

Elections Obstacles

Utah's Growing Need for New Voting Equipment | August 2016



HIGHLIGHTS

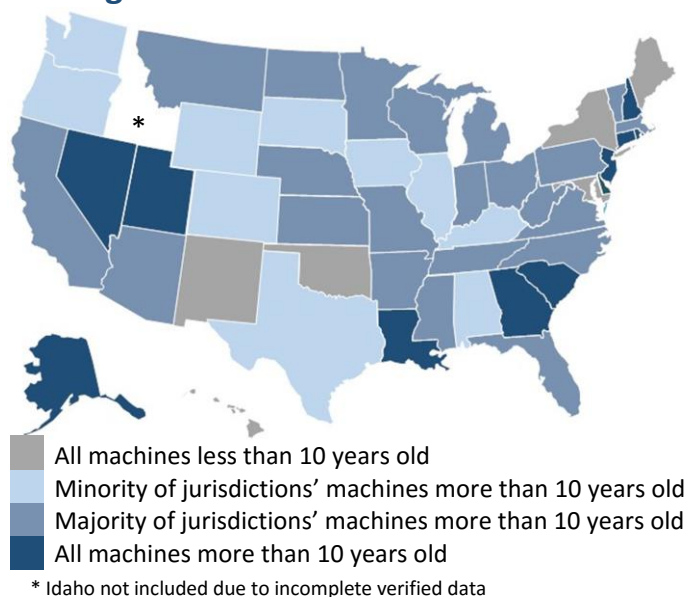
- In 2005, the state used a \$21.5 million federal grant to purchase new voting equipment for each county in the state, marking the first time every county was using the same type of voting equipment.
- The voting equipment purchased with the federal funding is nearing the end of its expected lifespan.
- Unanticipated software, hardware, and other challenges have led some to question whether the equipment will last as long as originally anticipated.
- The Legislature has several policy options to consider, including:
 - whether the state should take action and, if so, when;
 - how new equipment should be selected;
 - the certification of voting equipment; and
 - potential savings through vote-by-mail.
- The purchase and 16-year maintenance costs of new voting equipment could be:
 - \$20.5-\$31.0 million for electronic touch-screen machines;
 - \$3.4-\$6.8 million for optical scan machines; or
 - \$3.2-\$5.3 million for central count (vote by mail) machines.
- The Legislature has several funding options for the procurement of new voting equipment, including:
 - a statewide procurement;
 - the development of custom voting equipment;
 - a grant program to assist counties;
 - a low-interest loan program for counties; or
 - facilitating bulk purchases by counties.
- Without state funding, counties will be responsible for procuring and maintaining their own voting equipment, resulting in a mixed voting system that is more complicated to administer.

In the absence of continued federal funding, the state will need to decide in the coming years whether the costs of purchasing new voting equipment for the entire state are worth the benefits of keeping a unified statewide elections system.

In 2005, the state used a federal grant to purchase new voting equipment for each county in the state. The state now enjoys significant efficiencies in elections administration because of its unified elections system. However, the voting equipment purchased with the federal grant is nearing the end of its expected lifespan. Today Utah is one of only eleven states whose entire voting equipment infrastructure was purchased before 2006 (see Figure 1).¹ The older the state's voting equipment becomes, the more likely counties are to replace voting equipment on their own and depart from the state's unified elections system. But if the state decides to ensure that each county continues to use the same voting equipment, it will require considerable resources.

Figure 1

Voting Machines more than 10 Years Old¹

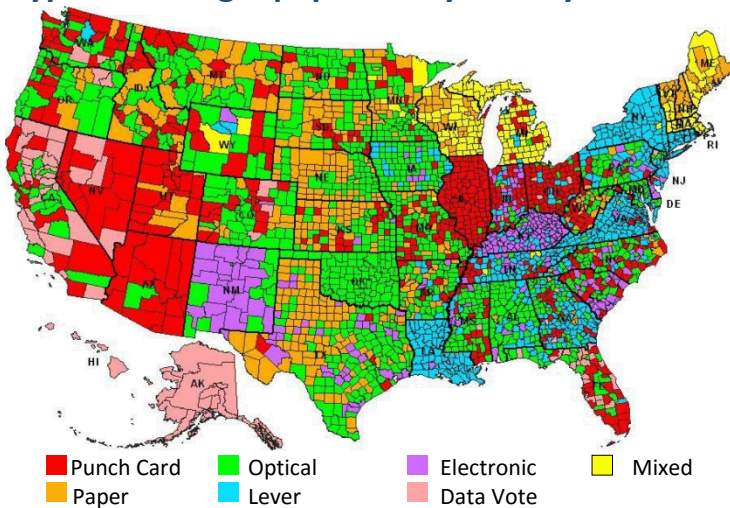


How We Got Here

For most of its history, the state of Utah permitted its counties to independently decide what type of voting equipment they would use. County control of voting

