

## "Are voter-verified paper ballots cost-effective?"

**Answer: Yes!** Acquisition and operating cost comparisons show the most auditable and accessible choices are usually the most cost-effective—not only to purchase, but to use and maintain.

---

A voter-verified paper ballot (VVPB) does not have to mean expensive printer retrofits. A VVPB system may be achieved by retaining an existing paper-based optical scan ballot system, or replacing any DRE, lever, or punch-card system with optical scan, and supplementing with one accessible ballot-marking device per precinct. Because fewer machines (2) are needed per polling place than with DRE systems (6 or more), the acquisition cost is significantly lower.

Long term, these systems typically have **lower operating costs**—despite the ongoing printing of ballots. When Michigan adopted optical scan as their uniform statewide voting system, they cited cost savings, greater ease of use for election officials and voters, a physical tangible ballot that can be **verified** by the voter before it is cast, ability to accommodate unanticipated voter traffic with little or no notice by erecting simple additional voting stations, and a tangible audit trail to resolve disputes over accuracy of the system. A key point: the **more balloting methods** in operation in a county, the **greater the administrative burden and** cost at the county level.<sup>1</sup>

Florida's Miami-Dade County has learned that DRE systems incorporate many hidden costs – so much so that they are currently considering scrapping their \$24.5 million investment in DREs in favor of the more cost-effective and reliable optical scan voting system.<sup>2</sup> Wyoming's Secretary of State noted his concern in a letter to his legislature about the many **hidden costs** he had learned were involved with obtaining new electronic systems<sup>3</sup>. And Maryland's Governor was stunned to see initial DRE purchase costs balloon 78% over estimate, and annual maintenance costs skyrocket over 1000% (yes, one thousand) in just four years.<sup>4</sup>

If jurisdictions must use DREs, the least-costly way to get voter-verified paper ballots is to obtain DRE + printer at the same time, negotiating a contract that either offers the printer for **free** (as in San Diego County, CA) or "*better than free*" (Ohio's Secretary of State obtained a lower bid for DRE + Printer than the original bid for paperless DRE!). *HAVA funds can be used.*

If a printer retrofit is necessary in counties already using DREs, legislation such as the "**Voter Confidence and Increased Accessibility Act**" (HR 550) will make the gap funding available.

A final note: no matter what the cost of the voter-verified paper ballot, it is lower by far than the cost of an unverifiable election in which votes were irretrievably lost for want of a VVPB.

---

<sup>1</sup> Source: [http://www.michigan.gov/documents/Uniform\\_Voting\\_System\\_2\\_71046\\_7.doc](http://www.michigan.gov/documents/Uniform_Voting_System_2_71046_7.doc)

<sup>2</sup> Source: Miami Herald, May 26, 2005: <http://www.verifiedvotingfoundation.org/article.php?id=5808>

<sup>3</sup> Source: October 15, 2003 letter: <http://soswy.state.wy.us/press/HavaFunds.pdf>, page 3

<sup>4</sup> Source: February 15, 2006 letter, <http://www.verifiedvotingfoundation.org/downloads/gillesburgerltr10.pdf>

For more information, please see:  
<http://www.VerifiedVoting.org>  
<http://www.VotersUnite.org>

## SAMPLE ACQUISITION COSTS

**NORTH CAROLINA**<sup>5</sup> has 2,752 regular precincts, 128 early voting precincts: 2880 total. There are 5,519,992 registered voters in the state's 100 counties. Current equipment breakdown:

Optical scan (OS)	DRE	Punchcard	Lever	Paper
1265 precincts	1219 precincts	222 precincts	29 precincts	17 precincts

- Optical Scan precincts need one ballot-marking device (BMD) to assist voters with disabilities/different language abilities (HAVA requirement) @ **\$5,000 per precinct.**
- Precincts converting to Optical Scan need one (1) optical scanner(for 2500 voters) @ \$4,700 + one (1) ballot marking device@ \$5,000 = **\$9,700 per precinct**
- Precincts converting to DRE systems would need to purchase one (1) DRE with VVPB for each 250 voters @ \$3,000/ea. (quantity varies with # of voters)

Total Cost for <b>Optical Scan + ballot marking device</b> statewide:	<b>\$20,550,500</b>
Total Cost to replace all systems with <b>DRE + printer</b> statewide:	<b>\$66,240,000</b>
<b>Estimated cost savings OS + BMD versus DRE + Printer:</b>	<b>\$45,689,500</b>

**MARYLAND**<sup>6</sup> decided to purchase DREs statewide in 2001. The estimated cost: \$36,890,000. The actual cost as financed by the State Treasurer was \$65,564,674: an almost **78% increase** from the original cost estimate. (To buy accessible opscan today: ~ \$18,000,000.)

**NEW YORK**<sup>7</sup> recently passed a voter-verified paper record requirement, and will soon replace its lever machines statewide. The cost for DREs is significantly higher due to the state's full-face ballot requirement (approximately \$8,000/ea). Each lever machine must be replaced with at least one DRE (for a minimum of about 3 machines per polling place, and up to 8 or more), but with optical scan, each polling place would need only one scanner and one ballot-marking device.

