



Basics of County Elections Equipment

North Carolina Counties are responsible for conducting, administering, and financing elections through the county board of elections. This includes maintaining voter registration records, establishing precincts and voting places, selecting and purchasing voting equipment, and holding hearings on challenges to voters and on election protests, among other things. While county boards of elections must follow the direction of the State Board of Elections, they are funded by counties.

Following the hanging chads election debacle in 2000, the United States Congress passed the Help America Vote Act (HAVA). This law “created new mandatory minimum standards for states to follow in several key areas of election administration, including improvements to voting systems and voter access.” Congress also provided “funding to help states meet these new standards, replace voting systems, and improve election administration.”¹ Additionally, the North Carolina General Assembly passed legislation that centralized all approvals for voting machines in the hands of the State Board of Elections and required all machines to produce a written record of each vote.

In 2013, the North Carolina General Assembly passed Session Law 2013-381 (HB 589), VIVA Election Reform.² Section 30 of this legislation requires counties that use a touch screen voting system (Direct Record Electronic or DRE) to replace this equipment with voting systems that produce a “paper ballot” effective January 1, 2018. The legislation defines a paper ballot as “an individual paper document that bears marks made by the voter by hand or through electronic means.”

The Fiscal Research Division of the General Assembly prepared a fiscal note³ on the impact of this legislation on both the State and county governments. The fiscal note showed that this change would cost the 36 counties that reportedly use touch screen voting systems a total of \$10,918,713 by 2018.

This amount includes:

- 989 new optical scan machines at \$5,995 each = \$5,929,055,
- 1,449 AutoMark devices at \$1,995 = \$2,890,755,
- 2 voting booths per voting site at \$150 each (1,574 sites) = \$472,200,
- \$3,253,406 for ballots at \$.25 for each ballot if two elections are held per year, and
- an unknown cost for ballot storage.

¹ http://www.eac.gov/about_the_eac/help_america_vote_act.aspx

² <http://ncleg.net/Sessions/2013/Bills/House/PDF/H589v9.pdf>

³ <http://ncleg.net/Sessions/2013/FiscalNotes/House/PDF/HFN0589v7.pdf>

Current Voting Systems:

There are currently only three voting machines that are certified by the State Board of Elections and all three are from the manufacturer Elections Systems & Software (ES&S). Most of the voting machines were purchased in 2006 using both HAVA and county funds and were delivered and implemented during the 2006 mid-term and 2008 presidential elections.



M100: is an optical scan voting machine that is used to count paper ballots marked by the voter or AutoMARK device.



AutoMARK: is used in conjunction with the M100 voting machine for voters with disabilities. The AutoMark fills out the paper ballot with the selections made by the voter and can magnify the ballot as well as provide audio cues if needed.



iVotronic: is a Direct Record Electronic (DRE) touchscreen voting machine that allows voters to make their selections on the screen. A Real-Time Audit Log (paper roll) next to the voting machine records each action taken by the voter.

The State Board of Elections reports the type of election equipment used by each county (see below for a summary and Appendix A for county by county information). The information from the State Board of Elections showed that a large majority of counties already use the M100 and AutoMARK with paper ballots, but 35 counties (one less than reported by Fiscal Research) use the iVotronic machines for at least a portion of voting.

	Election Day	Election Day ADA	One-Stop	One-Stop ADA
M100	76		69	
AutoMARK		67		65
iVotronic	24	33	31	35

To obtain some county perspectives on electronic voting machines the NCACC interviewed five election directors in counties that used the iVotronic DRE machines in July 2013. They were asked about their county's use of the electronic voting machines and the costs that would be required to change to election equipment that produced a paper ballot.

Vote Confirmation:

The election directors report that the iVotronic DRE requires voters to confirm their vote choices twice before they have finished voting. In addition to on-screen confirmation, the Real Time Audit Log (paper roll) records and shows the voter all actions that have been taken in real time, including any changes the voter made while voting.

