



February 26, 2021

Laura Ladd Bierman, Executive Director
League of Women Voters of New York State
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Andrew W. Appel
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Dear Ms. Bierman:

I urge the LWV to support New York bill A1115 / S309 that prohibits dangerous “hybrid” voting machines.

As a computer scientist and cybersecurity expert I have extensively studied voting machines for almost two decades. All computer-based voting machines are vulnerable to “hacking,” that is, unauthorized replacement of their software with programs that cheat. That’s why New York, like almost all states, wisely requires that votes be cast on paper ballots—so that in case the machines have been hacked, one can recount the ballots by hand to know what the voters intended. In the 2020 general election, when accusations flew that voting machines in Wisconsin, Michigan, or Georgia had been hacked, election officials (and the public) could be reassured by *evidence*—that is, hand recounts of the paper ballots.

But if the voting machine is designed so that (if hacked) it could print votes onto the ballot *after* the voter has had her last chance to review the ballot, then we can never trust that the hand recount is counting *the voter’s* vote. Hybrid (or “all-in-one”) voting machines combine a printer (to mark the votes onto the paper), and a scanner (to count the votes). In normal operation, they work in that order. But if hacked, the software could run the paper ballot over the print-head to add more votes. That’s dangerous, and unnecessary. New York should prohibit their use by statute.

I have written more on this topic:

- [BMDs are not meaningfully auditable](#)
- [Serious design flaw in ESS ExpressVote touchscreen: “permission to cheat”](#)
- [Design flaw in Dominion ImageCast Evolution voting machine](#)
- [ESS voting machine company sends threats](#)

I would be happy to discuss this with you; my e-mail address is listed above.

Sincerely,

A handwritten signature in blue ink that reads "Andrew W. Appel".

Andrew W. Appel