

# Explanation of 2022 Changes to S309A | A1115A

Prepared by Lulu Friesdat, Founder SMART Legislation  
February 11, 2022

## Proposed name: The Protect Our Ballots Act

There is a lot at stake with S309A/A1115A. If passed into law, it will be groundbreaking legislation protecting New York voters and candidates from voting machines that security experts say pose “extraordinary risks for the voters of New York.” It will also be a seminal bill, that can serve as a template for similar legislation, federally and in other states. If it is passed with technical problems, however, it could cause confusion, embarrassment, or even legal issues. For that reason, we encourage you to adopt the new [2022\\_0203B version submitted here](#), as is, or to allow any further changes to be reviewed by the team of experts we have assembled and who have vetted this new 2022 version with meticulous care. Thank you for taking the time to consider these important issues carefully.

## Part 1 - Problems with 2021 Draft of S309A/A1115A

### ! Inability to pass the New York Assembly

- Although the bill passed the Senate last session, it was unable to pass the Assembly. One significant factor is that the State Board of Elections had reservations about parts of the bill. The new 2022 version strives to overcome those reservations.

### ! Important voter rights/security provision left out

- In the S309A/A1115A 2021 draft, one of the most important provisions of the bill – a requirement that both hand-marked paper ballots and nontabulating ballot-marking devices be available in all polling places--was left out during the central staff review. The new 2022 version adds this back in.

### ! Technically problematic

- ***The S309A/A1115A 2021 draft has serious technical failings***, including language that could possibly make scanners illegal. Here are the technical concerns with that draft:
  - e. **REQUIRE THE USE OF AN INDIVIDUAL, DURABLE, VOTER-VERIFIABLE PAPER BALLOT OF THE VOTER'S VOTE THAT SHALL BE PRIVATELY AND INDEPENDENTLY MARKED IN THE POLLING PLACE**
    - ! This text, as drafted, seems to require voting machines to count only ballots marked in the polling place, banning central-count scanners for absentee ballots. This provision has been re-written in the new 2022 version.
  - j. **INCLUDING STORING THE BALLOTS CAST IN RANDOM ORDER**
    - ! “Random” is a mathematical term, and “storing ballots in a mathematically random order” may be close to physically impossible. Experts advised this term not be used. It has been removed in the new 2022 version.
  - w. **NOT UTILIZE, FOR THE PROCESS OF VOTE CASTING AND CANVASSING, A BAR CODE, MATRIX CODE OR ANY KIND OF RECORDING CODE**

- ! Security experts and the NY State Board of Elections are concerned that the S309A/A1115A 2021 draft could ban ballot scanners. Ballot scanners do use a “code” to tabulate votes. Scanners use barcodes or timing marks on the side of the paper ballot to assess the location of the filled-in bubbles. Then the voter's choice is stored digitally on the computer in zeros and ones.
- ! The new 2022 version prevents barcodes or QR codes from being used **only** on “**A BALLOT**.” This helps ensure that voters can verify their choices when they examine their ballot but does not prohibit our current system of counting votes.
- **x. PERMIT THE COUNTING OF BALLOTS BY HAND OR PERMIT THE READING OF BALLOTS WITH AN OPTICAL CHARACTER RECOGNITION DEVICE**
  - Most current scanners, including the ones certified in New York, do *not* use optical character recognition (OCR) to count votes. The provision is confusing and potentially dangerous. It seems to imply by the word “or” that if a ballot can be read by OCR, it does not have to be able to be counted by hand. It has been removed in the new 2022 version.

## Part 2 - Top Tier Expert Team Assembled

**A Team of Computer Science, Auditing and Legal Experts was assembled to review, re-draft and carefully vet the Proposed 2022 Version of S309A/A1115A**

- **Douglas W. Jones, Dept. of Computer Science, University of Iowa, Retired\***
  - Professor Jones served on the Election Assistance Commission’s Technical Guidelines Development Committee for four years. He is a co-author of *Broken Ballots*, a seminal work on U.S. election security. He was deeply involved in crafting New York's current election law during what he describes as “a long and productive correspondence between Professor Jones and NY State Board of Elections Co-Chair Douglas Kellner.”
- ! **Philip Stark, Professor of Statistics, University of California\***
  - Professor Stark is one of the leading experts on post-election audits in the United States. He is the inventor of the modern concept of a risk-limiting election audit.
- ! **David Siffert, Adjunct Professor of Clinical Law, NYU School of Law\***
  - Professor Siffert is Director of Research and Projects at the Center on Civil Justice, New York University School of Law.