These paper rolls are considered to be ballots and are used in recounts. Counting votes with the paper rolls is an entirely manual and time consuming process, as the rolls must be loaded by hand. Like paper ballots, these vote rolls are kept by the county for 22 months, according to the State Board of Elections Records Retention Schedule.

Additionally, after Election Day each county conducts a hand-to-eye recount on two percent of precincts as required by G.S. 163-182.1(b)(1) to verify that the equipment counted the votes correctly and the results from the machine tally match the selections recorded on the paper roll. The precincts used in this recount are randomly selected by the State Board of Elections and a statistician from UNC-Chapel Hill. The election directors interviewed noted they have never had a discrepancy between their election results and the recount with the paper rolls.

Additional Costs:

In addition to the costs outlined by Fiscal Research, county election directors stated that there are other costs to switch to only paper ballots that were not included in the fiscal note.

- The estimate that counties would need to purchase two voting booths per precinct for marking paper ballots is unrealistic. Most precincts would require 10-12 booths each and at least 20 would be needed for early voting to prevent long lines.

- Paper ballots themselves would cost about twice as much the cost of the paper rolls and it is difficult to predict how much of each ballot type would be needed for early voting and election day. Electronic machines are able to load and display any ballot.
- The storage needs for paper ballot machines are different than what is needed to store the electronic voting machines. Alamance County recently renovated a warehouse to store their electronic voting equipment.
- Each county would need to purchase a M650 or M850 High Speed Central Tabulator for county-wide recounts.

Replacement Schedule:

There is no set schedule to replace voting machines. Counties hope to use the machines as long as possible to delay the cost of replacing them. The expected life cycle of the machines is 10-12 years, putting the replacement timeline after the 2016 presidential election.

Other Notes:

The software that is used to count votes from paper ballots is the same as is used in electronic voting machines. Both types of hardware have a paper backup if the results of the election are unclear.

North Carolina only has one vendor counties can use to purchase election equipment. Counties hope that there will be more time for the state to explore what other technologies and machines are available to be certified and used in the future.

Appendix A

Type of Equipment Used in Each County

County	Election Day	Election Day ADA	One-Stop	One-Stop ADA
Alamance	iVo	iVo	iVo	iVo
Alexander	M100	AutoMARK	M100	AutoMARK
Alleghany	iVo	iVo	iVo	iVo
Anson	M100	AutoMARK	M100	AutoMARK
Ashe	M100	AutoMARK	M100	AutoMARK
Avery	M100	AutoMARK	M100	AutoMARK
Beaufort	M100	AutoMARK	M100	AutoMARK
Bertie	M100	AutoMARK	M100	AutoMARK
Bladen	M100	iVo	M100	iVo
Brunswick	iVo	iVo	iVo	iVo
Buncombe	M100	AutoMARK	M100	AutoMARK
Burke	iVo	iVo	iVo	iVo
Cabarrus	M100	AutoMARK	M100	AutoMARK
Caldwell	M100	AutoMARK	M100	AutoMARK
Camden	M100	AutoMARK	M100	AutoMARK
Carteret	M100	AutoMARK	M100	AutoMARK
Caswell	iVo	iVo	iVo	iVo
Catawba	M100	AutoMARK	iVo	iVo
Chatham	M100	AutoMARK	M100	AutoMARK
Cherokee	iVo	iVo	iVo	iVo
Chowan	M100	AutoMARK	M100	AutoMARK
Clay	M100	AutoMARK	M100	AutoMARK
Cleveland	M100	AutoMARK	M100	AutoMARK
Columbus	M100	AutoMARK	M100	AutoMARK
Craven	M100	iVo	iVo	iVo
Cumberland	M100	iVo	iVo	iVo
Currituck	M100	AutoMARK	M100	AutoMARK
Dare	M100	iVo	iVo	iVo
Davidson	iVo	iVo	iVo	iVo
Davie	iVo	iVo	iVo	iVo
Duplin	M100	AutoMARK	M100	AutoMARK
Durham	M100	AutoMARK	M100	AutoMARK
Edgecombe	M100	AutoMARK	M100	AutoMARK
Forsyth	M100	iVo	iVo	iVo
Franklin	M100	AutoMARK	M100	AutoMARK
Gaston	M100	AutoMARK	M100	AutoMARK
Gates	M100	AutoMARK	M100	AutoMARK
Graham	M100	AutoMARK	M100	AutoMARK
Granville	M100	AutoMARK	M100	AutoMARK
Greene	M100	AutoMARK	M100	AutoMARK
Guilford	iVo	iVo	iVo	iVo

