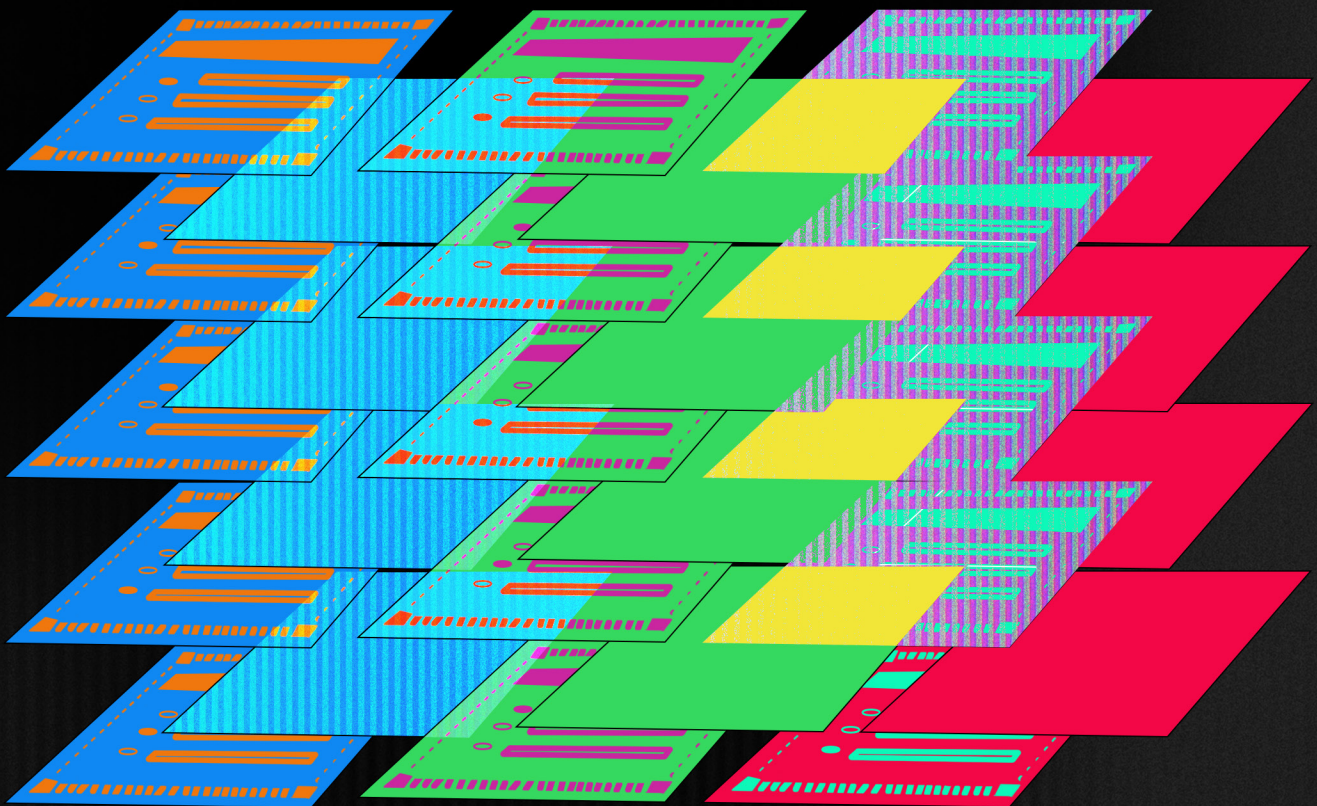


De-Weaponizing and Standardizing the Post-Election Audit



October 2022



The Center for Democracy & Technology (CDT) is a 27-year-old 501(c)3 nonpartisan nonprofit organization working to promote democratic values by shaping technology policy and architecture, with a focus on equity and justice. The organization is headquartered in Washington, D.C. and has a Europe Office in Brussels, Belgium.

De-Weaponizing and Standardizing the Post-Election Audit

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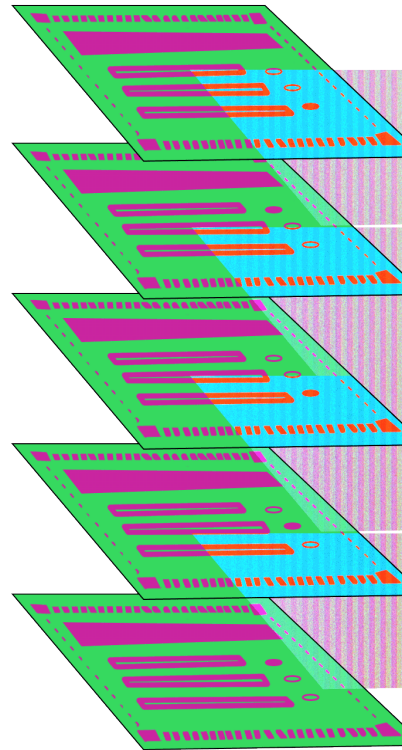
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Contents

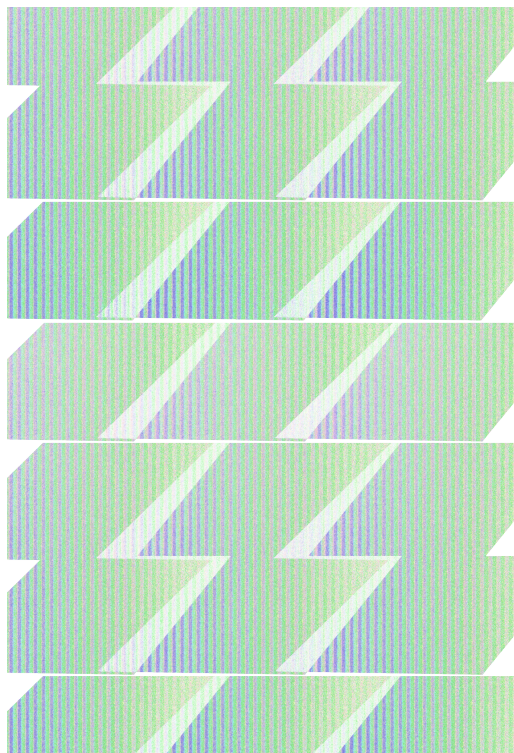
Introduction	6
Background	8
Categories of post-election audits	8
<i>Tabulation audits</i>	8
<i>Procedural audits</i>	9
<i>Anomaly investigations</i>	9
<i>Equipment audits</i>	10
Who typically carries out post-election audits?	10
<i>State and local election officials</i>	10
<i>Voting System Test Laboratories</i>	10
<i>Independent groups</i>	11
How are post-election audit rules and procedures set?	12
Sham Reviews and their Effects	14
Principles that distinguish a good post-election audit from a sham review	14
Recent sham reviews	18
<i>Fraudits</i>	18
<i>Breaches</i>	22
Harmful effects of sham reviews	25
<i>Undermining trust in election results</i>	25
<i>The generation of election disinformation</i>	25
<i>Financial expense</i>	26
<i>Harm to the security of future elections</i>	26
<i>Violation of voter privacy</i>	27

Contents (cont.)

Policy Options	29
1. Audit standards drafted by a federal agency or a private sector body	30
2. A credentialing system for independent auditors	31
3. State government election auditing offices	32
Conclusion	35

Introduction

By appearing similar to a standard post-election audit, sham reviews weaponize the trusted role that post-election audits typically play in elections.



One fundamental aspect of a successful election is that votes are collected and counted accurately and fairly, according to the rule of law. Another characteristic is that the results, if genuine, are respected by all parties, particularly the losing party.¹

When done right, a post-election audit is one of the strongest ways to ensure that these goals are met. When an election is free of major problems, post-election audits can generate evidence that the election was conducted properly and that the outcome was correct. (Likewise, a post-election audit may reveal procedural problems so that they can be corrected in future elections.) In turn, this should increase acceptance of the results and build public confidence in election systems, the bedrock of a functioning democracy.

But, since the 2020 presidential election, we have seen a number of “sham reviews”² that seem intended to instead *damage* confidence in the outcome of a well-run election. Sham reviews may purport to be, or have the appearance of a good post-election audit. But they are instead “designed to undermine legitimate election results, mislead the public, and ultimately leave our elections – and our democracy – less secure.”³ By appearing similar to a standard post-election audit, sham reviews weaponize the trusted role that post-election audits typically play in elections. And rather than generate evidence that an election was executed properly, they can be used, perversely, to generate disinformation about elections and undermine trust.

Telling the difference between a good post-election audit and a sham review may not be straightforward. Several

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- 1 The Carter Center. (2014). [Election Obligations and Standards: A Carter Center Assessment Manual](#), p. 174. [perma.cc/J4N4-UBXR]
 - 2 Verified Voting. (2021, October 21). [Good vs. Ugly: How to spot true post-election audits from sham reviews](#). [perma.cc/4DF2-98DP]
 - 3 Verified Voting. (2021, October 21). [Good vs. Ugly: How to spot true post-election audits from sham reviews](#). [perma.cc/4DF2-98DP]

groups have identified best practices for audits,⁴ some of which we summarize below. But there currently exist no set of broadly agreed upon or mandatory standards for election audit procedures, nor a certification regime for auditors themselves. Outside groups are often recruited to perform audits, either because they have special expertise or to ensure that the election is evaluated independently from the officials who carried it out. But there is currently no formal way to distinguish a qualified election auditor from an unqualified would-be election reviewer in the way that we distinguish licensed doctors from unlicensed quacks.

In this report, we identify the ways that sham reviews harm voters, taxpayers, and trust in elections overall. We also share ways for observers to distinguish good post-election audits from sham reviews.

Finally, we propose some options for creating formal distinctions between these kinds of reviews, including standards for post-election audits or a credentialing system for post-election auditors. Implementing standards for audit procedures or auditors themselves would make it easier for observers and journalists to credibly identify sham reviews, potentially disincentivizing sham reviews from being carried out in the first place. Having standards in place should also improve the quality and consistency of post-election audits in general, just as voluntary federal guidelines have enabled improvements to American voting systems.⁵

In the long term, careful implementation of any of these proposed policy options should improve good post-election audits, disincentivize sham reviews, and help build a more resilient American democracy.