*\*Affiliations are listed for identification only*

Together these experts worked to:

- repair technical problems with the bill
- make sure that disability rights are protected
- ensure a high level of security requirements
- make the bill easier to understand

- address SBOE concerns, so that the bill can pass

### **The New 2022 Version Was Also Vetted By:**

- ! Vanessa Merton, Professor of Law; Pace University
- ! Leading members of election security organizations
- ! Leading members of multiple disability rights groups
- ! Leading members of multiple grassroots pro-democracy groups

### **Letter of Support for the new 2022 Version of S309A/A1115A**

Professor Jones has written a letter of support for the new 2022 version of S309/A1115A, which Professors Stark, Siffert, and many other nationally recognized election security experts have signed, including, **Princeton Computer Science Professor Andrew Appel**.

The letter has also been signed by:

- ! Grassroots pro-democracy groups
- ! A leading member of the Let New York Vote Coalition: **Stand Up America**

Many more will likely sign on, so the [Google doc](#) is the most current record of support.

### **Part 4 - Improvements to the 2022 Version of S309A/A1115A**

#### **Overview of Improvements**

- ! **Reorganized for clarity**
  - Provisions were put in the order that they occur in the current statutes
  - Some sections were moved to more appropriate sections of the law.
- ! **Rephrased to make it easier to understand**
- ! **Definitions of key terms were added for legal precision**

#### **Section by Section Review of Improvements**

##### **Section 1:**

##### **28. Durable Paper**

- ! The requirement for durable paper for ballots was put in [Section 7-104](#), the section of New York law that lists requirements for ballots.
- ! Much of the definition for “durable paper” is taken from the federal [Freedom to Vote Act](#) (p. 328).
- ! The requirement that ballots be able to withstand both multiple hand *and machine*

recounts was added because, per Professor Jones, research is being done that could require ballots to be *run through a scanner three times to verify a vote count*.

- (excerpt) **"WITHSTANDING MULTIPLE COUNTS AND RECOUNTS BY HAND OR MACHINE..."**

- ! Although thermal paper is not technically banned, thermal paper as we know it is unlikely to be durable enough to qualify, and so, in effect, it would not be permissible.

## **29. No Summary Cards Instead of Ballots**

**29. A BALLOT PRINTED BY A BALLOT MARKING DEVICE SHALL COMPLY WITH ALL THE PROVISIONS OF THIS TITLE, AND ALL SELECTIONS MADE BY THE VOTER SHALL BE CLEARLY MARKED.**

- ! The purpose of this provision, is to make it absolutely clear that summary cards that print only the choices and not the rest of the ballot are prohibited in New York. Summary cards can make it harder for voters to notice if one or more of their choices is changed or left off the ballot.
- ! Summary cards are already prohibited for New York ballots by statute:
  - **7–102. Ballot; placing names and ballot proposals thereon**
    1. The names of all candidates and the form of submission of all duly certified ballot proposals shall be printed upon the official ballot ...
- ! However, some vendors call the electronic screen "the ballot", and may try to say that if all the candidates and proposals are on the screen, they do not need to be printed on the paper that the voter reviews. Many of these vendors print what's called a "summary card" that has only the voter's selections, out of context of the other candidates and proposals.
- ! By requiring that **"A BALLOT PRINTED BY A BALLOT MARKING DEVICE SHALL COMPLY WITH ALL THE PROVISIONS OF THIS TITLE"** we ensure that all ballots, whether hand-marked paper ballots, or ballots printed by a ballot-marking device will have all the candidates and proposals on the printed ballot for the voter to review
- ! Some ballot-marking devices print choices in a block of text that is hard to read and verify. This provision ensures that the voters selections will be clearly marked.

## **Section 2. Giving Counties Flexibility**

As counties transition from current hybrid voting machines to nontabulating ballot-marking-devices, they may need to work with multiple vendors. The restriction that no more than two types of voting machines or systems may be used by any local board of elections at a single election was removed from [Section 7-200](#).

**~~[No more than two types of voting machines or systems may be used by any local board of elections at a single election.]~~**

### **Section 3. (Previously Section 1)**

There are a few significant changes in the new 2022 version.

#### **b. Eliminating Direct Recording Electronic Voting Machines. (DREs)**

In the new 2022 version, more of b. is removed from the original statute.

b. permit a voter to vote for any person for any office, whether or not nominated as a candidate by any party or independent body [~~without the ballot, or any part thereof, being removed from the machine at any time~~];

- ! This provision, as written, seems to require that all voting machines be either Direct Record Electronic (DRE) or all in one ballot-marking devices.
- ! Since they were first developed, DRE voting machines and all-in-one BMDs have faced strong objections because of the risk that corrupt software could alter votes without leaving any evidence of such alteration.
- ! These type of voting machines are being banned with this bill, and the two options of hand-marked paper ballots and non-tabulating ballot-marking devices are being established as the New York standards. Therefore, this phrase needs to be removed.