Halifax	M100	AutoMARK	M100	AutoMARK
Harnett	M100	AutoMARK	M100	AutoMARK
Haywood	iVo	iVo	iVo	iVo
Henderson	iVo	iVo	iVo	iVo
Hertford	M100	AutoMARK	M100	AutoMARK
Hoke	M100	AutoMARK	M100	AutoMARK
Hyde	M100	AutoMARK	M100	AutoMARK
Iredell	M100	AutoMARK	M100	AutoMARK
Jackson	iVo	iVo	iVo	iVo
Johnston	M100	AutoMARK	M100	AutoMARK
Jones	M100	AutoMARK	M100	AutoMARK
Lee	M100	iVo	M100	iVo
Lenoir	iVo	iVo	iVo	iVo
Lincoln	M100	AutoMARK	M100	AutoMARK
Macon	M100	AutoMARK	M100	AutoMARK
Madison	iVo	iVo	iVo	iVo
Martin	M100	AutoMARK	M100	AutoMARK
Mcdowell	M100	AutoMARK	M100	AutoMARK
Mecklenburg	iVo	iVo	iVo	iVo
Mitchell	M100	AutoMARK	M100	AutoMARK
Montgomery	M100	AutoMARK	M100	AutoMARK
Moore	M100	iVo	M100	iVo
Nash	M100	AutoMARK	M100	AutoMARK
New Hanover	M100	iVo	iVo	iVo
Northampton	M100	AutoMARK	M100	AutoMARK
Onslow	M100	AutoMARK	M100	AutoMARK
Orange	M100	AutoMARK	M100	AutoMARK
Pamlico	iVo	iVo	iVo	iVo
Pasquotank	M100	AutoMARK	M100	AutoMARK
Pender	iVo	iVo	iVo	iVo
Perquimans	iVo	iVo	iVo	iVo
Person	M100	AutoMARK	M100	AutoMARK
Pitt	M100	AutoMARK	M100	AutoMARK
Polk	iVo	iVo	iVo	iVo
Randolph	M100	AutoMARK	M100	AutoMARK
Richmond	M100	iVo	M100	iVo
Robeson	M100	AutoMARK	M100	AutoMARK
Rockingham	M100	AutoMARK	M100	AutoMARK
Rowan	M100	AutoMARK	M100	AutoMARK
Rutherford	iVo	iVo	iVo	iVo
Sampson	M100	AutoMARK	M100	AutoMARK
Scotland	M100	AutoMARK	M100	AutoMARK
Stanly	M100	AutoMARK	M100	AutoMARK
Stokes	M100	AutoMARK	M100	AutoMARK
Surry	iVo	iVo	iVo	iVo
Swain	M100	AutoMARK	M100	AutoMARK
Transylvania	iVo	iVo	iVo	iVo
Tyrrell	M100	AutoMARK	M100	AutoMARK

Union	M100	AutoMARK	iVo	iVo
Vance	M100	AutoMARK	M100	AutoMARK
Wake	M100	AutoMARK	M100	AutoMARK
Warren	iVo	iVo	iVo	iVo
Washington	M100	AutoMARK	M100	AutoMARK
Watauga	M100	AutoMARK	M100	AutoMARK
Wayne	M100	AutoMARK	M100	AutoMARK
Wilkes	M100	AutoMARK	M100	AutoMARK
Wilson	iVo	iVo	iVo	iVo
Yadkin	M100	AutoMARK	M100	AutoMARK
Yancey	M100	AutoMARK	M100	AutoMARK

Source: North Carolina State Board of Elections