

## OPTICAL SCANNERS vs DREs

### CRITERIA FOR JUDGING VOTING SYSTEMS

- |                  |                  |
|------------------|------------------|
| 1) Reliability   | 4) Transparency  |
| 2) Accessibility | 5) Security      |
| 3) Accuracy      | 6) Verifiability |

Convenience is not a valid criteria!

### ADVANTAGES OF OPTICAL SCANNER

1. Paper ballots are inherently voter verified
2. Easy and intuitive for voters and poll workers
3. Ballots are easily counted by hand
4. Lowest rates of invalid ballots
5. Easy to add voting booths at low cost
6. Reliable, auditable, accessible, cost effective.
7. If large voter turn-out - can just add polling booths; w DREs - need to add machines.
8. Optical scanners are a reliable, mature technology that has been used successfully in US elections by 35% of voters in 46% of counties for as many as 20 years, and have been proven to have a high degree of security and accuracy.
9. A survey by New Yorkers for Verified Voting of the **865 counties** currently using OpScan devices shows a **very high degree of satisfaction** with the equipment, an absence of problems, little if any voter and poll-worker training, and minimal maintenance requirements and storage costs. No states that presently use OpScan technology are switching to DRE's.

OpScan Survey: 865 counties: very happy and pleased re:

Time to fill out ballots (a few minutes)

Time to scan -(instant to a few seconds)

No lines to vote (or rarely - 5 seconds)

Minimal poll worker training, very easy to learn (equal to lever machines, 0 to 1½ hrs.)

Basically NO VOTER TRAINING to minimal voter training. (Unanimous: easy, easier than any known alternative, voters find easy)

Polling place preparation - 1 to 3 hours

Scanners rarely fail, voters can keep voting if they do.

Testing of scanners done locally, usually only takes several minutes.

10. Conclusion: Low failure rate, long lifespan, high reliability, low cost to run elections and to maintain, easy to learn and easy to use.

### DISADVANTAGES OF DREs

1. Failures and problems in real elections

Miami Dade - so many errors that the Supervisor of Elections recommended scrapping the \$24.5 million DREs and purchasing paper ballot op scanner

2. Actual costs always exceed predicted costs

a. Miami Dade - DRE'S cost \$6.6 million to operate in 2004 presidential election - twice what was budgeted!

b. Orange County spent less than \$2 million to run election on op scan; less than 1/3 of Miami Dade

3. Election officials forced to rely increasingly on private corporations to run OUR elections

4. High purchase cost and high maintenance cost.

a. Purchasing contract included 400 days worth of tech support from vendor - used up within the first year,

b. County negotiates the rate and number of days for vendor support before election - price has been as high as \$1,000/person/day.

5. Relatively new, unproven technology.

It is recommended never to choose version 1.0 of any software. No one knows how to write bug-free software. The more complex the software, the more difficult it is to find the bugs, and election software is very complex. Computer experts say today's voting machines are prone to errors and vulnerable to fraud. Even thorough testing can't reveal malicious programs that could subvert an election.

6. Security problems

Malicious code embedded into the software could go undetected. Neither close inspection of the code nor thorough testing of the computer could ensure that malicious software has not slipped through the cracks. Studies by major universities and computer scientists all indicate that DRE's are the "most reported to have security flaws" of any voting system in recent years, and are vulnerable to vote corruption and tampering at all levels: by voters, hardware and software manufacturers, operating system developers, poll workers, even ISP's. Possible security errors:

Vote multiple times

Cause votes to be miscounted

Tamper with audit logs

Delay the start of voting

Modify party affiliation

Create, delete and modify votes

Insert backdoors into code

Close down voting.

7. Federal funds only cover the INITIAL PURCHASE. All subsequent costs will be incurred by the state, counties and towns.

8. Voter verification is not inherent and will often be ignored by voters if there are lines of people waiting to vote.

9. Using DREs may be intimidating to some people, especially those who do not use computers and who may therefore not even try to vote. (In one Ohio county senior citizens threatened not to vote if DREs were purchased. The county purchased op scanners.)

10. Conclusion: Analysis of the counties using DRE's are a laundry list of problems: long lines due to equipment failure, flawed vote counts due to hardware and software failures, and operational cost overruns exceeding predicted costs.

**Why is this discussion necessary** when there is NO DOUBT that, in every way, optical scanners are a better voting machine than DREs? Vendors have spent millions of dollars lobbying lawmakers to pick their DRE systems. Until very recently, when they were finally forced, they refused to even present optical scanners for NYS certification. The vendors know that DREs will provide continuous revenue to them for maintenance and technical repair and replacement. They stand to make much bigger profits on DREs (at the expense New York taxpayers), so their preference is not surprising.