4 Garland, L., Lindeman, M., McBurnett, N., Morrell, J., Schneider, M.K., & Singer, S. (Eds.). (2018, December). [Principles and Best Practices for Post-Election Tabulation Audits](https://perma.cc/B9E6-RHXA). [perma.cc/B9E6-RHXA]

5 U.S. Election Assistance Commission. (n.d.) [Voluntary Voting System Guidelines](https://perma.cc/XVU8-5QBZ). [perma.cc/XVU8-5QBZ]

Background

Categories of post-election audits

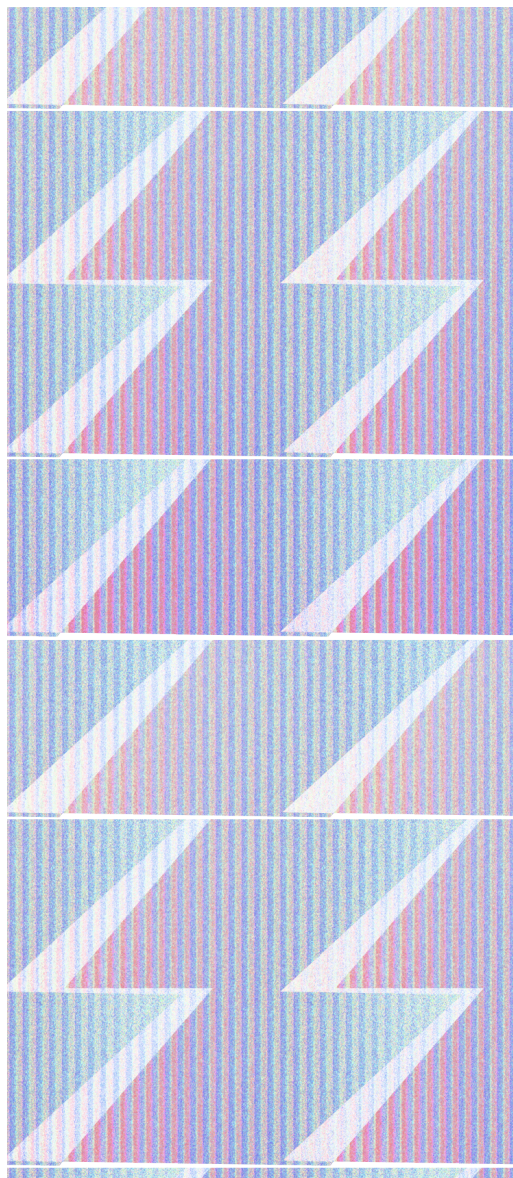
Tabulation audits

There is no widely accepted formal taxonomy of post-election audits, but post-election audits may be categorized based on their purpose.

The goal of a **tabulation audit** is to verify that cast ballots were counted properly. This may involve counting a sample of ballots – or every ballot – by hand or with an electronic tabulator.

“**Traditional**”⁶ **tabulation audits** examine a fixed percentage of ballots to verify that the initial count (e.g., for a set of voting precincts) is correct.

Traditional tabulation audits are often not the most efficient way to audit an election. In a landslide election, they may examine far more ballots than necessary. And in a close election, they may not examine enough. Many experts instead recommend **risk-limiting audits**⁷ (RLAs) as a more efficient way to verify that the election outcome is correct. In an RLA, auditors hand count a sample of ballots; in a landslide election, only a few randomly selected ballots need to be examined to gain a high degree of confidence in the election outcome. This efficiency means that, theoretically, many contests can be audited to a high degree of confidence at a relatively low investment of time and money.



6 National Conference of State Legislatures. (2022, September 22). [Post-Election Audits](https://perma.cc/6SP5-66ZG). [perma.cc/6SP5-66ZG]

7 Verified Voting. (n.d.) [Risk-Limiting Audits](https://perma.cc/23A6-USJL). [perma.cc/23A6-USJL]

Procedural audits

A tabulation audit typically depends on the assumption that election officials possess a complete and accurate record of the election.⁸ But this may not be the case. Election officials have a number of processes that aim to ensure, for example, that ballots have not been added or subtracted to the record and that proper chain of custody has been maintained. A **procedural audit** may investigate whether such processes have been properly followed, as well as other issues related to the integrity of the election. For instance, it may involve verifying that poll workers followed proper closing procedures requiring that they ensure that the number of votes cast in a polling place matches the number of voters who signed in. Or it may involve ensuring that members of each major political party have been involved in observing or carrying out specific parts of the election process.⁹

Anomaly investigations

An **anomaly investigation** begins with the recognition that a problem occurred with an election.¹⁰ The goal of the investigation is to determine what went wrong. For instance, after apparent anomalies in unofficial election results in 2020, officials in Michigan¹¹ and New Hampshire¹² authorized investigations, narrowly scoped to determine what caused the issues. These investigations are sometimes called “forensic audits,” but the term is somewhat controversial. One problem with the term is that “forensic” may imply that a crime has been committed;¹³ but in both the Michigan and New Hampshire cases, the cause of the issue was found to be a combination of human error and problems with election procedures.

The involvement of election officials in auditing ensures that the audit is informed by those who are most intimately familiar with the electoral rules and procedures.

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- 8 Bernhard, M. (2021, October.) [Risk-limiting Audits: A Practical Systematization of Knowledge](#). *Proceedings of the Seventh International Joint Conference on Electronic Voting*. [[perma.cc/26K8-8353](#)]
 - 9 Michigan Department of State Bureau of Elections. (2020, January). [Post-Election Audit Manual](#). [[perma.cc/9J9A-QKQ3](#)]
 - 10 Salem, S. (2021, October 5). [New Hampshire showed how to audit an election properly](#). *Washington Post*. [[perma.cc/6J9J-HENC](#)]
 - 11 Halderman, J.A. (2021, March 26). [Analysis of the Antrim County, Michigan November 2020 Election Incident](#). [[perma.cc/M9CG-E2AB](#)]
 - 12 Hursti, H., Lindeman, M., & Stark, P.B. (2021, July). [New Hampshire SB 43 Forensic Audit Report](#). [[perma.cc/7K9F-KALX](#)]
 - 13 Perhaps because of its criminal associations, the term “forensic audit” has also been used in calls to conduct open-ended fraud audits intended to cast doubt on the outcome. Lobo, A. (2021, July 1). [Calls for ‘forensic audit’ of election in Michigan don’t have much merit, expert says](#). *Holland Sentinel*. [[perma.cc/F4KR-XA3W](#)]

Equipment audits

An **equipment audit** may be carried out after an election to determine whether equipment conforms to federal or state requirements and standards.¹⁴ Equipment audits may be useful for determining whether there is any reason to doubt the outcome of the previous election, as well as whether the equipment is fit to be used for future elections.

Who typically carries out post-election audits?

Each U.S. state administers elections differently. There is a great deal of variance in who has the authority to execute a post-election audit and what their responsibilities are.

State and local election officials

For the most part, post-election audits are carried out and overseen by the same entities who administered the election itself. Elections may be administered, for example, by a partisan elected secretary of state or a bipartisan appointed commission.¹⁵ Likewise, the chief responsibility for running a post-election audit often falls to these very same entities.¹⁶ The involvement of election officials in auditing ensures that the audit is informed by those who are most intimately familiar with the electoral rules and procedures. But without proper checks and balances from multiple independent sources (such as bipartisan observers or other third parties), such involvement may raise the question whether it is appropriate for election officials to “self-audit” their own elections. Such an audit may be less likely to fulfill the goal of engendering confidence in the result.¹⁷

Voting System Test Laboratories

The U.S. Election Assistance Commission (EAC) accredits private companies, known as Voting System Test Laboratories (VSTLs), to test and certify that voting systems are consistent with the federal Voluntary Voting System Guidelines (VVSG) before an election vendor sells or leases them to election officials. There are currently two accredited

14 Zoch, A. (2021, August 5). [The What, Why and How of Election Audits](#). *National Conference of State Legislatures*. [[perma.cc/TSV8-HZQK](#)]

15 National Conference of State Legislatures. (2020, February 3). [Election Administration at State and Local Levels](#). [[perma.cc/KWC5-GWD2](#)]

16 National Conference of State Legislatures. (2022, September 22). [Post-Election Audits](#). [[perma.cc/6SP5-66ZG](#)]

17 Skinner, V. (2021, November 11). [Pennsylvania Republicans want to create a new Bureau of Election Audits](#). *Center Square*. [[perma.cc/4CJR-7TS8](#)]

VSTLs: Pro V&V and SLI Compliance. Both companies were recruited in 2021 by the Maricopa County (AZ) Board of Supervisors to conduct separate equipment audits investigating whether equipment was hacked or behaving improperly.¹⁸ (No major concerns with the equipment were identified.)

VSTLs may be well-positioned to inspect voting systems after an election given their expertise with voting systems. But the EAC accredits them only to certify voting systems for use in elections; they are not specifically accredited (by the EAC or any other entity) to conduct post-election audits. Indeed, SLI Compliance's report on their audit of Maricopa County's systems included the disclaimer that their evaluation did not "represent an EAC certification against the VVSG or any other standard."¹⁹

Independent groups

Independent auditors are sometimes involved in post-election auditing. It may improve confidence to have elections audited by independent entities rather than the election officials who carried out the election itself.

Independent auditors are sometimes involved in post-election auditing. It may improve confidence to have elections audited by independent entities rather than the election officials who carried out the election itself. Moreover, external groups may also be recruited because they provide technical expertise that election officials do not possess.