Figure 2

Type of Voting Equipment by County – 1996²



systems created a patchwork of elections systems across the nation (see Figure 2).² Most people did not notice or complain about the patchwork of elections systems because voting equipment across the nation seemed to function well enough.

That changed with the 2000 presidential election. When Al Gore requested a recount of ballots cast in Florida, it became apparent that punch card ballots, with their hanging and dimpled chads, were simply unreliable. The difficulty of declaring a winner of that presidential election led Congress to pass the Help America Vote Act of 2002 (HAVA) to assist states in upgrading their voting equipment. HAVA was comprised of three primary components:

- 1) It provided \$3.28 billion to help states purchase new voting equipment – about \$25 per voter;³
- 2) It set mandatory minimum standards for voting equipment; and
- 3) It created the Elections Assistance Commission (EAC) to facilitate HAVA implementation.

Utah received \$21.5 million from HAVA and used the funds to purchase new voting equipment in 2005.⁴ With this state-brokered purchase, the entire state was using the same voting equipment for the first time (see Figure 3).⁵ The unification of voting equipment used across the state brought several benefits:

- The state negotiated a better purchase price and maintenance contract than what could have been achieved individually by the counties.
- The state now integrates each county's voting equipment into the same statewide elections

administration database.

- Because each county uses the same equipment, counties borrow equipment and personnel from one another in emergencies.
- Training is less expensive because the Office of the Lieutenant Governor can conduct trainings for multiple counties at the same time.
- It is less expensive and less difficult to educate voters on how to use the equipment because the same instructional information can be provided statewide.

Where We Are Now

Voting Equipment

Most of Utah's HAVA funds were used to purchase AccuVote-TSX machines, which are Direct-record Electronic (DRE) touch screen systems used to vote in person at a polling location. A smaller portion of the funds were used to purchase AccuVote-OS machines, which are optical scan machines used to process paper ballots. At the time the equipment was purchased, the original manufacturer⁶ reported the

