In with the New Means Out with the Old:

Secure Voting Equipment Disposal

As our nation enters its second-wave election technology refresh, a tsunami of legacy voting equipment is slated for the scrap pile – or some other form of disposition. For jurisdictions planning to implement new election systems, properly disposing of old gear is a significant piece of the security puzzle.

Background: End of Life Voting Equipment

Almost twenty years after the 2000 presidential election put a spotlight on the equipment and procedures used to conduct U.S. elections, states and local election jurisdictions are preparing for the 2020 presidential election. The eyes of the world are once again on our country's election technology.

The Help America Vote Act (HAVA) of 2002 brought an influx of new technology into the elections landscape.[1] That technology has now reached end of life (EOL) and is being replaced to ensure the reliability and security of our elections. [2]

Unlike in the early 2000s when mechanical punch cards and rudimentary optical scanners were being replaced, today's legacy voting equipment includes a multitude of electronic components, proprietary software and the ability to store data. These factors add to the challenges of secure sanitization and disposal of the EOL equipment without any repercussions.

Proper disposition of a system, with all the security and environmental considerations to navigate, is a laborious, time-consuming and expensive process requiring specific expertise and budgetary funding. With the many time-sensitive tasks necessary to manage the implementation of new voting technology, disposal of EOL

1   https://www.eac.gov/about/help-america-vote-act/
2   https://www.eac.gov/2018-hava-election-security-funds/

voting equipment may not be top of mind for election officials. Yet a critical component of any security program surrounding a new system implementation is the secure disposal of legacy or EOL technology. Simply stated, anything but secure destruction of EOL voting equipment is dangerous and opens jurisdictions to a host of potential nightmare scenarios.

Preparing your equipment for disposal

Before being disposed of, election equipment must be either wiped clean, have firmware or software removed or be destroyed so that it is permanently non-functional in any capacity. Simply deleting files from a device does not eliminate the files beyond recovery; technicians with forensic skills can recover files from memory.

Wiping data from your jurisdiction's voting devices prior to disposal, sale, or destruction can mitigate the potential for unscrupulous resurrection and misuse of your election and voter data. Nefarious use of this data can include man-in-the middle attacks, ransomware exploits, social engineering to gain other critical information by posing as your jurisdiction, and potentially casting doubt on a jurisdiction's election processes by sharing illegally obtained data.[3]

To aid election officials with the task of wiping data from your election technology, the U.S. Election Assistance Commission (EAC) produced *"Wiping Election Equipment Before Disposal, Sale or Destruction."* [4] In part, it states:

> "Election officials, specifically, need to perform their due diligence to make sure that any proprietary information such as voting system software or firmware, election data, such as ballot selections and vote totals, and any personal information such as voter registration data, has been properly sanitized from those devices before they dispose of, sell, or destroy election equipment. This equipment can include everything from voting devices to electronic pollbooks, and servers."

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3 https://www.csoonline.com/article/3340117/what-is-a-man-in-the-middle-attack-how-mitm-attacks-work-and-how-to-prevent-them.html

4 https://www.eac.gov/assets/1/6/Disposal_Sale_Destruction_Voting-Equipment_FINAL_10.13.17.pdf

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As part of the equipment destruction process, any materials that make up the voting units can be recycled. This helps protect our environment by properly disposing of batteries and other materials, so they do not taint our landfills. It also assists organizations that can put raw recycled materials like glass, metals, plastics and wires to good use.

Managing EOL voting equipment

Many jurisdictions have thoughts of offsetting the costs of their new system by selling their EOL equipment on eBay, Craigslist, or electionline.org.

The market for used voting equipment is limited, though. Your EOL equipment does not have much, if any, useful life left, especially after transport to a new location.

Most jurisdictions that search for decades-old equipment to purchase will use it as reserve units or for spare parts for their legacy equipment fleet while planning – and saving – for their own new system implementations. Buying used equipment from another jurisdiction can create more problems than it solves. Without having a complete record of the chain of custody, the buyer has no way to know if the equipment has been set up for a man-in-the-middle attack, for example. Buying used equipment from another jurisdiction is not worth the perceived "savings."

Placing your voting equipment for sale encourages the passing on of an antiquated and potentially problematic system to a new owner. It is best for the whole election community that those systems be replaced with the most secure, accessible and advanced technology available.

Additionally, potential bad actors – or even nation-states – could be searching for voting equipment used in U.S. elections. Your voting equipment can fall into the wrong hands and create problems, or the perception of problems, especially if these machines have not been properly backed up and scrubbed of their software, firmware and jurisdictional election data before being sold.

This leaves the secure destruction of an EOL voting system as the best option.

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Getting help

Most voting technology providers have existing relationships with certified secure technology disposal partners and can manage this process more efficiently, securely, and cost-effectively than a typical elections office. Technology providers can often take advantage of economies of scale that would not be available to a small county, for example.

The best course of action is to plan ahead for the EOL of your equipment at the outset of any technology project. Thus, if drafting a request for proposal (RFP) now for new voting technology, consider adding a requirement for voting technology providers who want your business to manage the secure, environmentally friendly, and cost-effective disposal of your jurisdiction's current voting equipment as part of your new system implementation.

If your jurisdiction is past the RFP process and in the midst of your new system implementation with equipment disposal needs, there is still time to gain assistance from your incumbent voting technology provider. Check to see whether the responsible disposal of your EOL technology is covered under your current contract or maintenance and support agreement. Even if your current provider is not currently contracted to provide this to you, they may still perform this service at low or no cost to your jurisdiction.

Your new technology provider would be the logical next call. Like election officials, election technology providers have a keen interest in keeping equipment secured and out of the hands of potentially unscrupulous characters who may wish to do harm or broadcast the perception of doing such. It is in the best interest of the entire election community, and our national security, to properly dispose of legacy and EOL voting equipment.

What to require from your EOL equipment disposal partner

Once you've decided to work with a partner to securely destroy your EOL voting equipment, document your needs and deadlines for this process and confirm that your provider can comply.

Carefully review the EAC's best practices as well as the National Institute of Standards and Technology (NIST) Special Publication 800-88 Revision 1, "Guidelines for Media Sanitization" with your chosen partner and make sure they are working with a certified provider for destruction services. [5]

The EAC advises that before disposing of, selling, or destroying any voting equipment or election technology you perform all necessary backups. Your jurisdiction should also obtain a certificate of destruction from your partner and retain documentation of your equipment's destruction.

Conclusion

The chain-of-custody of voting equipment and all past election data is paramount, even when disassembling and destroying that equipment. Proper destruction of voting equipment with transparency and communication among all parties mitigates security holes and safeguards our nation's critical infrastructure of voting technologies past and present.

Secure destruction of EOL voting equipment requires that you work with a partner you trust to get the job done efficiently, securely, safely for the environment and timely, producing all necessary records and documenting chain-of-custody.

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5   https://ws680.nist.gov/publication/get_pdf.cfm?pub_id=917935

About Hart
Austin-based Hart InterCivic is a full-service election solutions innovator, partnering with state and local governments to deliver secure, accurate and reliable elections. The company's all-new Verity Voting system makes voting more straightforward, equitable and accessible – and makes managing elections more transparent, more efficient and easier. Only Hart offers a completely new, secure voting system that supports paper, electronic and hybrid voting.

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