Some states require the involvement of independent auditors. For instance, a New Jersey statute²⁰ requires that the state attorney general appoint an audit team that includes at least one member with "verifiable expertise in the field of statistics" and another with "verifiable expertise in the field of auditing." Similarly, a New Mexico statute²¹ requires the secretary of state to "contract with an auditor qualified by the state auditor to audit state agencies" to oversee post-election auditing.

Independent auditors with elections expertise are often recruited to assist with audits even if not required by state law. For example, external groups like VotingWorks have been recruited to provide expertise and technical support for post-election auditing – particularly when jurisdictions pilot relatively new and complex techniques like RLAs.²²

18 Maricopa County Board of Supervisors. (n.d.). [Auditing elections equipment in Maricopa County](https://perma.cc/MUF4-63LN). [perma.cc/MUF4-63LN]

19 SLI Compliance. (2021, February 23). [Forensic Audit Report, p. 2](https://perma.cc/7SPS-4XLQ). [perma.cc/7SPS-4XLQ]

20 N.J. Stat. Ann. §19:61-9. [perma.cc/NE27-R6HZ]

21 N.M. Stat. Ann. §1-14-13.2 et seq. [perma.cc/3NXD-7PCC]

22 Khalil, Jahd. (2021, March 2). [Va Dept. of Elections Says Audit Shows Election Integrity](https://perma.cc/W64X-QZ7W). *Radio /Q.e* [perma.cc/W64X-QZ7W]

And experts like those at the Elections Group offer lengthy and detailed guides for election officials on how to conduct different kinds of RLAs, down to minute details about how to track, store, and handle batches of ballots.²³

However, state laws generally do not impose restrictions that prevent independent groups with little or no elections expertise from being recruited to conduct post-election audits. In 2021, the Arizona Senate contracted with Cyber Ninjas to audit the results of the 2020 presidential election in Maricopa County, AZ (separately from the aforementioned audit organized by the Maricopa County Board of Supervisors). Cyber Ninjas, as well as some of their subcontractors, appeared to have no prior experience with elections when they were hired for the job.²⁴

How are post-election audit rules and procedures set?

In most states, post-election tabulation audits are required by state law.²⁵ In those states, the law typically outlines a brief description of the audit procedures and delegates authority to the state's chief election official to set more detailed rules and procedures for the audit, which local election officials then carry out.²⁶

But election officials may have the flexibility to conduct an audit beyond what is authorized by state law. This flexibility can benefit election administration in a few ways. First, it allows election officials to pilot new audit procedures, such as RLAs, which offer an efficient way to gain a high degree of confidence in the election outcome.²⁷ Second, it allows election officials to, for instance, conduct anomaly investigations to uncover why a specific problem might have occurred.²⁸

But, when operating beyond the requirements of state law, a post-

23 The Elections Group. (n.d.) [Resources for Election Officials](https://perma.cc/KRB3-H3PQ). [perma.cc/KRB3-H3PQ]

24 Randazzo, R., Fifield, J., & Oxford, A. (2021, June 3). [Who is looking at your ballot? These are the companies involved in the Arizona election recount](https://perma.cc/3XWZ-Y4CU). *Arizona Republic*. [perma.cc/3XWZ-Y4CU]

25 National Conference of State Legislatures. (2022, September 22). [Post-Election Audits](https://perma.cc/6SP5-66ZG). [perma.cc/6SP5-66ZG]

26 U.S. Election Assistance Commission. (2020, October 23). [Post-Election Audits](https://perma.cc/XDF6-VTZ8). [perma.cc/XDF6-VTZ8]

27 National Conference of State Legislatures. (2022, September 22). [Risk-Limiting Audits](https://perma.cc/V96E-Y3JD). [perma.cc/V96E-Y3JD]

28 Michigan Department of State. (2021, March 26). [Expert report affirms accuracy of Antrim County presidential election results](https://perma.cc/7EQ7-CD59). [perma.cc/7EQ7-CD59]

election audit could be conducted in many different ways, and there is little federal guidance available to election officials. The EAC (as well as several other organizations – see above) has offered some guidelines but noted there is “no national standard for how post-election audits should be structured.”²⁹ Moreover, when hiring a third-party auditor, there is no standard way to distinguish among possible hires. There is, for example, no formal post-election auditing credential that could be used to determine which independent experts are experienced and trustworthy.

29 U.S. Election Assistance Commission. (2021, October 6). [Election Audits Across the United States](https://perma.cc/9GF7-HQSV), p. 4. [perma.cc/9GF7-HQSV]

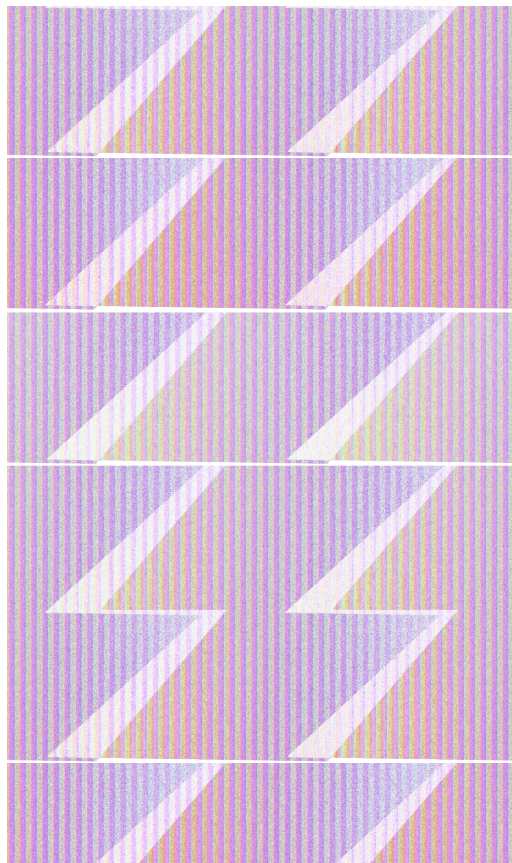
Sham Reviews and their Effects

In this section, we highlight a set of principles that distinguish good post-election audits from sham reviews. We then look at a handful of recent sham reviews – some of which we characterize as *fraudits* and others as *breaches*, with an eye on how those sham reviews violate the principles of a good audit. Lastly, we describe the harmful effects of sham reviews, which include the election disinformation that they generate and the substantial harms to taxpayers, election security overall, and voter privacy.

Principles that distinguish a good post-election audit from a sham review

The 2021 Cyber Ninjas audit in Maricopa County, Arizona, was widely denounced by election experts as a sham and a perversion of a true post-election audit, including at an October 2021 Congressional hearing focusing on the audit.³⁰

Since then, a number of organizations have identified characteristics that distinguish good post-election audits



30 U.S. House of Representatives Committee on Oversight and Reform. (2021, October 7). [Assessing the election “audit” in Arizona and threats to American democracy](https://perma.cc/S6L2-7KJN). [perma.cc/S6L2-7KJN]
U.S. House of Representatives Committee on Oversight and Reform. (2022, August 11). “Exhausting and Dangerous”: The Dire Problem of Election Misinformation and Disinformation.
Burden, B.C. & Grayson, T. (2021, June 22). [Report on the Cyber Ninjas Review of the 2020 Presidential and U.S. Senatorial Elections in Maricopa County, Arizona](https://perma.cc/5FQE-2PBX). States United Democracy Center. [perma.cc/5FQE-2PBX]

from bad ones.³¹ Here, in order to demonstrate the broad agreement across these organizations, we compile some of the principles they have identified in six categories:

1. Professionalism and experience with elections

- Audits should be “conducted by election administration experts.” (BC)
- Auditors should have “prior experience in the subject matter.” (GAO)
- Audit organizations “must establish and maintain a system of quality control that is designed to provide the audit organization with reasonable assurance that the organization and its personnel comply with professional standards.” (GAO)
- Election officials should “be an integral part of the post-election audit process... The involvement of any third-party entities, like a CPA firm, should be determined by the Chief State Election Official or state legislative act prior to an election, and those entities must work closely with election officials.” (NASS)

2. Transparency and communication

- “Audits should be open to all candidates, political parties, election integrity advocates, and other independent observers.” (VV)
- “Audits should be transparent and open to the public for observation.” (BPC)³²
- “Post-election audit methods and processes must be transparent.” (NASS)
- “Audit plans, processes, and records” should be public.” (BC)

³¹ To compile these principles, we draw from the following sources.
 Brennan Center: [Lessons on How to Conduct Credible Post-Election Audits](https://perma.cc/FB5J-AF9F) (BC) [perma.cc/FB5J-AF9F]
 Verified Voting: [Good vs. Ugly: How to Spot True Post-Election Audits From Sham Reviews](https://perma.cc/4NE9-QWEN) (VV) [perma.cc/4NE9-QWEN]
 National Association of Secretaries of State: [NASS Task Force on Vote Verification: Post-election Audit Recommendations Report](https://perma.cc/28KB-W67N) (NASS) [perma.cc/28KB-W67N]
 Bipartisan Policy Center Task Force on Elections: [Bipartisan Principles for Election Audits](https://perma.cc/PW3G-CUDP) (BPC) [perma.cc/PW3G-CUDP]
 We also cite the Government Accountability Office's 2018 [Government Auditing Standards](https://perma.cc/P6E7-B9MW) (GAO) even though the standards do not specifically refer to election-related audits. [perma.cc/P6E7-B9MW]

³² See also Burden, B.C. & Grayson, T. (2021, June 22). [Report on the Cyber Ninjas Review of the 2020 Presidential and U.S. Senatorial Elections in Maricopa County, Arizona](https://perma.cc/5FQE-2PBX). States United Democracy Center. [perma.cc/5FQE-2PBX]

- “Once the results of the post-election audit are completed and certified, they should be made publicly accessible consistent with state law.” (NASS)
- Final audit results should be “reported publicly and kept in publicly available records with the elections office.” (VV)
- “Audit results should be clearly communicated to the public after their completion.” (BPC)
- “States should make every effort to educate the public on their post-election audit process.” (NASS)

3. Well-established methods

- “Audits should have a thorough, pre-established...clear, [and] replicable methodology.” (BPC)
- Audits should follow “pre-written, comprehensive procedures.” (BC)
- Audits should “follow guiding principles that are procedurally and statistically sound.” (VV)

4. Objectivity and independence

- Auditors should be “and appear to be independent and free of conflicts of interest.” (BC)
- Good post-election audits are conducted “without political bias by election officials who are sworn to impartiality, often working in bipartisan teams.” (VV)
- “Audits should be fully funded by state or local public resources,” in order to avoid the bias inherent to audits funded by motivated actors like candidates or political parties. (BPC)
- Auditors should evaluate the evidence before them and should not use weak or “insufficient” evidence as “support for findings and conclusions.” (GAO)
- Auditors should evaluate “self-review threat,” the threat that an auditor that has previously provided related but nonaudit services will not appropriately evaluate the results of those services. (GAO)
- Auditors should perform “their work with an attitude that is objective, fact-based, nonpartisan, and nonideological.” (GAO)
- Auditors should maintain “an attitude of impartiality, having intellectual honesty, and being free of conflicts of interest.” (GAO)

5. Security and chain of custody

- “Audits should follow established security best practices.” (BPC)

Audits should “follow guiding principles that are procedurally and statistically sound.”

