES Section 307:

(Division A—Voting; Subtitle I—Voting by Mail; SEC. 307. PROMOTING ABILITY OF VOTERS TO VOTE BY MAIL; Pages: 183 - 184)

(1) IN GENERAL.—The State shall begin processing ~~and scanning~~ ballots cast by mail for tabulation at least 14 days prior to the date of the election involved.

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2. & 3. Don't Mandate Risky Voting Machines

(Division A—Voting; Subtitle F—SEC 1502 & 1503; Promoting Accuracy, Integrity, and Security Through Voter-Verified Permanent Paper Ballot; Pages: 148 - 154)

CONCERN: This section as written could all too easily be misunderstood as mandating that every jurisdiction in the country purchase a very risky type of voting machine generally called a "hybrid".

Level: **URGENT**

Explanation:

Security experts don't like hybrid voting systems because they combine two functions: printing a ballot and scanning a ballot into one operation, creating a shared paper path that the ballot or "summary card" passes through when being printed and scanned. This creates a **very serious security issue** where the machine can change votes on the paper ballots if it's hacked. Here is an [easy to read PDF about some of the dangers of hybrid voting](#) and why security experts do not recommend them.

SEC. 1503. ACCESSIBILITY AND BALLOT VERIFICATION FOR INDIVIDUALS WITH DISABILITIES.

Requires the use of (in every polling location) a ballot-marking device that:
“(II) allows the voter to privately and independently verify and cast the permanent paper ballot without requiring the voter to manually handle the paper ballot.”

*On background: **This is a necessary provision.** There are voters, who may be paralyzed from the shoulders down, for example, and cannot pick up a ballot. They need a way to vote. The way this can be addressed is that the ballot is approved by the voter and then scanned and deposited directly into the ballot box.*

- ***Currently the only systems designed to do this are the hybrid voting machines that are considered high risk.***
- ***The bill as written could all too easily be misunderstood as mandating that every jurisdiction purchase a high-risk voting system.***
- *Furthermore, these systems tend to get purchased for use by ALL voters. So the bill is creating a massive loophole in the security it is attempting to establish in 1502.*
- *Also, the two sections (1502 & 1503) contradict each other, because 1502 requires nontabulating ballot-marking devices, but all currently available systems that*

comply with 1503, as written, are tabulating systems.

Suggested changes to 1502 & 1503 would address the security issue above and also:

- Ensure that voters have the option to mark their ballots by hand in the polling place.
- Ensure that voters with disabilities do not have ballots that look different from other ballots, possibly exposing how they vote.
- Ensures that a security loophole called “permission to cheat” is closed. This loophole allows the voting machine to know whether the voter will review their ballot before the ballot is printed.
- Provides definitions of certain terms like “cast by the voter” to prevent voting machine vendors from finding ways around these provisions.
- Ensures that the option to mark a ballot by hand includes in-person voting, and that those ballots are counted as regular, in-person ballots.
- Substitute the phrase “voter-verifiable” for voter-verified. This is a matter of accuracy. It is not possible to ascertain if a voter did actually verify their votes. Therefore it is more accurate to say that they are offered a voter-verifiable ballot. Other security bills such as the SAFE Act use the term voter-verifiable. Election security and auditing experts we consulted with prefer it. Recommendation is that this change be made throughout the bill.

SUGGESTED CHANGES 1502 / 1503:

(Division A—Voting; Subtitle F—Promoting Accuracy, Integrity, and Security Through Voter-Verifiable Permanent Paper Ballot; Pages: 148 - 154)

Level: URGENT

SEC. 1502. PAPER BALLOT AND MANUAL COUNTING REQUIREMENTS.

(a) In General.—Section 301(a)(2) of the Help America Vote Act of 2002 ([52 U.S.C. 21081\(a\)\(2\)](#)) is amended to read as follows:

“(2) PAPER BALLOT REQUIREMENT.—

“(A) VOTER-VERIFIABLE PAPER BALLOTS.—

“(i) PAPER BALLOT REQUIREMENT.— (I) The voting system shall require the use of an individual, durable, voter-verifiable paper ballot of the voter’s vote that shall be marked and made available for inspection and verification by the voter before the voter’s vote is cast and counted, and which shall be counted by hand or read by an optical character recognition device or other counting device. For purposes of this subclause, the term ‘individual, durable,

voter-**verifiable** paper ballot' means a paper ballot marked by the voter by hand or a paper ballot marked through the use of a nontabulating ballot marking device or system, so long as the voter shall have the option, in each polling place if in-person voting is offered by the district, to mark by hand his or her ballot a ballot, pre-printed with all contests and candidates. That hand-marked paper ballot shall be counted as a standard in-person ballot, as long as the voter is correctly registered.