Figure 3

Voting Equipment Used in Utah 1986-2006⁵

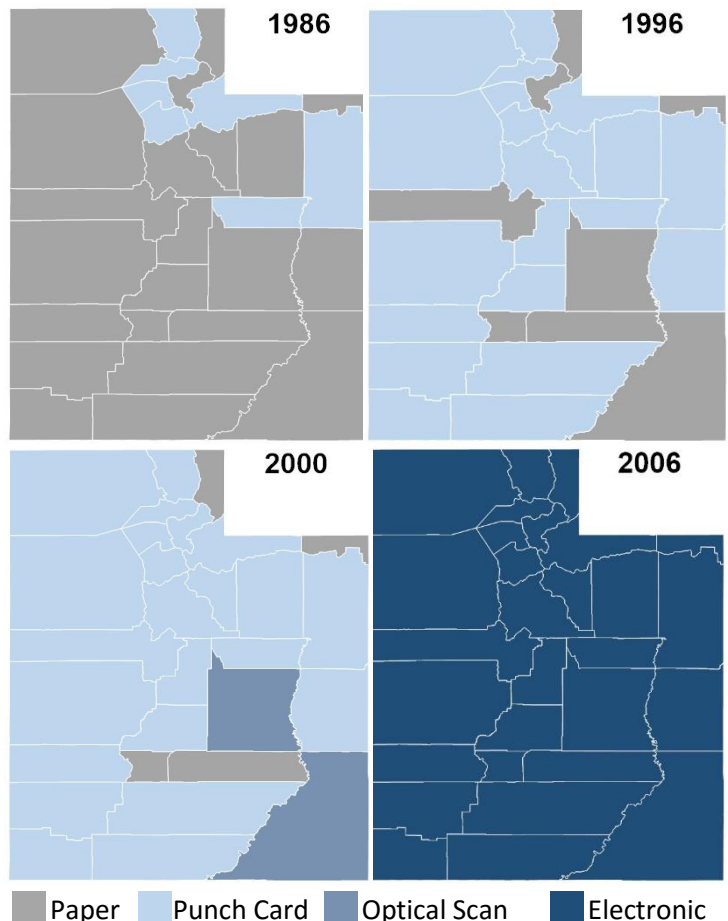


Figure 4

Voting Equipment Purchased by Utah in 2005



AccuVote- TSX



AccuVote- OS

life expectancy for the TSX touch screen machines and OS machines as 15 years (2020) and 20 years (2020) respectively, after which the state could expect to pay “excessive” maintenance costs.⁷

Regardless, unanticipated challenges with repair and maintenance indicate that the equipment may not last as long as originally expected.

Furthermore, the increasing popularity of absentee voting has increased pressure on the AccuVote-OS machines. The OS machines require each ballot to be hand-fed into the machine and were originally purchased to tally a handful of absentee ballots each election. However, when some counties decided to conduct elections entirely by mail, all but one opted to use the OS machines to process the results of their entire elections.⁸ In the 2016 General Election, 20 counties will be conducting elections entirely by mail, representing 70.4% of the state’s population.⁹ It is unclear whether the increased demand on the OS machines decreases their life expectancy.

Elections Assistance Commission

Like 46 other states, Utah relies upon the Elections Assistance Commission for voting equipment certification.¹⁰ The state’s current voting equipment and each of its components were certified by the EAC in 2005. Because Utah requires EAC certification, if a part on a voting machine breaks, a county currently has three options:

- repair the broken part;
- find an exact replacement part that was covered by the original EAC certification; or
- get a new part certified by the EAC.

Counties repair machines as often as they can but often have to find replacement parts. It is not uncommon for counties to find that a particular replacement part is no longer manufactured. Because

it is difficult and time consuming to obtain EAC certification for a new part, counties often cannibalize decommissioned voting machines for certified parts. In fact, the state recently purchased several old TSX machines from another state to strip the machines for parts.

Policy Options Going Forward

As the Legislature considers voting equipment in the state, the following questions may help it evaluate different policy options:

- 1) Should the state take action and, if so, when?
- 2) What are the state’s options regarding election administration?
- 3) What are the state’s funding options?

Should the State Take Action?

The Legislature could choose not to take action. Georgia provides a good example of how this option could work. In 2002, three years before Utah, Georgia purchased voting equipment similar to that which Utah uses. Although the majority of Georgia’s voting machines are nearly 15 years old, Georgia’s director of elections says that the state has no plans to replace the voting equipment. He stated that the machines are well maintained, have low mileage, and are “still doing what they were asked to do in 2002.”¹¹ He projects that Georgia’s voting machines will last another five to eight years.

While the State of Georgia initially purchased all the state’s voting equipment, it does not plan to conduct another statewide purchase. As a result, Georgia’s counties are responsible for maintaining and replacing voting equipment. Multiple counties recently banded together for a bulk purchase of 700 new and used TSX machines to replace several older, more worn machines. While Georgia’s state elections office acknowledges that eventually the machines will wear out and they will need to find another solution, they believe there is no immediate need to replace their voting equipment. If the Legislature chooses not to take action, counties will be responsible for replacing their own voting equipment. Table 1 shows the estimated funds required for each county in the state to procure its own voting equipment.¹² The estimates include maintenance costs over the life of the equipment, but may not include licensing fees or other associated costs.