Auditors should maintain “an attitude of impartiality, having intellectual honesty, and being free of conflicts of interest.”

- “The physical security of paper ballots and voting materials must be maintained at all times.” (BPC)
- Audits have a “documented process that does not threaten the integrity of the voted ballots, voting equipment, or other artifacts of an election in any way.” (VV)
- Audits should “protect a voter’s constitutional right to a secret, anonymous ballot.” (VV)
- “Election officials should be able to track the movement and transport of ballots, voting machines, and other election materials,” referring to best practices outlined by the EAC³³ and the U.S. Cybersecurity and Infrastructure Agency (CISA).³⁴ (NASS)
- Election officials should “retain control of the ballots and equipment at all times.” (VV)
- “Election officials must maintain custody of ballots and other election peripherals.” (BPC)
- Ballots and equipment should “remain in election official control.” (BC)
- Auditors should properly handle “sensitive or classified information or resources.” (GAO)

6. Frequency and timing

- “Audits should occur after every election.” (BPC)
- “Audits should take place before results are certified.” (BPC)³⁵
- “Audits should be conducted shortly after an election as a routine part of election administration specified in law, regardless of the reported election results” rather than “initiated by a partisan group of politicians.” (VV)
- States should require audits to be conducted “as soon as reasonably possible after an election.” (NASS)
- States should have “a process to recertify election results based on the results of the audit.” (NASS)

33 U.S. Election Assistance Commission. (2021, July 13). [Best Practices: Chain of Custody](https://perma.cc/TZ6G-ZUGZ). [perma.cc/TZ6G-ZUGZ]

34 U.S. Cybersecurity and Infrastructure Security Agency. (2021, July). [Chain of Custody and Critical Infrastructure Systems](https://perma.cc/R5DH-LPNC). CISA Insights. [perma.cc/R5DH-LPNC]

35 See also Masterson, M., DePew, J., Jonsson, K., Perkins, S., & Zaheer, A. (2021, October 14). [Zero Trust: How to Secure American Elections When the Losers Won't Accept They Lost](https://perma.cc/SZQ8-8VB3), p. 12. Stanford Internet Observatory. [perma.cc/SZQ8-8VB3]

Recent sham reviews

In the wake of the 2020 presidential election, former President Trump and his allies repeatedly attacked the credibility of electoral processes and pressured state election officials to overturn the results in their states.³⁶ One component of this strategy, which began soon after the election, was to insinuate that the election was rigged, and call for audits with vaguely-defined purposes.³⁷ State lawmakers³⁸ came under tremendous pressure to initiate audits, sometimes dubbed *fraudits*, which purported to objectively investigate the integrity of the 2020 election – but that rested on the faulty premise³⁹ that the election was rigged or fraudulent and appeared intended mostly to gather or generate evidence for that claim. Fraudits may be authorized by a court, a legislature, or election officials.⁴⁰

More recently, evidence has emerged of a second subset of sham reviews, which we refer to simply as *breaches*.⁴¹ These breaches share many of the same characteristics and goals of fraudits and can cause similar harms. But, while fraudits often pretend to be unbiased and transparent investigations of an election (and sometimes result in a report of some kind), breaches do not even attempt to maintain this pretense.⁴²

Fraudits

Maricopa County, Arizona

The most prominent and comprehensive fraudit was the Cyber Ninjas review of the 2020 presidential election in Maricopa County, Arizona –

36 Helderma, R.S. & Alemany, Jacqueline. (2022, June 21). [Trump's pressure drew violence, threats to local officials, committee shows](#). *Washington Post*. [perma.cc/79JT-TWTA]

37 Itkowitz, C. & DeBonis, M. (2021, January 2). [Cruz, cadre of other GOP senators vow not to certify Biden win without probe of baseless voter fraud claims](#). *Washington Post*. [perma.cc/FC3X-Z94F]

38 Johnson, S. (2021, June 26). [Following Warning By Trump, Vos Announces Former Justice Will Lead Assembly GOP Election Probe](#). *Wisconsin Public Radio*. [perma.cc/AE79-F9UK]

39 OSET Institute. (2021, May 20). [Sham Audits are Bad for America](#). [perma.cc/N8YX-BHXL]

40 Weber, P.J. (2021, September 23). [Texas announces audit of 2020 votes after Trump urges review](#). *Associated Press*. [perma.cc/B7YY-JX9G]

41 Ulmer, A. & Layne, N. (2022, April 28). [Trump allies breach U.S. voting systems in search of 2020 fraud 'evidence'](#). *Reuters*. [perma.cc/RRD2-8SRR]

42 While the term “breach” typically refers to unauthorized access to a system, the election system breaches described in this report instead occurred with the cooperation of sympathetic officials with access. However, these incidents can still be considered breaches of election security at large.

State lawmakers came under tremendous pressure to initiate audits, sometimes dubbed fraudits, which purported to objectively investigate the integrity of the 2020 election—but that rested on the faulty premise that the election was rigged or fraudulent and appeared intended mostly to gather or generate evidence for that claim.

the largest county in Arizona, housing more than half of the entire state's population. The review began in December 2020 when the State Senate issued a sweeping subpoena to Maricopa County election officials, ordering the county to turn over its voting systems, including all 2.1 million ballots cast in the election, election-related hardware and software, usernames and passwords, logs, and more.⁴³

As documented in a comprehensive report by the Brennan Center for Justice⁴⁴ and a separate report co-authored by former Republican Kentucky Secretary of State Trey Grayson,⁴⁵ the review flagrantly violated each of the principles of good post-election audits described above.

To start, the review was carried out by an unqualified third party with a strong appearance of partisan bias. Cyber Ninjas had no previous experience auditing elections.⁴⁶ The firm was owned by Doug Logan, who, before Cyber Ninjas was selected, expressed support on social media for the notion that the 2020 election had been rigged against President Trump.⁴⁷

The review's aims were unclear. It seemed to purport to be both a tabulation audit investigating the results, and an anomaly investigation testing various assertions. For example, auditors looked for traces of bamboo fiber to support the vague theory that ballots originated in Asia.⁴⁸

Cyber Ninjas fell *far* short of the transparency that is characteristic of a good post-election audit. For example, the firm fought to keep their procedures secret, even requiring volunteer audit observers to sign non-disclosure agreements. Their policies and procedures were only made

43 Gómez, L. (2020, December 15). [Senate issues subpoenas for all ballots, voting machines to audit Maricopa County election](#). *Arizona Mirror*. [[perma.cc/C3AZ-D2YZ](#)]

44 Howard, E., Ramachandran, G., Bydlak, J., Chimene-Weiss, S., Davidson, J., & Germer, M. (2021, July 8). [Partisan Election Review Efforts in Five States](#). *Brennan Center for Justice*. [[perma.cc/R2HA-WLTU](#)]

45 Burden, B.C. & Grayson, T. (2021, June 22). [Report on the Cyber Ninjas Review of the 2020 Presidential and U.S. Senatorial Elections in Maricopa County, Arizona](#). States United Democracy Center. [[perma.cc/5FQE-2PBX](#)]

46 Riccardi, N. (2021, May 23). [Experts or 'grifters'? Little-known firm runs Arizona audit](#). *Associated Press*. [[perma.cc/64TF-32G3](#)]

47 Duda, J. & Small, J. (2021, March 21). [Arizona Senate hires a 'Stop the Steal' advocate to lead 2020 election audit](#). *Arizona Mirror*. [[perma.cc/4PZY-HEF5](#)]

48 Helderman, R.S. (2021, May 5). [Observers report ballots and laptop computers have been left unattended in Arizona recount, according to secretary of state](#). *Washington Post*. [[perma.cc/W5V2-RHCX](#)]

Cyber Ninjas fell far short of the transparency that is characteristic of a good post-election audit.

public after a judge ordered Cyber Ninjas to share them.⁴⁹ Logan made various plans to prevent or make it difficult for journalists to cover the review.⁵⁰

The firm followed bizarre, highly non-standard procedures for counting the 2.1 million ballots. Elections expert Jennifer Morrell wrote that she “was stunned to see spinning conveyor wheels, whizzing hundreds of ballots past ‘counters,’ who struggled to mark, on a tally sheet, each voter’s selection for the presidential and Senate races.”⁵¹ She noted that the procedures seemed likely to produce many errors, without any mechanisms for catching and correcting them.