Estimated cost to obtain DRE + VVPB printer statewide:	\$230,470,000
Estimated cost to obtain OS + BMD statewide:	\$114,423,640
<b>Estimated Cost Savings OS + BMD versus DRE + printer:</b>	<b>\$116,049,360.</b>

**CONNECTICUT**<sup>8</sup> recently passed a voter-verified paper record requirement. The state seeks to replace its lever machines. An acquisition cost comparison shows significant cost savings for an optical scan (OS) + ballot-marking device (BMD) option versus a DRE + VVPR printer option.

Estimated cost to obtain DRE + VVPB printer statewide:	\$47,427,000
Estimated cost to obtain OS + BMD statewide:	\$24,098,000
<b>Estimated Cost Savings OS + BMD versus DRE + printer:</b>	<b>\$19,371,000</b>

<sup>5</sup> Source: <http://www.ncvoter.net/affordable.html> July 2005

<sup>6</sup> Source: February 15, 2006 letter, <http://www.verifiedvotingfoundation.org/downloads/gillesburgerltr10.pdf>

<sup>7</sup> Source: <http://nyvv.org/reports/AcquisitionCostDREvOptScanNYS.pdf> March 2005

<sup>8</sup> Source: [http://verifiedvoting.org/downloads/CT\\_Cost-analysis-model.pdf](http://verifiedvoting.org/downloads/CT_Cost-analysis-model.pdf) March 2005

For more information, please see:  
<http://www.VerifiedVoting.org>  
<http://www.VotersUnite.org>

## SAMPLE OPERATING COSTS

**NORTH CAROLINA**<sup>9</sup> - The following chart compares annual operating expenses for 2004 in three counties. One uses optical scan, the other uses electronic voting machines (direct recording electronic, or DRE). Data is available for several prior years also. The ratio of costs per voter in these counties remains comparable for each year of operation.

County	Voting System	2004 Registered Voters	2004 Bd of Elections Annual Expenditures	2004 Cost per voter
Wake	Optical Scan	460,821	\$1,455,458	\$3.041
Mecklenburg	DRE	470,849	\$2,400,533	\$5.098

If Mecklenburg used OS instead of DREs, annual savings would be \$917,359. Upgrading Mecklenburg to opscan/ballot-marking: approx. \$1,840,000 (pays for itself in two years).

**FLORIDA**<sup>10</sup> – Comparing annual expenditures in a DRE county versus an optical scan county shows significantly higher **per-voter operating costs** for DREs.

County	Voting System	Avg Registered Voters (02-04)	Avg Supv of Elections Annual Expenditures	Avg 2002-2004 Cost per voter
Manatee	Optical Scan	182,399	\$1,379,405	\$7.56
Sarasota	DRE	232,360	\$2,883,658	\$12.41

“There would have been real savings if Sarasota had ... thrown away the DREs in April 2004 and spent \$600,000 to buy Optical Scanners for the entire county. The Elections Supv. said that paper ballots were expensive. Manatee bought ballots for \$0.20 each. 100,000 voters = \$20,000, trivial compared to the \$1,100,000 [adj. for voter ratio] that DREs cost Sarasota over opscan.”

**MARYLAND**<sup>11</sup> saw DRE annual **maintenance costs skyrocket over 1100%**. The original budgeted annual cost: \$858,000. Amount requested for upcoming fiscal year: \$9,528,597.

**NEW YORK**<sup>12</sup> - A dramatic difference in projected **storage costs** of DRE machines versus OS.

### Full-face DREs

- Weigh over 200 pounds and take up 28 cubic feet when stored; cannot be stacked
- One or more DREs are required to replace each lever machine.

### Optical Scanners / Ballot Markers

- Weigh 19-39 pounds and take up less than 4 cubic feet per device; can be stacked.
- One scanner and ballot marker is needed per polling place, except in largest precincts.

**OHIO**<sup>13</sup> counties are in sticker shock over the cost of **service contracts** for new touchscreens. “The small counties have a bigger need for these contracts, but won’t have the money to pay for them.” Franklin Co. (93,000 voters) needs \$1.3 million for this year. That works out to a cost per voter/year = \$14, nearly **twice as much** as last year.

<sup>9</sup> Source: <http://www.ncvoter.net>

<sup>10</sup> Source: <http://www.votersunite.org/info/costcomparisonaddendum.asp>

<sup>11</sup> Source: February 15, 2006 letter, <http://www.verifiedvotingfoundation.org/downloads/gillesburgerltr10.pdf>

<sup>12</sup> Source: <http://nyvv.org/reports/ComparingAnnualCosts%20DREvPBOS.pdf>

<sup>13</sup> Source: <http://www.columbusdispatch.com/?story=dispatch/2006/03/05/20060305-C1-00.html>

For more information, please see:  
<http://www.VerifiedVoting.org>  
<http://www.VotersUnite.org>