This voting machine must be constructed so that, after the paper ballot is cast by the voter, the voting machine or system never passes the cast ballot under a printer that can print votes onto the ballot, including as a result of unauthorized, malicious and/or faulty software and/or firmware. For the purposes of this legislation the phrase "cast by the voter" means the moment after the last time the voter has had the opportunity to verify their choices on the ballot and sends it to be counted as intended.

SEC. 1503. ACCESSIBILITY AND BALLOT VERIFICATION FOR INDIVIDUALS WITH DISABILITIES.

(a) In General.—Section 301(a)(3)(B) of the Help America Vote Act of 2002 ([52 U.S.C. 21081\(a\)\(3\)\(B\)](#)) is amended to read as follows:

“(B) (i) ensure that individuals with disabilities and others are given an equivalent opportunity to vote, including with privacy and independence, in a manner that produces a voter-**verifiable** paper ballot as for other voters; **Ballots from ballot-marking devices and other sources must look alike at each polling location.**

“(ii) satisfy the requirement of subparagraph (A) through the use of at least one voting system equipped for individuals with disabilities, including nonvisual and enhanced visual accessibility for the blind and visually impaired, and nonmanual and enhanced manual accessibility for the mobility and dexterity impaired, at each polling place; and

“(iii) meet the requirements of subparagraph (A) and paragraph (2)(A) by using a system that—

“(I) allows the voter to privately and independently verify the permanent paper ballot through the presentation, in accessible form, of the printed or marked vote selections from the same printed or marked information that would be used for any vote counting or auditing. **The assistive**

technology that allows voters to review the printout must be separate and unable to be controlled by the device that prints the selections; and it must be a voting system that

“(II) allows the voter to privately and independently verify and cast the permanent paper ballot without requiring the voter to manually handle the paper ballot.” In the sequence of actions during the voting session, the voting machine must print the ballot before the voter is asked whether they'd like to deposit the ballot without touching it. This voting machine must be nontabulating and be constructed so that, after the paper ballot is cast by the voter, the voting machine or system never passes the cast ballot under a printer that can print votes onto the ballot, including as a result of unauthorized, malicious and/or faulty software and/or firmware. For the purposes of this legislation the phrase “cast by the voter” means the moment after the last time the voter has had the opportunity to verify their choices on the ballot and sends it to be counted as intended.

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4. Don't Use Thermal Paper for Ballots

(Division A—Voting; SEC. 1504. 7 (A) DURABILITY REQUIREMENTS FOR PAPER BALLOTS
Page 158:)

(We have modified our position since this paper was written. We now support durability requirements, rather than a complete ban on thermal paper for ballots).

CONCERN: Thermal paper is not durable enough to last the 22 month retention period. But some voting machine vendors are claiming that it is.

Explanation:

Some voting machines currently, such as the ExpressVote XL made by ES&S print “ballots” known as “summary cards”. These summary cards are printed on thermal paper.

Voting Machine Vendor ES&S claims that their thermal paper summary cards can last for 7 years. But expert testimony and research contradict this. So it would be best to specify that thermal paper is not allowed.

[Research](#) on thermal paper indicates that, “Although the initial images were good, they faded after a few months in storage.” SMART Elections corresponded with data technology expert Mark Bruley on this issue, He says,

“Due to the strong tendency of thermal printer text and images to fade over time, I do not believe that thermal paper ballots are a reliable means of physically memorializing votes for a required duration of at least 22 months, or of even 6 months.

I offer this opinion as a certified clinical engineer and biomedical engineer who, for more than four decades at ECRI, has investigated scores of ... technologies that relied on thermal printers to record critical ... data. Our ... investigations have seen ... data images fade to the point of being unreadable even within six months.”