The physical security at the review was inadequate, leaving ballots and voting equipment potentially exposed to unauthorized access. Ultimately, Arizona Secretary of State Katie Hobbs informed Maricopa County election officials that after the review, there would be no way to “provide adequate assurance that [the election equipment inspected in the review] remain[ed] safe to use,” and that her office would consider decertifying it if the county attempted to use the equipment in future elections.⁵² The county then spent over \$3 million for new election equipment.⁵³

The review also appears to have served as a fundraising windfall for Republicans. Fundraising messages from the Arizona Republican party leveraged the audit with messages urging recipients to donate to the audit effort and “battle for Election Integrity, Law and Order, and Secure Borders.”⁵⁴ National Trump-allied groups raised millions of dollars to conduct the audit, though it is unclear where that money actually went.⁵⁵

49 Duda, J. (2021, April 29). [Cyber Ninjas releases its election audit policies after court order](https://www.washingtonpost.com/technology/2021/04/29/cyber-ninjas-releases-its-election-audit-policies-after-court-order/). *Washington Post*. [perma.cc/HT69-5FVX]

50 MacDonald-Evoy, J. (2021, September 22). [Doug Logan masterminded banning the media from the Arizona ‘audit’](https://www.azmirror.com/story/news/2021/09/22/doug-logan-masterminded-banning-the-media-from-the-arizona-audit/7441112002/). *Arizona Mirror*. [perma.cc/5CPQ-CEUU]

51 Morrell, J. (2021, May 19). [I watched the GOP’s Arizona election audit. It was worse than you think](https://www.washingtonpost.com/technology/2021/05/19/i-watched-the-gops-arizona-election-audit-it-was-worse-than-you-think/). *Washington Post*. [perma.cc/K23F-U96Z]

52 Fifield, J. (2021, May 20). [Arizona secretary of state may not let Maricopa County reuse voting machines after audit](https://www.azrepublic.com/story/news/2021/05/20/arizona-secretary-of-state-may-not-let-maricopa-county-reuse-voting-machines-after-audit/7441112002/). *Arizona Republic*. [perma.cc/U6ZP-JG7D]

53 Pitzl, M.J. (2022, June 3). [Here’s how much the Senate’s review of the 2020 election has cost Arizona taxpayers](https://www.azrepublic.com/story/news/2022/06/03/heres-how-much-the-senates-review-of-the-2020-election-has-cost-arizona-taxpayers/). *Arizona Republic*. [perma.cc/H6H9-GYBQ]

54 Hansen, R.J. & Sanchez, Y.W. (2021, June 2). [Arizona election audit a money windfall for state Republican Party: ‘It’s the grassroots in action’](https://www.azrepublic.com/story/news/2021/06/02/arizona-election-audit-a-money-windfall-for-state-republican-party-its-the-grassroots-in-action/). *Arizona Republic*. [perma.cc/X838-E85E]

55 Cooper, J.J. (2021, July 29). [Trump supporters raise \\$5.7M for Arizona election audit](https://www.azpress.com/story/news/2021/07/29/trump-supporters-raise-5.7m-for-arizona-election-audit/). *Associated Press*. [perma.cc/86PR-G8TQ]

In September 2021, Cyber Ninjas released their final report, which mostly confirmed the election outcome in Maricopa. But as the Brennan Center for Justice put it, the report used titles and headings that seemed “engineered for superspreaders of disinformation to use out of context.”⁵⁶

Fulton County, Pennsylvania

In December 2020, Pennsylvania State Senator Doug Mastriano and two other state senators urged three small Pennsylvania counties to allow a third party to review their ballots. Only one county, Fulton County, complied.⁵⁷ Fulton allowed Wake TSI, a private company with no apparent previous experience auditing elections, to spend an afternoon counting about 1000 absentee ballots and obtaining data from voting machines. Wake TSI had been contracted to perform the review by a nonprofit founded by Sidney Powell, one of the Trump campaign’s lawyers involved in filing unsuccessful lawsuits after the 2020 election aimed at overturning the result.⁵⁸

Wake TSI published a final report mostly suggesting that the election was well-run by the county. However, the report also noted that their review did “not indicate that there were no issues with the election, just that they were not the fault of the County Election Commission or the County Election Director” – before listing supposed problems found with the Dominion voting systems used in the county. According to the Washington Post, the report was “circulated on social media by Trump allies who have sought to claim that voting machines are vulnerable to hacking and fraud.”⁵⁹

In July 2021, the Pennsylvania Department of State decertified Fulton County’s voting system for future elections for security reasons. According to the Fulton County elections director, Wake TSI was observed by county staff while they had access to the election system. But the Department of State wrote that, because this process lacked

56 Howard, E. & Ramachandran, G. (2021, September 27). [Partisan Arizona Election ‘Audit’ Was Flawed from the Start](#). Brennan Center for Justice. [[perma.cc/AY2Z-Z9ZQ](#)]

57 Helderman, R.S. (2021, June 6). [‘It was like this rogue thing’: How the push by Trump allies to undermine the 2020 results through ballot reviews started quietly in Pennsylvania](#). Washington Post. [[perma.cc/N2P9-7T8Z](#)]

58 Parish, M. (2022, January 3). [What we know about the 2020 Fulton County election review through open records](#). Pennsylvania Capital-Star. [[perma.cc/2KWX-KKZW](#)]

59 Helderman, R.S. (2021, June 6). [‘It was like this rogue thing’: How the push by Trump allies to undermine the 2020 results through ballot reviews started quietly in Pennsylvania](#). Washington Post. [[perma.cc/N2P9-7T8Z](#)]

public transparency, it would be impossible to verify that the system would be safe for future use.⁶⁰

As of publication, Senator Mastriano is running to be Pennsylvania's next governor. He has not responded to reporters' inquiries about whether he would respect the results of the 2022 election.⁶¹

Breaches

Mesa County, Colorado

Tina Peters was the elected Clerk and Recorder in Mesa County, CO, during the 2020 presidential election. After the election, she made a series of online posts claiming that the election was rigged.⁶² At first, however, Peters did not question the integrity of her county's elections,⁶³ in which Donald Trump won 63 percent of the vote.⁶⁴ But according to reporting in the New Yorker, after she met with a group of conspiracy theorists in her office, she became sympathetic to the idea that the election in her own county was suspicious, and began working with the group to help them obtain copies of the software and data loaded on the county's Dominion Voting System machines.

Peters's office contracted with a local software engineer and apparently gave his ID badge to another individual. In May 2021, that individual, likely an affiliate of notable 2020 election deniers Mike Lindell (CEO of My Pillow, Inc.) and Patrick Byrne (former CEO of Overstock.com), used that badge to gain access to the elections office and copy the voting system's hard drive both before and after a planned update to the system's software.

Months later, in August 2021, Lindell held a "Cyber Symposium" in which he promised to present data proving that the 2020 election was stolen.

60 Pennsylvania Department of State. (2021, July 21). [Department Of State Decertifies Fulton County's Voting System](https://www.pa.gov/newsroom/department-of-state-decertifies-fulton-county-voting-system). [perma.cc/NVB2-DL4G]

61 Gardner, A., Knowles, H., Itkowitz, C. & Linskey, A. (2022, September 18). [Republicans in key battleground races refuse to say they will accept results](https://www.washingtonpost.com/politics/republicans-in-key-battleground-races-refuse-to-say-they-will-accept-results/2022/09/18/). *Washington Post*. [perma.cc/UNC5-2NUE]

Siwy, B. (2022, October 13). ['Uncharted territory': Pa. candidates mum on whether they'll accept 2022 election results](https://www.goerie.com/news/uncertainties-pa-candidates-mum-on-whether-theyll-accept-2022-election-results/). *GoErie*. [perma.cc/QA49-LQB2]

62 Miller, T. (2021, August 9). [Voting Machine Tampering Is Coming From Inside The MAGA House](https://www.thebulwark.com/article/voting-machine-tampering-is-coming-from-inside-the-maga-house/). *The Bulwark*. [perma.cc/QU2G-ARSH]

63 Halpern, S. (2022, September 7). [The Election Official Who Tried to Prove "Stop the Steal"](https://www.nytimes.com/2022/09/07/us/politics/election-official-who-tried-to-prove-stop-the-steal.html). *New Yorker*. [perma.cc/Y7RH-EMJU]

64 [Colorado Election Results](https://www.politico.com/news/2021/01/06/colorado-election-results/). (2021, January 6). *Politico*. [perma.cc/AF2W-GQKD]

Election equipment was directly accessed by biased individuals with no previous experience with elections. There was no transparency around the events. Peters's deputy had even "instructed the I.T. department to turn off the cameras in the area" where the election system software would be updated.

In one part of the symposium, files apparently from the Mesa County systems were presented and analyzed on screen.⁶⁵ Before the event, a video apparently taken during Dominion's software update was posted online that contained screenshots of election system passwords. Election security experts were generally unimpressed by the evidence presented at the event; one expert said Lindell "gave us experts NOTHING today, except random garbage that wastes our time."⁶⁶

But the breach nonetheless constituted a sham review that violated many of the above principles of good post-election auditing. Election equipment was directly accessed by biased individuals with no previous experience with elections. There was no transparency around the events. Peters's deputy had even "instructed the I.T. department to turn off the cameras in the area" where the election system software would be updated.⁶⁷

Most worryingly, the breach posed a potential threat to the security of future elections, both within and outside Mesa County. Colorado's secretary of state prohibited Mesa County from re-using the equipment for the following election;⁶⁸ the Mesa County Board of County Commissioners then voted to replace the machines⁶⁹ at an estimated cost to taxpayers of at least \$1 million.⁷⁰ Election security expert J. Alex Halderman said that, if the data made public were in fact copies of Mesa County's Dominion election system, it would pose a threat to elections outside of Mesa County. He said the files could "tell the Stop the Steal people and everyone else how to build an attack" on similar systems in other counties.⁷¹

65 Vicens, A.J. (2021, August 11). [QAnon Hero Claims to Present Sensitive Election Files at MyPillow CEO Event](#). *Mother Jones* [[perma.cc/5ZMC-HU9Q](#)]

66 Tayeb, Z. & Dean, G. (2021, August 14). [Mike Lindell said his cyber symposium would prove voter fraud. One cyber expert said it was just full of 'random garbage that wastes our time.](#) *Insider*. [[perma.cc/S7WE-QV3P](#)]

67 Halpern, S. (2022, September 7). [The Election Official Who Tried to Prove "Stop the Steal"](#). *New Yorker*. [[perma.cc/Y7RH-EMJU](#)]

68 Birkeland, B. (2021, August 12). [After Data Is Posted On Conspiracy Site, Colorado County's Voting Machines Are Banned](#). *CPR News*. [[perma.cc/RB6X-ERF3](#)]

69 Miller, F. (2021, August 24). [Mesa County commissioners vote to replace Dominion voting equipment](#). *Colorado Newsline*. [[perma.cc/BE67-PAQB](#)]

70 Hakim, D., Fausset, R., & Corasaniti, N. (2022, September 20). [Videos Show Trump Allies Handling Georgia Voting Equipment](#). *New York Times*. [[perma.cc/R4WW-EC9U](#)]

71 Halpern, S. (2022, September 7). [The Election Official Who Tried to Prove "Stop the Steal"](#). *New Yorker*. [[perma.cc/Y7RH-EMJU](#)]

As in other sham reviews, the consultants appeared to have gained access to sensitive voter data. It's not clear whether they obtained the data in any useful way, but videos released because of the lawsuit show them handling the county's electronic -pollbooks, which contain copies of the entire state's voter registration database.