Table 1

Estimated 16-Year Cost for New Types of Voting Equipment by County¹²

	DRE		Optical Scan		Central Count	
	Low	High	Low	High	Low	High
Beaver	\$54,087	\$81,790	\$9,015	\$18,029	\$102,000	\$148,000
Box Elder	\$416,396	\$629,672	\$69,399	\$138,799	\$102,000	\$196,000
Cache	\$823,362	\$1,245,084	\$137,227	\$274,454	\$102,000	\$196,000
Carbon	\$187,632	\$283,737	\$31,272	\$62,544	\$102,000	\$196,000
Daggett	\$11,234	\$16,988	\$1,872	\$3,745	\$102,000	\$148,000
Davis	\$2,233,762	\$3,377,884	\$372,294	\$744,587	\$204,000	\$296,000
Duchesne	\$126,706	\$191,605	\$21,118	\$42,235	\$102,000	\$148,000
Emery	\$114,456	\$173,079	\$19,076	\$38,152	\$102,000	\$148,000
Garfield	\$44,411	\$67,158	\$7,402	\$14,804	\$102,000	\$148,000
Grand	\$78,982	\$119,437	\$13,164	\$26,327	\$102,000	\$148,000
Iron	\$344,662	\$521,197	\$57,444	\$114,887	\$102,000	\$196,000
Juab	\$85,198	\$128,836	\$14,200	\$28,399	\$102,000	\$148,000
Kane	\$64,140	\$96,993	\$10,690	\$21,380	\$102,000	\$148,000
Millard	\$103,336	\$156,265	\$17,223	\$34,445	\$102,000	\$148,000
Morgan	\$87,740	\$132,680	\$14,623	\$29,247	\$102,000	\$148,000
Piute	\$15,055	\$22,766	\$2,509	\$5,018	\$102,000	\$148,000
Rich	\$21,156	\$31,992	\$3,526	\$7,052	\$102,000	\$148,000
Salt Lake	\$7,224,594	\$10,924,995	\$1,204,099	\$2,408,198	\$204,000	\$296,000
San Juan	\$104,009	\$157,282	\$17,335	\$34,670	\$102,000	\$148,000
Sanpete	\$185,107	\$279,918	\$30,851	\$61,702	\$102,000	\$196,000
Sevier	\$144,878	\$219,083	\$24,146	\$48,293	\$102,000	\$196,000
Summit	\$394,617	\$596,738	\$65,769	\$131,539	\$102,000	\$196,000
Tooele	\$407,360	\$616,007	\$67,893	\$135,787	\$102,000	\$196,000
Uintah	\$232,076	\$350,945	\$38,679	\$77,359	\$102,000	\$196,000
Utah	\$4,084,814	\$6,177,035	\$680,802	\$1,361,605	\$102,000	\$296,000
Wasatch	\$208,575	\$315,406	\$34,763	\$69,525	\$102,000	\$196,000
Washington	\$1,103,048	\$1,668,023	\$183,841	\$367,683	\$102,000	\$196,000
Wayne	\$25,551	\$38,638	\$4,259	\$8,517	\$102,000	\$148,000
Weber	\$1,567,381	\$2,370,186	\$261,230	\$522,460	\$102,000	\$196,000

Policies Regarding Administration**Uniform Voting Equipment**

Like Utah, Georgia enjoys the benefits of a standardized, statewide elections system. However, Georgia can require its counties to purchase the same voting equipment.¹³ The Legislature could change Utah's laws to require counties to purchase a standardized set of voting equipment.

Voting Equipment Selection Committee

State statute requires the Lieutenant Governor to create a Voting Equipment Selection Committee to advise the state on voting equipment purchases.¹⁴ However, the committee does not have authority to direct or advise a purchase made by a county. The Legislature could modify the composition and/or authority of the Voting Equipment Selection Committee to play a more decisive role in the state's selection of voting equipment.

Creation of New Entity

The Legislature could form a new committee, task force, commission, or other entity to study the types of voting equipment the state should purchase. The

new entity could also study policies to ensure that the purchase of new equipment is administered in a manner that is best for the state.

Voting Equipment Certification

Utah requires EAC certification for its voting equipment, but obtaining EAC certification can be difficult and time-consuming. The Legislature could change state law to allow certification to be obtained through an alternative method. The Presidential Commission on Election Administration concluded that if the EAC certification process does not change, "the states should adopt their regulations such that federal approval is unnecessary."¹⁵

Vote by Mail

The Legislature could reduce the cost of purchasing new voting equipment by making Utah an entirely vote-by-mail state. Elections conducted entirely by mail require less voting equipment.