SUGGESTED CHANGES Section 1504 7A

(ii) DEFINITION.—For purposes of this Act, paper is ‘durable’ if it is capable of withstanding multiple counts and recounts by hand without compromising the fundamental integrity of the ballots, and capable of retaining the information marked or printed on them for the full duration of a retention and preservation period of 22 months. Thermal paper does not meet this definition.

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5. Don’t Use Bar or QR codes to Count Votes

(Division A—Voting; SEC. 1504. 7 (B) READABILITY REQUIREMENTS FOR PAPER BALLOTS MARKED BY BALLOT MARKING DEVICE; Page 159:)

CONCERN: Barcodes and QR codes are currently being used by some voting systems to count votes. Barcodes and QR codes as well as the equipment that reads these codes are easy to hack. Using these codes to count votes adds an additional unnecessary attack vector to our election process. The bill will be stronger if it explicitly bans the use of these codes for counting votes.

Explanation:

The public is aware that the information contained in these codes can be changed as easily as the price on a bar of soap can change from one day to the next. So using these codes to count votes decreases public confidence considerably. Many security experts recommend that they not be used to count votes.

- [The barcode-based setup “makes a mockery of the notion that the ballot is ‘voter-verifiable.’”](#) said Duncan Buell, a computer science professor at the University of South Carolina, because “*what the voter verifies is not what is tallied.*” - Politico Magazine

[Colorado, a state that is leading on election security, has already banned their use for counting votes.](#)

SUGGESTED CHANGES Section 1504 8A

(B) READABILITY REQUIREMENTS FOR PAPER BALLOTS MARKED BY BALLOT MARKING DEVICE.—All **voter-verifiable** paper ballots completed by the voter ~~through the use of a ballot marking device~~ shall be clearly readable by the voter without assistance (other than eyeglasses or other personal vision enhancing devices) and by an optical character recognition device or other device equipped for individuals with disabilities. **The use of barcodes, QR codes, or any kind of vote recording code that cannot be verified by the voter without using a code-reading device, is prohibited for use in counting votes.**

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6. Use Recycled Paper for Ballots

(Division A—Voting; SEC. 1506 PAPER BALLOT PRINTING REQUIREMENTS, (8) PRINTING REQUIREMENTS FOR BALLOTS; Page 160)

CONCERN: Climate Change is an existential threat. We need to do everything we can to reduce our carbon imprint. Using recycled ballots is an easy way to save trees and help us move toward carbon-neutral elections.

Explanation:

It's critical to use paper ballots to improve our security. But using recycled paper can reduce our carbon imprint.

SUGGESTED CHANGE SEC. 1506 (8) PRINTING REQUIREMENTS FOR BALLOTS.

All paper ballots used in an election for Federal office shall be printed in the United States on **recycled** paper manufactured in the United States.

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7. Make Digital Ballot Images Available

(Division A—Voting; SEC. 1506 PAPER BALLOT PRINTING REQUIREMENTS, (9) (Add Section) DIGITAL BALLOT IMAGES REQUIRED AS PUBLIC RECORDS; Page 160)

CONCERN: We need more public oversight of elections to increase accuracy and increase public confidence. One step we can take is to make digital ballot images public records. A digital ballot image is the photo that is taken of the ballot by all modern scanners. It must be preserved and made available securely to the public as a public record.

Explanation:

Courts have established that these images are part of the chain of custody of the vote count because it is this image that the scanner counts, not the paper ballot. As such digital ballot images are a vital element in allowing the public to verify that election results are correct, or identifying potential problems.

Experts agree that digital ballot images are not appropriate for use in official audits, but they can assist in public oversight and improve public confidence in elections, a very important goal.

SUGGESTED CHANGES SEC.1506 (9) (Add Section) DIGITAL BALLOT IMAGES REQUIRED AS PUBLIC RECORDS.

(Add Section 9) Digital ballot images that are created by optical scanners or other voting machines will be available to the public as a public record within 5 business days of election results being published. Strong chain of custody procedures, comparable to those used for ballots and media with votes will be used to retain the images securely. Security protocols, such as creating a security hash for the files, will be implemented to ensure that the digital ballot images have not been altered.

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