Coffee County, Georgia

In Coffee County, Georgia, a small rural county where Trump won 70% of the vote,⁷² elections supervisor Misty Hampton said she was suspicious of President Biden winning the state.⁷³ She told the *Washington Post* that, soon after the election, she allowed a Georgia businessman skeptical of the 2020 election results to access her offices and some election equipment. Evidence emerging from a long-running lawsuit regarding Georgia's election security also revealed, 20 months after the fact, that several consultants were allowed access in January 2021 and copied software and data from the Dominion voting machines. Those consultants included Doug Logan, owner of Cyber Ninjas, the firm responsible for the Maricopa County fraud. It also included associates of Trump campaign lawyer Sidney Powell. Like the Mesa County breach, the Coffee County breach appears to be enabled by, and conducted by, partisan individuals with no elections expertise.

Nothing was publicly known about the breach for a year-and-a-half. Moreover, details might never have come out if not for a lawsuit regarding other matters.

As in other sham reviews, the consultants appeared to have gained access to sensitive voter data. It's not clear whether they obtained the data in any useful way, but videos released because of the lawsuit show them handling the county's electronic pollbooks, which contain copies of the *entire* state's voter registration database.⁷⁴

In September 2022, Georgia Secretary of State Brad Raffensberger announced that he would replace some of Coffee County's election equipment at a cost of about \$400,000. However, Marilyn Marks, one of the plaintiffs in the lawsuit that led to the information becoming public, said it was a mistake to not replace the county's central ballot scanner and the central election server used to tally results. Marks said they should be presumed to be tampered with, and therefore a potential threat to the security of future elections.⁷⁵

72 [Georgia Election Results](#). (2021, January 6). *Politico*. [perma.cc/3WTK-R42J]

73 Brown, E & Gardner, A. (2022, May 13). [Georgia county under scrutiny after claim of post-election breach](#). *Washington Post*. [perma.cc/K8NF-VQCM]

74 Hakim, D., Fausset, R., & Corasaniti, N. (2022, September 20). [Videos Show Trump Allies Handling Georgia Voting Equipment](#). *New York Times*. [perma.cc/R4WW-EC9U]

75 Gardner, A., Brown, E., & Swaine, J. (2022, September 23). [Georgia to replace voting machines in Coffee County after alleged security breach](#). *Washington Post*. [perma.cc/2YVU-9KB6]

Harmful effects of sham reviews

Undermining trust in election results

The mere fact of a lengthy forensic investigation – like the Maricopa County, AZ, fraudit, which lasted several months – may serve to raise doubts about the trustworthiness of a specific past election. To an audience inclined to distrust an election for whatever reason, an ongoing investigation may serve to confirm their feelings of suspicion. Pro-Trump news outlet One America News Network gave extensive airtime to the review, with anchors even referring to it as “America’s audit.”⁷⁶ Favorable coverage to sympathetic audiences appears to have been a goal of the review’s organizers; while they made it difficult for Arizona news outlets to cover the audit, they granted access to One America News Network and “known misinformation outlet” Gateway Pundit.⁷⁷

The generation of election disinformation

Long after the review is over, and trust in the past election has been undermined, the products of the review can be used to generate further disinformation about the election system in general. For example, the Maricopa County, AZ, Cyber Ninjas fraudit concluded with a report that included alarming but misleading claims.⁷⁸ The report from a fraudit in Antrim County, MI, also made the highly misleading⁷⁹ claim that the voting machines had an “error rate of 68.05%,” which was promptly repeated by President Trump.⁸⁰

The products of a breach can also serve as props to discredit an election. In the Mesa County, CO, breach, county clerk Tina Peters allowed a team associated with Mike Lindell to make copies of the election software.⁸¹ Soon after, Mike Lindell hosted a “cyber forensic symposium” which mostly consisted of smoke and mirrors vaguely suggesting that the election had been rigged and generally implying

76 Lewis, B. (2021, June 21). [One America News pushes to make Arizona's so-called election “audit” into “America’s audits”](https://www.mediamatters.org/story/one-america-news-pushes-to-make-arizona-s-so-called-election-audit-into-americas-audits). *Media Matters*. [perma.cc/4D6G-RR9H]

77 MacDonald-Evoy, J. (2021, September 24). [‘Audit’ leaders rolled out the red carpet for ‘friendly’ right-wing media](https://www.azmirror.com/story/audit-leaders-rolled-out-the-red-carpet-for-friendly-right-wing-media). *Arizona Mirror*. [perma.cc/6RLU-A7DX]

78 Ramachandran, G. (2021, October 1). [The Arizona Senate's Contractors Fail to Understand Basic Probability and Voter Data](https://www.brennancenter.org/our-work/reports-research/the-arizona-senate-s-contractors-fail-to-understand-basic-probability-and-voter-data). *Brennan Center for Justice*. [perma.cc/EC9V-L5V6]

79 Halderman, J.A. (2021, March 26). [Analysis of the Antrim County, Michigan November 2020 Election Incident](https://www.breitbart.com/politics/2021/03/26/analysis-of-the-antrim-county-michigan-november-2020-election-incident/). [perma.cc/M9CG-E2AB]

80 Brown, E., Davis, A.C., Swaine, J. & Dawsey, J. (2021, May 9). [The making of a myth](https://www.washingtonpost.com/news/technology/wp/2021/05/09/the-making-of-a-myth/). *Washington Post*. [perma.cc/R5B5-47P8]

81 Halpern, S. (2022, September 7). [The Election Official Who Tried to Prove “Stop the Steal”](https://www.nytimes.com/2022/09/07/us/politics/election-official-who-tried-to-prove-stop-the-steal.html). *New Yorker*. [perma.cc/Y7RH-EMJU]

that the entire election system is faulty. In one part of the event, onstage experts explored the “forensic images” of the Mesa County election system, likely those obtained in the breach. Expert observers at the event noted that the demonstration didn’t provide any compelling evidence of anything surprising or unusual – but the data may have served as a powerful prop for pushing disinformation into the public discourse.⁸²

Financial expense

Sham reviews involve unqualified and untrusted third parties gaining access to election equipment, which poses several serious security problems. The most acute problem is that, because the third parties may have modified the software in some fashion, the impacted equipment cannot necessarily be trusted for future elections. In most cases, state election officials have addressed this problem by decertifying the equipment. This requires local election officials to obtain new equipment at great taxpayer cost. Maricopa County, for example, spent \$3.2 million on new tabulation machines. Other costs related to the fraudit – including payment to Cyber Ninjas for their contracted work – raised the total taxpayer cost to nearly \$5 million,⁸³ about \$1 per resident. The cost of replacing equipment in Coffee County, GA, is about \$400,000,⁸⁴ or \$10 per resident; in Mesa County, CO, it is about \$1 million,⁸⁵ or \$7 per resident. It may also take a great deal of time for election offices to set up new systems – offices whose time and financial resources are already stretched thin.⁸⁶

Harm to the security of future elections

After a sham review that potentially compromises election equipment, jurisdictions can avoid risks to future elections by obtaining new equipment. But the breach can have effects beyond the compromised jurisdiction. For example, a *Politico* analysis of data from Verified Voting indicated that just six voting machine models are used in more than 300

82 Himmelman, K. (2021, August 16). [The Big Reveal That Wasn't](https://perma.cc/T4R6-HPWK). *Dispatch*. [perma.cc/T4R6-HPWK]

83 Pitzl, M.J. (2022, June 3). [Here's how much the Senate's review of the 2020 election has cost Arizona taxpayers](https://perma.cc/H6H9-GYBQ). *Arizona Republic*. [perma.cc/H6H9-GYBQ]

84 Gardner, A., Brown, E., & Swaine, J. (2022, September 23). [Georgia to replace voting machines in Coffee County after alleged security breach](https://perma.cc/2YVU-9KB6). *Washington Post*. [perma.cc/2YVU-9KB6]

85 Hakim, D., Fausset, R., & Corasaniti, N. (2022, September 20). [Videos Show Trump Allies Handling Georgia Voting Equipment](https://perma.cc/R4WW-EC9U). *New York Times*. [perma.cc/R4WW-EC9U]

86 Orey, R., Gordon, G., Thorning, M. & Weil, M. (2022, June 16). [The Path of Federal Election Funding](https://perma.cc/K29F-7H49). *Bipartisan Policy Center*. [perma.cc/K29F-7H49]

If a third party obtains sensitive data or software that reveals vulnerabilities in a popular voting system, [...] the attacker could devise attacks that could be used against other jurisdictions that use that system.

counties.⁸⁷ If a third party obtains sensitive data or software that reveals vulnerabilities in a popular voting system, and this information finds its way into the hands of a well-resourced attacker, the attacker could devise attacks that could be used against other jurisdictions that use that system.