#### **e. Individual Voter-Verifiable Paper Ballots & Definitions**

This paragraph was re-organized for clarity and simplicity and for legal reasons.

- **Language that could have banned central-count scanners was removed.** (See "e" in the "technically problematic" section on the first page of this document for a detailed explanation.)
- **Individual, voter-verifiable paper ballots are required and are defined as being either hand-marked paper ballots or paper ballots marked on a nontabulating ballot-marking-device or system.** We believe this language was deleted from the S309A/A1115A 2021 draft by Central staff, who may have thought it redundant. It is not.
- Some of the language is taken from the federal [Freedom to Vote Act](#). (p. 318)
- A separate section (5) later in the bill requires both hand-marked paper ballots and nontabulating ballot-marking devices at every polling location. See more information about Section 5 below.
- The language was crafted carefully, in consultation with disability rights advocates, to give voters with disabilities the opportunity to vote privately and independently, as well as securely, on physical paper ballots.
- The definition of a nontabulating ballot-marking device was crafted carefully to allow for certain options and prevent others:

**FOR THE PURPOSES OF THIS TITLE, A NONTABULATING BALLOT MARKING DEVICE IS A BALLOT MARKING DEVICE THAT DOES NOT TABULATE OR**

**TRANSMIT VOTES OR RETAIN ANY RECORD OF A VOTER'S SELECTIONS, OTHER THAN THE ORIGINAL PAPER BALLOT, AFTER THE VOTER HAS FINISHED MARKING THE PAPER BALLOT AND USING THE DEVICE TO REVIEW SELECTIONS;**

- This definition prevents nontabulating ballot-marking devices from tabulating or transmitting votes, or from retaining any record of the vote, except for the original paper ballot.
- If votes are transmitted from the ballot-marking device they could be tabulated, so transmitting of votes from a nontabulating ballot-marking device is banned.
- If votes are retained, all elements to tabulate are available. So, to be effective in preventing ballot-marking devices from tabulating, they must not be able to retain votes.
  - The exception here is that the machine may retain the original physical paper ballot (in a secure dropbox for example) so that a blind or manually impaired voter does not have to handle the ballot.
  - The ability to vote without handling the ballot is important for voters with certain manual and visual disabilities. The following text is not included in S309A/A1115A, but it is in current proposed federal legislation (the Freedom to Vote Act). It is good to allow for that eventuality, should the Freedom to Vote Act pass at a later date.
    - ! "... allowing the voter to privately and independently verify and cast the permanent paper ballot without requiring the voter to manually handle the paper ballot;" [Freedom to Vote Act](#). (p. 324)
- A line was added to clarify that when voters spoil their ballots, whether they are marking a hand-marked paper ballot or whether they print a mis-marked ballot on a ballot-marking device, they *must* ask for a new ballot, and cannot alter their incorrect ballot.

**"INCLUDING BY OFFERING THE VOTER A NEW PAPER BALLOT AS MANY TIMES AS IS ALLOWED BY STATUTE OR REGULATION."**

- § 8-312-1 of New York law allows for this three times.

**j. Ensure Voters' Choices Are Private, But Procedures Are Not Cumbersome Or Impossible For Election Officials**

This paragraph was modified to ensure that ballots are stored in a way that preserves voter privacy while avoiding the technical landmine of requiring that ballots be stored in a random order. (See "j" in the "technically problematic" section on the first page of this document for a detailed explanation.)

! Removed: **"STORING THE BALLOTS CAST IN RANDOM ORDER"**

Members of the New York State Board of Elections, in dialogue with various stakeholders, stated that they believe this provision in the S309A/A1115A 2021 draft is unnecessary and cumbersome. Their argument is that ballot choices are not

identifiable, because generally voters do not vote in the exact order they sign in, and there also may be multiple voting machines at a location to further mix up the order.

Professor Jones did not trust the above procedures to guarantee a secret ballot for voters. He suggests developing close-of-poll procedures, instructing poll workers to remove ballots in handfuls, not in one pile, and have them cut the deck of ballots before they're sealed up for transport to the election office. These type of procedures can be written into regulation, or written into a separate bill and do not need to be included at this time.

! Removed: **"NOT SEQUENTIALLY OR CHRONOLOGICALLY AS CAST BY VOTERS"**

s. & t. **Unchanged From The S309A/A1115A 2021 Draft**

u. **Legacy Provision Moved.**

This paragraph is unchanged from the S309A/A1115A 2021 draft, except that the provision regarding the use of voting machines that have already been purchased is moved to subdivision 6 of the bill.

v. **Improved Security & Accessibility. Legacy Provision Moved.**

This paragraph is changed to make nontabulating ballot-marking devices more secure, while protecting accessibility.

