



# POLICY BRIEF 13

## VOTING TECHNOLOGY IN THE UNITED STATES

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In the wake of the 2000 presidential election and the Florida ballot recount controversy, election officials and policymakers are considering dramatic changes in voting technology and election administration. The election of 2000 brought to light the phenomenon of unrecorded votes (the difference between the total number of voters who go to the polls and the number of valid votes cast in a particular contest). Studies indicate that many ballots are disqualified because of voter errors resulting from confusing ballot designs or from complicated or defective voting equipment.

In 2002, Congress passed, and President Bush signed into law, the Help America Vote Act (HAVA). The law authorizes almost \$4 billion to help states replace old voting equipment and upgrade election administration in other ways. The law also requires election officials to provide access to voters with disabilities at every polling place and to adopt “second-chance” voting methods that allow voters to identify and correct mistakes. Finally, the recently passed federal appropriations for fiscal year 2003 includes roughly \$1.5 billion to begin the HAVA election reform efforts. Since the 2000 elections, over 360 counties upgraded their voting technology and many more jurisdictions are poised to follow suit in response to the recently passed federal legislation. What types of voting technology are used in the United States, and what do we know about them?

Generally, five different methods of voting are used in the United States: paper ballots, lever machines, punch card machines, optical scan ballots, and direct recording electronic (DRE) machines. The table on the following page describes each voting method and indicates how many counties used each method in recent national elections. A map showing the type of voting equipment used in each county in the United States can be viewed at <http://www.umsl.edu/~kimball/type02.jpg>. Older voting methods (punch cards, lever machines, and paper ballots) are gradually being replaced by newer technologies (optically scanned ballots and DREs). Electronic “touch-screen” voting machines have made the biggest jump in market share in the last two years.

When it comes to voting, not all “new” methods are the same. As states and

counties consider new voting methods, they should keep in mind several research findings:

- Punch card voting methods have a higher rate of unrecorded votes than any other voting technology. Voters are more likely to make mistakes with punch card ballots.
- Newer touch-screen DRE machines have a lower rate of unrecorded votes than older full-face and push-button DRE machines.
- Precinct-count optical scan voting methods have a lower rate of unrecorded votes than central-count optical scan systems.
- Full-face DRE voting machines and central-count optical scan voting systems do not perform much better than most “old” voting methods (especially paper ballots and lever machines).
- In the short term, optical scan systems are less expensive than DRE voting machines, but electronic voting machines are more accessible to voters with disabilities.

**Table 1  
Voting Methods Used in 2000 and 2002**

Technology	Description	Counties		% of Voters	
		2000	2002	2000	2002
Punch Card - Votomatic	Punch card is inserted behind booklet with ballot choices -- voter uses stylus to punch out holes in card. Ballots counted by card reader machine.	512	436	27%	19%
Punch Card - Datavote	Ballot choices are printed on punch card -- voter punches out hole next to chosen candidate. Ballots counted by card reader.	44	26	3%	2%
Lever Machine	Candidates listed by levers on a machine -- voter pulls down the lever next to chosen candidate. Machine records and counts votes.	406	292	16%	14%
Paper Ballot	Candidates are listed on a sheet of paper -- voter marks box next to chosen candidate. Ballots counted by hand.	331	298	1%	< 1%
Older DRE (full-face)	Candidates listed on a full-face computerized screen -- voter pushes button next to chosen candidate. Machine records and counts votes.	300	320	11%	12%
Newer DRE (touch screen)	Candidates listed on a scrolling computer screen -- voter touches screen next to chosen candidate. Machine records and counts votes.	29	224	1%	11%
Optical Scan -- Central Count	Voter darkens an oval or arrow next to chosen candidate on paper ballot. Ballots are counted by computer scanner at a central location.	891	827	15%	11%
Optical Scan - Precinct Count	Voter darkens an oval or arrow next to chosen candidate on paper ballot. Ballots are scanned at the precinct, allowing voter to find and fix errors.	552	625	23%	26%
Mixed	More than one voting method used.	83	100	4%	5%

**LIVABLE** communities don't just **HAPPEN**.  
They are **CREATED** by the **PEOPLE** who **LIVE** in them.