A well-resourced foreign adversary like Russia – which attempted to attack election infrastructure in 2016 – could build connections with a group that compromises election equipment and try to obtain copies of the software. Moscow has made similar recent attempts to infiltrate U.S.-based groups; in 2018, Russian national Maria Butina was convicted of acting as a foreign agent for her work advancing Russia's interests, which included infiltrating the National Rifle Association.⁸⁸ It is not implausible that Russia could infiltrate these groups, or at least convince their members to share data, effectively turning them into unwitting foreign agents. Sophisticated attackers might then use this information to create attacks that could change the outcomes of elections or even just cause chaos by disabling elections equipment at critical times – a notion that election security researcher Halderman recently called “an absolutely terrifying prospect.”⁸⁹

Violation of voter privacy

Access to election equipment and materials are typically kept under tight safeguards not only to protect the integrity of future elections, but to protect the privacy of registered voters. Voter registration databases typically contain confidential information about voters, such as their social security numbers or birthdays.⁹⁰ Video of the Coffee County, GA, breach, obtained in September 2022, shows contractors handling electronic pollbooks which contain copies of voter registration databases. In a court case about the breach, one lawyer told the judge that “his group suspected that the ‘personally identifiable information’ of roughly 7 million Georgia voters may have been copied.”⁹¹ A spokesperson for Georgia’s secretary of state suggested that the voter

87 Geller, E. (2022, September 9). [‘Absolutely terrifying prospect’: How the midterms could weaken U.S. election security](https://www.politico.com/news/2022/09/09/absolutely-terrifying-prospect-000547). *Politico*. [perma.cc/547F-XRSN]

88 Prokop, A. (2018, July 19). [Maria Butina, explained: the accused Russian spy who tried to sway US politics through the NRA](https://www.vox.com/2018/7/19/18111111/maria-butina-explained). *Vox*. [perma.cc/QX7H-SYZG]

89 Geller, E. (2022, September 9). [‘Absolutely terrifying prospect’: How the midterms could weaken U.S. election security](https://www.politico.com/news/2022/09/09/absolutely-terrifying-prospect-000547). *Politico*. [perma.cc/547F-XRSN]

90 National Conference of State Legislatures. (2022, September 28). [Access To and Use Of Voter Registration Lists](https://www.ncsl.org/research/elections-and-campaigns/access-to-and-use-of-voter-registration-lists.aspx). [perma.cc/XX7L-JK6X]

91 Hakim, D., Fausset, R., & Corasaniti, N. (2022, September 20). [Videos Show Trump Allies Handling Georgia Voting Equipment](https://www.nytimes.com/2022/09/20/us/politics/georgia-voting-equipment.html). *New York Times*. [perma.cc/R4WW-EC9U]

information was encrypted. However, given that the actors in the Coffee County breach appear to have gained the full cooperation of county election officials, it does not seem implausible that the election officials could have provided them with the passwords required to access the data in full.

Policy Options

Given the critical role that auditing can play in our election system and the lack of consistency, regularity, and comprehensiveness in post-election audits in the U.S. (when they do occur), we think it is time to consider implementing national standards for audits or auditors.

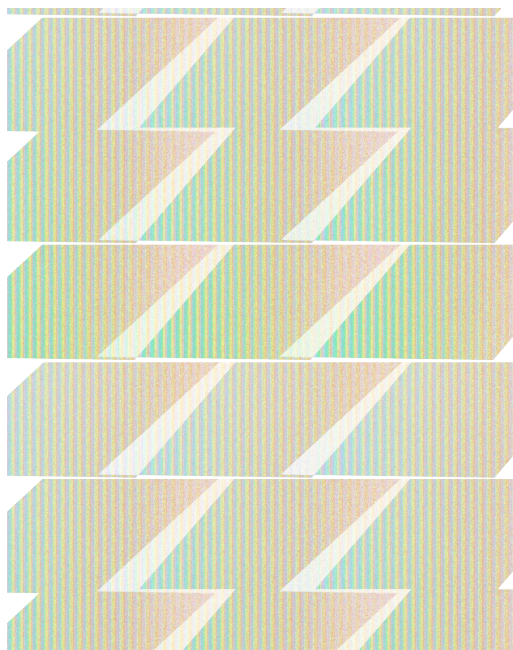
At an event in July 2021, leading election audit expert Jennifer Morrell posed the question of whether “we might want to consider having some sort of national standard” for post-election audits.⁹² Given the critical role that auditing can play in our election system and the lack of consistency, regularity, and comprehensiveness in post-election audits in the U.S. (when they do occur), we think it is time to consider implementing national standards for audits or auditors.

In keeping with the principles listed above, we strongly recommend the use of trustworthy post-election audits, particularly tabulation audits, be expanded. Tabulation audits should be a routine part of election administration, covering many contests. And the details of post-election audits should be fully transparent to the public.⁹³ Many resources, including those cited in this report, are available to election officials who want to conduct better post-election audits. But as more and more states implement robust post-election auditing, they need standard procedures they can rely on; each state should not have to re-invent auditing procedures beyond what is necessary to adapt standards to the specific details of their state. Moreover, all post-election audits, tabulation or otherwise, should be carried out only by objective, qualified auditors. Standards could be implemented in a way that allows election officials to formally distinguish between qualified and unqualified auditors.

If a sham review is conducted that doesn’t meet the standards, reporters and members of the public could more easily identify it as a sham. Hopefully, this would disincentivize, in advance, actors who might solicit or conduct a sham review.

92 National Conference of State Legislatures. (2022, July 21). [What is an Election Audit?](https://www.youtube.com/watch?v=Z6HP-R4LK) (08:24) *YouTube*. [perma.cc/Z6HP-R4LK]

93 Garland, L., Lindeman, M., McBurnett, N., Morrell, J., Schneider, M.K., & Singer, S. (Eds.). (2018, December). [Principles and Best Practices for Post-Election Tabulation Audits](https://www.principlesandbestpracticesforpost-election-tabulation-audits.org/), p. 10. [perma.cc/HQE5-KYTD]



We offer three policy options for standardizing how post-election audits are conducted in the U.S., all of which admittedly carry the risk of adding additional red tape to the election auditing process. But, given the potential benefits of standardizing post-election audits, as well as the risks posed by unqualified outside auditors, we think it is worth exploring these ideas. The careful implementation of one or more of these policy options would constitute a considerable improvement on the status quo of post-election auditing in the U.S. We welcome further discussion about which of these options seem most promising, as well as how to proceed with implementing them.

1. Audit standards drafted by a federal agency or a private sector body

As required by Congress,⁹⁴ the EAC is responsible for adopting the Voluntary Voting System Guidelines (VVSG), a set of requirements for voting systems.⁹⁵ States can choose to require their voting machines be tested according to the VVSG; a majority of states already do.⁹⁶

Congress could likewise require that the federal government create a set of standards and procedures for post-election audits that states could choose to require. Congress could order the EAC to create these standards due to the agency's focus on election administration. Congress could also consider giving CISA a role in drafting these standards, as CISA has been lauded for their technical expertise.⁹⁷

Alternatively, it could require the U.S. Government Accountability Office (GAO) to create them, due to its expertise in auditing government operations. The GAO already issues the Generally Accepted Government Auditing Standards (GAGAS),⁹⁸ a document that describes the characteristics of effective and ethical audits of federal, state, and local government operations. GAGAS does not deal specifically with election audits, but does describe a category of audit called a "performance audit," which has objectives analogous to those in a good post-election

94 U.S. Election Assistance Commission. (n.d.) [Help America Vote Act](https://perma.cc/9YL4-TYEX). [perma.cc/9YL4-TYEX]

95 U.S. Election Assistance Commission. (n.d.) [Voluntary Voting System Guidelines](https://perma.cc/XVU8-5QBZ). [perma.cc/XVU8-5QBZ]

96 National Conference of State Legislatures. (2021, November 5). [Voting System Standards, Testing and Certification](https://perma.cc/AYN5-DHY3). [perma.cc/AYN5-DHY3]

97 Masterson, M., DePew, J., Jonsson, K., Perkins, S., & Zaheer, A. (2021, October 14). [Zero Trust: How to Secure American Elections When the Losers Won't Accept They Lost, p. 12](https://perma.cc/SZQ8-8VB3). *Stanford Internet Observatory*. [perma.cc/SZQ8-8VB3]

98 Also referred to as the Government Auditing Standards (GAS) or the Yellow Book.

audit.⁹⁹ For example, GAGAS indicates that a performance audit may be intended to determine whether “a program produced intended results.” If applied to elections, “intended results” might mean “a correct election outcome.” Investigations of whether elections are properly secured may also qualify as performance audits; GAGAS indicates that performance audits may be aimed at determining, for example, whether “sensitive information... [is] safeguarded against unauthorized acquisition, use, or disposition” or whether “the integrity of information from computerized systems is achieved.” GAGAS therefore may serve as a strong foundation for a set of standards specific for auditing elections, regardless of which federal agency drafts the standards.

But audit standards could also be written by a private sector standards body. GAGAS indicates that auditors “may use GAGAS in conjunction with professional standards issued by other authoritative bodies.” For example, the nonprofit American Institute of Certified Public Accountants issues professional standards for audits conducted by certified public accountants.¹⁰⁰ It provides guidance for its members on how to follow both the GAGAS standards and the AICPA standards, which build on GAGAS.¹⁰¹ A private nonprofit election auditing standards body might be the right kind of organization to build on GAGAS and issue standards for auditing elections. In 2018, a group of audit experts drafted a set of principles for tabulation audits that was endorsed by several groups mentioned here, including CDT, the Brennan Center for Justice, and Verified Voting.¹⁰² This document may serve as a starting point for a broader and more detailed set of standards.

