February 7, 2019

Dear Commissioners Diane Ellis-Marseglia, Robert Loughery, and Charley Martin,

Choosing a new voting system is a crucial one with long-term consequences. I'm sure you agree that the most responsible decisions are made when one's information about an issue is as comprehensive, well-sourced and balanced as possible. Since it's important to not rely primarily on vendor information, we ask that you give our research serious consideration. We offer everything from the big picture to little details, since we have no idea what facts you already know and what could prove useful in helping you make the most responsible choice.

To start the process, the main reason that our system needs to be changed in the first place needs to be clearly spelled out:

 **The top priority is that Bucks County gets the system that is the most secure, verifiable, and resilient and on which can be proven that our election results reflect the will of the voters.**

Luckily, cybersecurity and election experts have the answer. The fact that the type of voting system they recommend also happens to be the least expensive and easiest to use should make everyone happy!

Our information will be listed in the order your decision will need to proceed so the top priorities of security (least vulnerable), verifiability (voter knows his vote is cast as intended), resiliency (ability to operate during emergencies, machine failure), and accuracy (election results are provable) are preserved at every step.

Once these non-negotiable criteria are met, weighing the benefits of cost, ease of use for election officials and voters, and other factors will help narrow down your choices.

Your first step is choosing the best type of voting system, the second step is deciding which vendor can best meet all of the above criteria.

**There are two types of voting system configurations available**, differing in how voters mark their ballots. Voters will either hand- or machine-mark their ballots, then insert them in scanners which tally and retain them in the scanners' secure containers to be used for future audits and possible recounts.

1.  Voter-hand-marked paper ballot (VHMPB) systems:
    Most voters hand-mark their ballots in privacy booths. One accessible ballot-marking-device (BMD) is in each precinct for voters who are unable to hand-mark their ballots.
    **Equipment needed per precinct: One scanner, one BMD, privacy booths, pens.**
    **All five vendors can provide this system.**

2. <u>BMDs-for-all systems:</u>
All voters use electronic touchscreen BMDs to machine-mark their ballots, not just persons whose disabilities prevent them from hand-marking a ballot.
**Equipment needed per precinct: The number of BMDs would be at least equal to or greater than current levels of DREs used, plus a scanner.**
**Four vendors are pushing for this system configuration (Clear Ballot is not).**

The bottom line is this: <mark>**Cybersecurity and election experts overwhelmingly believe that the systems that use <u>voter-hand-marked</u> paper ballots best meet all of the vital criteria of security, accuracy, verifiability and resiliency.**</mark>

**The "BMDs-for-All" systems are highly discouraged by election security experts**. The most important core argument is that although such systems may be theoretically voter-verifiable, <u>in practice they rarely are</u>, which undercuts the verifiability and accuracy reasons for getting paper-based systems. BMDs were developed and mandated to be available for those who are unable to hand-mark paper ballots, to provide an independent way to vote. For the majority of voters, they were never meant to replace the hand-marking method which is inherently, automatically voter-verified in one step, with no technology between the voters and their ballots. BMDs introduce unnecessary security vulnerabilities, especially ones which print ballots with barcodes.

**The pros and cons** of both of these types of systems are laid out extensively in the enclosed handouts and reports, which reflect the most current expert recommendations. We will send all of these in an email so you can link to all information in the handouts, articles and reports.

- **"Basic Security Requirements for Voting Systems"** article by computer scientist
- **Excerpts of articles** that spell out the serious security concerns to be aware of
- **Letters** written by 24 cybersecurity experts and 3 national election integrity groups
- **"How to Choose the Best Voting System"** handout

**Now that we firmly acknowledge that the VHMPB system is the <u>best type</u> of system, we can move to the next step, using relevant, expert recommended information to narrow down which vendor to use. Obviously, this will be your ultimate decision but we believe that you should be aware of every factor to consider when making your deliberations.**

Our **"How to Choose the Best Voting System"** handout incorporates expert recommendations (especially ones regarding our prime criteria) in a list to make it easy to evaluate the voting system components made by all five vendors.

Our **"Vendors and Their Products"** handout uses that information to clearly note what constitutes a Feature (pro) or a Concern (con) about each vendors' hardware and software products, making comparisons easier. **Concerns** should be taken seriously because they denote security, verifiability or voter anonymity problems. Comparing features can help distinguish vendor products from each

other. You can go to our website (www.SAVEBucksVotes.org/the-solution) to easily access links to vendor websites and other important information.

## Additional information not on other handouts

Cost considerations:

- Some officials have concerns about the cost and possible waste of printing out paper ballot amounts numbering 110% of a county's registered voters. The number required will soon be lower, to possibly 110% of an average of actual votes cast in the past 3 elections, or a similar proposal. PA Election Code revisions are in the works; in any case, the use of one BMD in a precinct, which uses blank paper, already changes the equation.
- Clear Ballot and Hart also have precinct ballot-on-demand equipment that can be considered.
- Leasing equipment instead of purchasing can be a cost-saving measure. It would also allow easier upgrading of equipment in a few years as technology continues to improve, and help the county to be more resilient for future challenges.
- There will be COSTARS prices available soon, but counties can often negotiate for lower prices. We have links to RFPs for all five vendors for the state of Georgia with prices redacted, but looking them over may give you an idea of how they structure their services, what's included, etc. If you think this info would be useful, let us know.

Security concerns:

- Jurisdictions outsource some or much of the voting system and election duties to outside vendors, as Bucks County is currently doing. How secure this option is depends on factors you must consider carefully. No matter how many election security protocols our county officials may be following here, the vendor's security environment is completely out of your control. (I can send links about this issue). If you have them preparing your ballot definition files, for example, you have to **just trust** that there has been no outside intrusion, intentional mischief or just plain mistakes made. Wouldn't you feel more secure training your own person(s) to do some of those vulnerable duties? Many of the new ballot definition and other EMS software programs are very user friendly, and some of the new hardware is easier to service, transport and maintain for better chain-of-custody protocols.
- We have specific concerns about some of ES&S's products and business practices. This info can be accessed from links on our website under vendor product information.

Setting up a meeting prior to your decision to discuss the issue is welcome. We are always available if you have any questions, either in person (easier for back-and-forth) or by phone or email. Thanks for your consideration,

Janis Hobbs-Pellechio, president  www.SAVEBucksVotes.org
267-218-3760  or   hobbspellechio@email.com