- ! In the S309A/A1115A 2021 draft, only tabulating was banned in nontabulating ballot-marking devices. In the new 2022 version, transmitting votes or retaining any record of the vote except for the original paper ballot are also banned in ballot-marking devices. *(See the definition of nontabulating ballot-marking devices in "e" of this document, for a detailed explanation.)*
- ! The new 2022 version does not ban scanning because any ballot-marking device that prints on pre-printed ballots will need a scanner to verify the orientation and style of the ballot a voter inserts, and to check that its marks were actually printed in the bubbles on the ballot. (The 2021 draft did not ban scanning in non-tabulating ballot-marking devices, but at least one version since then, did. That phrase has now been removed.)
- ! The legacy provision regarding the use of voting machines that have already been purchased is moved to subdivision 6 of the bill.

**v. BE CONSTRUCTED SO THE CONFIGURATION OR FUNCTIONALITY OF A VOTING MACHINE OR SYSTEM DOES NOT INCLUDE, WITHIN THE SAME PHYSICAL DEVICE, BOTH (i) BALLOT MARKING AND (ii) TABULATING OR TRANSMITTING A VOTER'S SELECTIONS AT ANY TIME OR RETAINING ANY RECORD OF A VOTER'S SELECTIONS, OTHER THAN THE ORIGINAL PAPER BALLOT, AFTER THE VOTER HAS FINISHED MARKING THE PAPER BALLOT AND USING THE DEVICE TO REVIEW SELECTIONS; AND**

w. **Ensure Scanners Are Legally Allowed**

This is a very important change. Security experts and the New York State Board of Elections are concerned that the S309A/A1115A 2021 draft could ban scanners, since scanners do use a "code" of sorts to tabulate votes. (See w. in the "technically problematic" section on the first page of this document for a detailed explanation.)

- ! A code-reading device is also defined in the new 2022 version.

**w. NOT ENCODE VOTES ON A BALLOT OR SUMMARY CARD, WHETHER AS A BARCODE, QR CODE OR ANY OTHER KIND OF RECORDING CODE THAT CANNOT BE VERIFIED BY THE VOTER WITHOUT USING A CODE-READING DEVICE. FOR THE PURPOSES OF THIS PARAGRAPH, A "CODE-READING DEVICE" IS A DEVICE THAT READS AND TRANSLATES CODED MARKS LIKE QR CODES OR BARCODES INTO LANGUAGE THAT CAN BE UNDERSTOOD WITHOUT ANY KIND OF DEVICE.**

x. **REMOVED**

(See "x" in the "technically problematic" section on the first page of this document for a detailed explanation.)

**Section 4 (Previously Section 2)**

**Unchanged from the S309A/A1115A 2021 Draft**

This paragraph lists what voting machines and systems are allowed by New York Statute (under this bill). It is unchanged from the S309A/A1115A 2021 draft.

**Section 5. Mandate that Hand-marked Paper Ballots & Nontabulating Ballot-marking Devices Are Available In Every Polling Place.**

This new section in the 2022 version requires that:

- ! Both hand-marked paper ballots and nontabulating ballot-marking devices must be available for all voters at every polling place.
  - o This is critically important. Without this provision, counties will be able to use the absentee voting process to say that hand-marked paper ballots are being offered and can use all-in-one ballot-marking devices for all voters at polling places.
  - o Security experts do not believe all-in-one ballot-marking devices are reliable for all voters, because **most voters do not check their computer printouts for accuracy**. So, using all-in-one ballot-marking devices for all voters increases the risk that ballots will not accurately reflect voters' intent, either through mistakes or hacking.
  - o Similar language requiring hand-marked paper ballots for all in-person voting is also in the [Freedom to Vote Act](#). (P. 318, line 23, "so long as the voter shall have the option at every in-person voting location to mark by hand a printed ballot that includes all relevant contests and candidates.")

## **Section 6. (Previously Section 3) Implementation & Legacy Provision.**

- ! State Board of Elections Co-Chair Commissioner Douglas Kellner and other senior officials at the State Board of Elections were not comfortable with the legacy provision of the S309A/A1115A 2021 draft. They drafted a proposed legacy clause, and the new 2022 version legacy clause is adapted from that.
- o Local Boards of Elections are allowed to use and maintain the voting machines they have already purchased.
- o A sunset clause was added to the SBOE proposal. This allows local Boards of Elections to continue to purchase non-compliant machines for a period of three years after a newly-compliant voting machine is approved – if they have already purchased the same non-compliant machine. Professor Jones suggested two years to give reasonable compliance time and an extra year so that New York doesn't change machines in a big election year.
- o A “newly compliant” voting machine is defined as one that is certified after January 1, 2022. A new vendor (Democracy Live) has already applied for certification in New York state with a ballot-marking device that will meet all provisions of the new 2022 version of this bill.