2. A credentialing system for independent auditors

Post-election audits are typically conducted by the same election officials who conducted the election itself.¹⁰³ Involving election officials in the audit is critical for ensuring, for example, that the audit does not misunderstand why a particular process was followed in the election. In general, this

99 U.S. Government Accountability Office (2021, April). [Government Auditing Standards, p. 11.](#) [[perma.cc/EEB4-QYAM](#)]

100 U.S. Government Accountability Office (2021, April). [Government Auditing Standards, p. 20.](#) [[perma.cc/VT7J-UTMB](#)]

101 American Institute of CPAs. (2015, June). AICPA — [Yellow Book \(GAGAS\) Independence Rules Comparison.](#) [[perma.cc/TYU5-9ZFM](#)]

102 Garland, L., Lindeman, M., McBurnett, N., Morrell, J., Schneider, M.K., & Singer, S. (Eds.). (2018, December). [Principles and Best Practices for Post-Election Tabulation Audits.](#) [[perma.cc/B9E6-RHXA](#)]

103 National Conference of State Legislatures. (2022, September 22). [Post-Election Audits.](#) [[perma.cc/6SP5-66ZG](#)]

Clearly, independent experts who are not election officials should play a role in election auditing. But there is currently no formal way to distinguish between unqualified or biased would-be auditors and more qualified, trustworthy auditors.

kind of “internal auditing” is an important function of many government agencies and private companies. But leaving audits solely in the hands of election officials may raise the question of whether the audit was truly independent. Indeed, GAGAS describes a threat to independence called “self-review threat,” which is present when the auditor (say, an election official) audits their own work.

Clearly, independent experts who are not election officials should play a role in election auditing. But there is currently no formal way to distinguish between unqualified or biased would-be auditors and more qualified, trustworthy auditors.

One option is to establish a private organization that grants credentials indicating that a person is qualified to handle and audit election-related materials like voting machines and ballots. Several examples of certifications indicate competencies related to election auditing. For instance, the International Association of Computer Investigative Specialists (IACIS) offers a certification program for digital forensics.¹⁰⁴ The EAC specifically recommends that third-party post-election audits involve audit teams with these credentials.¹⁰⁵ But while digital forensics experts may be well-versed in issues around digital and physical chain of custody, they may not understand the intricacies of auditing elections specifically. There is a need for a credentialing system specifically for election auditing.

After the establishment of a robust election auditor credentialing system, states could, for example, require that no one be allowed to handle election equipment except election officials, their staff, and independent experts with specific election auditor credentials.

3. State government election auditing offices

All states have an office, either in the executive or legislative branch, responsible for auditing government programs.¹⁰⁶ Given that they already have experience auditing in accordance with GAGAS, it may be appropriate to vest these offices with the responsibility for auditing

¹⁰⁴ International Association of Computer Investigative Specialists. (n.d.) [IACIS - Certification](https://perma.cc/3EUL-ZSNG). [perma.cc/3EUL-ZSNG]

¹⁰⁵ U.S. Election Assistance Commission. (2021, July 13). [Best Practices: Chain of Custody, p. 15](https://perma.cc/EV5G-WAXF). [perma.cc/EV5G-WAXF]

¹⁰⁶ Ballotpedia. (n.d.) [Auditor \(state executive office\)](https://perma.cc/7JNJ-7Y33). [perma.cc/7JNJ-7Y33]

elections – as proposed by legislators in Pennsylvania¹⁰⁷ and Arizona.¹⁰⁸ But this proposition has potential pitfalls that must be considered. For one thing, state auditors do not currently have expertise in elections. Secondly, they are often partisan elected officials, which may compromise their objectivity.

The National Conference of State Legislatures page on post-election audits does not indicate that state auditors are responsible for auditing elections in any state.¹⁰⁹ State auditing offices would therefore need time to build up the expertise and procedures necessary to properly oversee elections. In response to the Arizona state legislative proposal, Arizona Auditor General Lindsay Perry told state senators that her office had “no experience or expertise in elections laws or processes. Therefore, I would need to train and develop my experienced auditors in all things elections.” She also noted that, after the office was required to conduct new audits related to the state school system, it took about a year to prepare for the new audits.¹¹⁰ The law in Arizona¹¹¹ and other states requires that the auditor general be a certified public accountant – a certification that does not indicate expertise in elections. Having state auditors investigate elections may require comprehensive legislative updates to the powers, procedures, and required qualifications for these offices.

Requiring state auditors to audit elections would have the benefit of utilizing the offices’ general audit expertise. It would also address the self-review threat described in GAGAS, ensuring that post-election auditors are not the same officials that held the election in the first place – making the audit more independent.

However, while state auditors would be independent of election officials, they may not necessarily approach the job in a nonpartisan, objective fashion. In 24 states, the state auditor is a partisan elected position.¹¹² Because post-election audits review controversial outcomes, they may be higher profile than other government audits. Accordingly, there may

107 Wilson, R. (2021, June 28). [Pennsylvania GOP proposes creating election audit bureau](#). *The Hill*. [[perma.cc/463F-WMFN](#)]

108 Zetino, G. (2022, February 22). [Arizona Senate bill would require ‘election integrity audits’](#). *KTAR News*. [[perma.cc/QS5P-U5K2](#)]

109 National Conference of State Legislatures. (2022, September 22). [Post-Election Audits](#). [[perma.cc/6SP5-66ZG](#)]

110 Duda, J. (2022, February 18). [Auditor general: election audits wouldn’t begin until 2024 cycle](#). *Arizona Mirror*. [[perma.cc/K476-UQQS](#)]

111 [A.R.S. § 41-1279.01](#) [[perma.cc/7HL3-CCE8](#)]

112 Ballotpedia. (n.d.) [Auditor \(state executive office\)](#). [[perma.cc/7JNJ-7Y33](#)]

be an increased incentive for these auditors to conduct the audit in a way that benefits their party.¹¹³ Not many state auditors have successfully run for higher office, but auditing election operations could give an official with higher ambitions an opportunity to run their audit in a way that grabs headlines rather than focusing on objectivity.¹¹⁴

Because of the inherently partisan nature of elections, this policy option may be risky if implemented in a state where the auditor general is a partisan official with no elections expertise. It may be more effective in the states where the state auditor is a nonpartisan official,¹¹⁵ and if their office is given time to build up expertise in elections.

113 A similar conflict of interest is in place for chief state election officials, most of whom are also partisan elected officials. Gordon, G., Weil, M., Vanderklipp, A., & Johnson, K. (2022, April 6). [The Dangers of Partisan Incentives for Election Officials](#). *Bipartisan Policy Center*. [[perma.cc/G9TB-SK7M](#)]

114 Jacobson, L. (2015, August 9). [Why Don't More State Auditors Run for Higher Office?](#) *Governing*. [[perma.cc/4VBZ-FX29](#)]

115 Ballotpedia. (n.d.) [Auditor \(state executive office\)](#). [[perma.cc/7JNJ-7Y33](#)]

Conclusion

Routine and rigorous post-election auditing is the strongest tool available to election officials to generate public evidence that elections were held fairly and accurately – or to investigate when something legitimately appears to have gone wrong.

The 2020 presidential election opened up a “historically deep chasm” between Democrats and Republicans with regards to how much they trust the electoral system.¹¹⁶ This divide increases the need for a shared understanding of how an election was executed, making the need for good post-election auditing greater than ever.

But the same election conspiracy theories responsible for this trust divide have perverted the role of the post-election audit. Sham reviews have proliferated, undermining trust in elections, damaging election security, and costing taxpayers millions of dollars. Some of these sham reviews may have the appearance of a standard post-election audit – but they are instead *fraudits* carried out by unqualified, partisan actors intended to create distrust. Other reviews, which have some of the same goals as the fraudits, do not even attempt to convey the appearance of an audit and might be better considered breaches.

We have recommended policies that, if implemented carefully, would expand the use of good post-election audits, and mitigate the damaging effect of sham reviews by disincentivizing them. If the elections community collectively determines to move forward with such policy options, many details would need to be fleshed out. We look forward to future discussions about whether and how to move forward with all or any of these options.

The recommendations are by no means a panacea for what ails U.S. democracy. No matter how well elections are carried out, and no matter how convincing and well-

116 Persily, N., & Stewart, Charles, III. (2021, April). [The Miracle and Tragedy of the 2020 U.S. Election](https://www.journalofdemocracy.org/article/the-miracle-and-tragedy-of-the-2020-u-s-election). *Journal of Democracy*. [perma.cc/LQM5-3GHD]

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communicated election audits may be, there will likely always be the “winners-and-losers effect,” in which the losing candidate’s supporters are more likely to lose confidence in the electoral process.¹¹⁷ And confirmation bias, the tendency to believe evidence that affirms one’s beliefs, may lead voters unhappy with the outcome to believe in the evidence that favors their side.¹¹⁸ Displeased voters may therefore be partial to evidence that the election was rigged, even if that evidence comes from a biased and unqualified actor.

But, fundamentally, it is critical to have a shared, reliable, evidentiary basis to believe that an election outcome was correct.¹¹⁹ Improving post-election auditing standards and infrastructure is key to guaranteeing that evidentiary basis for future elections and diminishing the power of sham audits.

117 Persily, N., & Stewart, Charles, III. (2021, April). [The Miracle and Tragedy of the 2020 U.S. Election](https://www.journalofdemocracy.org/article/the-miracle-and-tragedy-of-the-2020-u-s-election). *Journal of Democracy*. [perma.cc/LQM5-3GHD]

118 Tracy, K. (2021, January 19). [The psychology behind why some may not believe presidential election results](https://www.wtlv.com/story/news/politics/elections/2021/01/19/psychology-behind-some-may-not-believe-presidential-election-results/7048446002/). WTLV-TV. [perma.cc/6PMH-ADQ6]

119 Stark, P.B. & Wagner, D.A. (2012, October). [Evidence-Based Elections](https://ieeexplore.ieee.org/document/6288888). *IEEE Security & Privacy*. [perma.cc/YBY8-LEMK]



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