Instead of needing voting equipment for hundreds of polling locations, each county would need only one or two high-speed ballot scanners at a central location. Three western states (Colorado, Washington, and Oregon) conduct their elections entirely by mail. As previously stated, 20 of Utah's 29 counties will conduct their 2016 elections entirely by mail, representing 70.4% of the state's population.¹⁶

While the full fiscal impact of vote-by-mail is unclear, the Denver Elections Division reports that moving to vote-by-mail saves the jurisdiction about \$5 per voter each primary election and \$2 per voter each general election.¹⁷ Similarly, Oregon saved \$3 million per election cycle by switching to all-mail voting.¹⁸

Funding Options

It is unlikely that the federal government will provide another infusion of funds to purchase new voting equipment. Therefore, the following are ideas the Legislature could consider if it chooses to provide funding for the procurement of voting equipment.

Statewide Purchase

The state could fund an outright purchase of voting equipment. The cost of a statewide purchase could vary greatly depending upon the type of voting equipment selected and the other policy changes the Legislature might make. Table 2 shows the potential unit, maintenance, and total costs of a statewide purchase. The data show that a central count system used for vote-by-mail elections is the least expensive option. The calculations do not include setup, training, or licensing fees.

Custom Development

Some jurisdictions across the country have been disappointed by the options the private sector has available. The market for voting equipment is very narrow with inconsistent revenue streams and high capital costs. These constraints often limit the options vendors are able to provide. As a result, jurisdictions like Los Angeles County, California, and Travis County, Texas, are developing their own voting systems.

Travis County estimates that developing their own voting system will cost about \$8 million, which is \$6 million less than purchasing a system from a vendor.¹⁹ The system is projected to achieve such significant savings because it will be designed to use commercial-off-the-shelf equipment like tablets and printers. The use of commercial-off-the-shelf equipment is also projected to decrease maintenance and replacement costs over time.

Grant Programs

If the Legislature does not wish to fully fund the procurement of new voting equipment, the Legislature could provide grants to counties to procure new equipment. Under a grant program, the state could attach requirements for the type,

quality, and cost of voting equipment counties can purchase.²⁰ A grant program could also require counties to provide matching funds.

Loan Options

The state could choose not to provide any direct funding for the purchase of new voting equipment, but instead create a low or zero-interest loan program for counties to purchase voting equipment. Before HAVA, the State of New Mexico ran such a program. New Mexico placed conditions on the use of loan funds to ensure that voting equipment purchased with the funds met certain standards and was maintained properly.

One advantage of a loan program is that it turns the one-time expense of purchasing voting equipment into an ongoing expense for counties. This could incent counties to create long-term budgets for the purchase and maintenance of voting equipment rather than face difficult and sometimes insurmountable one-time costs of purchasing new equipment.

Facilitate Bulk Purchasing

Another zero-cost option for the state would be to facilitate the aggregation of multiple counties' purchases into a single purchase contract. Bulk purchasing would allow counties to achieve greater economies of scale, ultimately lowering the costs of purchasing voting equipment for each jurisdiction.

Conclusion

Before the state's 2005 voting equipment purchase, it took years to evaluate, select, and implement the voting equipment. If the state desires to maintain a statewide voting system, the Legislature may need to make decisions several years before new voting equipment is needed. Any action will need to be taken at least two years before the election in which the new voting equipment will be used.

Without state funding, counties will be responsible for procuring and maintaining their own voting equipment, resulting in a mixed voting system that is more complicated to administer. Several counties have already expressed an interest in purchasing new voting equipment. The longer the state waits to make a decision, the more difficult it will be to keep the entire state on the same system.

Table 2

Estimated Total Cost of Voting Equipment¹² (in millions, over 16 years of maintenance)

	Unit Costs	Maintenance Costs	Total Costs
DRE	\$12.5 - \$15.0	\$8.0 - \$16.0	\$20.5 - \$31.0
Optical Scan	\$2.1 - \$4.2	\$1.3 - \$2.7	\$3.4 - \$6.8
Central Count	\$2.2 - \$3.2	\$1.0 - \$2.1	\$3.2- \$5.3

Notes

- ¹ Lawrence Norden and Christopher Famighetti, *America's Voting Machines at Risk*, New York: (Brennan Center for Justice, New York University School of Law, 2015), 9, accessed April 2016, https://www.brennancenter.org/sites/default/files/publications/Americas_Voting_Machines_At_Risk.pdf.
- ² Kimball Brace, President, Election Data Services, Inc., (presentation, NCSL Policy and Elections Technology Conference, Santa Fe, NM, June 1, 2015). http://www.ncsl.org/documents/legismgt/elect/HistoryVotingEquip_Brace.pdf.
- ³ "Elections 2020: Policy, Funding and the Future," *National Conference of State Legislatures*, (last modified May 25, 2016), accessed May 2016, <http://www.ncsl.org/research/elections-and-campaigns/elections-2020.aspx>.
- ⁴ "Annual Grant Expenditure Report," *U.S. Elections Assistance Commission*, (March 2016), accessed April 2016, <http://www.eac.gov/assets/1/Documents/Final%20FY%202015%20Grants%20Report.pdf>.
- ⁵ Brace, presentation, NCSL Policy and Elections Technology Conference.
- ⁶ The state's current voting machines were manufactured by Diebold. However, after a series of mergers and breakups, Dominion now owns the portion of the company that manufactured the machines.
- ⁷ Diebold, "response to solicitation DG5502," (2004), 275.
- ⁸ In 2014, Salt Lake County replaced its OS machines with high speed scanners.
- ⁹ Analysis of active voters reported in "2014 General Election Canvas," *Office of the Lieutenant Governor*, accessed April 2016, <https://elections.utah.gov/Media/Default/2014%20Election/2014%20General%20Canvass%20Report.xlsx>; "2014 County Population Data," U.S. Census Bureau, accessed May 2016, <http://factfinder.census.gov/faces/tableservices/jsf/pages/productview.xhtml?src=bkmk>.
- ¹⁰ Norden and Famighetti, "America's Voting Machines at Risk," 33. See also Utah Code Ann. § 20A-5-402.5.
- ¹¹ Chris Harvey, Director of Elections, Office of the Georgia Secretary of State, conversation with author, May 3, 2016.
- ¹² Unit cost calculations based on data from the National Conference of State Legislatures. "Paper Ballots and Direct-Recording Electronic Voting Machines," *National Conference of*

- State Legislatures*, last modified July 7, 2015, accessed April 2016, <http://www.ncsl.org/research/elections-and-campaigns/voting-equipment.aspx>.
- Assumes one DRE for every 250 active voters or one optical scan machine for every 1500 active voters as assumed by Norden and Famighetti; "America's Voting Machines at Risk." Assumes one central count machine for each county with fewer than 100,000 active registered voters and two machines for each jurisdiction with more than 100,000 active registered voters. Active voter data taken from the "2014 General Election Canvas," *Office of the Lieutenant Governor*.
- The costs of printing ballots for the Optical Scan or Central Count machines are not included. Maintenance cost calculations based on data from the National Conference of State Legislatures. Calculations use the number of machines per jurisdiction calculated as described above. Costs are not adjusted for increased maintenance costs over time as NCSL suggests might happen. Maintenance costs are not adjusted for inflation. The costs of printing ballots for the Optical Scan or Central Count machines are not included. "Paper Ballots and Direct-Recording Electronic Voting Machines."
- ¹³ Ga. Code Ann. § 21-2-300 and §21-2-324.
- ¹⁴ Utah Code Ann. § 20A-5-402.7.
- ¹⁵ "The American Voting Experience: Report and Recommendations of the Presidential Commission on Election Administration," *Presidential Commission on Election Administration*, 65.
- ¹⁶ See endnote 9
- ¹⁷ Amber McReynolds, Denver Elections Division Director, (presentation, NCSL Forum on The Replacement of Voting Equipment, Boulder, Co, October 21, 2015). Data show the elections cost dropped from \$8.22 per voter to \$3.78 per voter in primary elections. In the general election costs dropped from \$5.88 per voter to \$3.77 per voter.
- ¹⁸ Breitenbach, "Aging Voting Machines Cost State, Local Governments."
- ¹⁹ Norden and Famighetti, "America's Voting Machines at Risk," 24.
- ²⁰ Examples of legislation regarding grant programs for voting equipment can be found in H.B. 334, "Voting Revisions," 61st Leg., 2016 Gen. Sess. (Utah 2016) and S. 3528, 89th Leg., 2016 Reg. Sess. (Minn. 2016); H. 3724, 89th Leg., 2016 Reg. Sess. (Minn. 2016).

Questions or Comments?

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