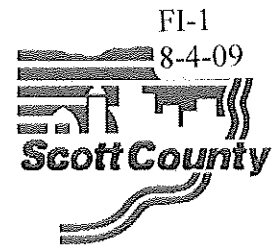


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July 21, 2009

TO: Board of Supervisors

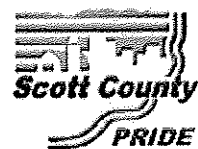
FROM: Dee F. Bruemmer, County Administrator

RE: Election Equipment Direction and Funding Goal

Auditor Roxanna Moritz has completed a thorough review of the status of the current election equipment and the future direction and time table for the equipment to be replaced in the County's capital plan. Attached is her full report. She will present her findings at the August 4, 2009 Committee of the Whole which will conclude the work on this goal for the year.

STATUS OF VOTING SYSTEMS AND PROCESSES

Report to the Scott County
Board of Supervisors



Scott County currently uses four major equipment systems to conduct elections. These components include a vote tabulating system, an accessibility system to help voters with disabilities in marking their ballots, a server system for compiling county-wide election results and a voter database system for maintaining up to date voter registrations and voting histories.

Accu-Vote OS

The primary voting system is the optical scan tabulator known by the brand name Accu-Vote OS. This is the machine into which voters place their completed ballots. It interprets votes using "dark mark logic," whereby the computer selects the darkest mark within a given set as the correct choice or vote. This is the same kind of technology which has been used for decades in scoring standardized tests. Ballots can be immediately tabulated at the polling place allowing for voters to be notified by the voting system of errors such as over votes and can prevent residual votes. The tabulation is recorded electronically and stored in a memory card. At the close of the election each chief election official has the machine print out a total vote count which they verify against their manual count. The memory cards and the print outs are returned to the Auditor's Office for final tabulation. Scott County has 80 Accu-Vote OS machines. These machines were purchased through a grant from the State of Iowa. Scott County is responsible for on-going maintenance costs.

AutoMark VAT

The County's accessibility voting system is the electronic ballot marking (EBM) device known by the brand name AutoMark VAT. An EBM is an electronic device that can aid voters with disabilities in marking standard paper ballots. We use these machines to comply with a federal law known as the Help America Vote Act (HAVA). This law requires each voting site in the United States to have some type of voter assistance technology (VAT) available for use primarily by voters with disabilities, although any voter can use the machine to mark the ballot. Our machines are equipped with audio interfaces (a computer "reads" a paper ballot and prepares an audio "interpretation" of the ballot for the visually impaired). They allow for touch screen voting. They can greatly magnify the image of the ballot or reverse image the ballot (change black lettering to white and white background to black). Once the voter has indicated his or her voting preference the machine will mark the ballot using an ink jet printer. These ballots are then tabulated using the Accu-Vote OS machine. Scott County has 64 AutoMark VAT machines. They were purchased through a grant from the State of Iowa and received a substantial discount due to volume discounting. Scott County is responsible for on-going maintenance costs.

Global Election Management System (GEMS)

The system compiler component is a server for the optical scan equipment known as Global Election Management System (GEMS). The hardware component is a note book computer which is dedicated to run only the GEMS software. The processing component is proprietary software. GEMS is available for either purchase or lease, and Scott County has opted to lease this system. At the conclusion of an election memory cards from each individual optical scan tabulator are placed into a special reader connected to the GEMS note book computer. The memory from each card is downloaded into the GEMS system and the software compiles the precinct totals to produce the countywide voting results.

I-VOTERS

Finally, Scott County maintains a voter registration database through the I-VOTERS network which is operated through the Office of the Secretary of State. The Help America Vote Act requires each state to maintain a statewide, centralized database of all voters, and I-VOTERS is Iowa's version of this statewide

database. This database is used to record all pertinent information regarding individual voters. Data entry for each County can only come through the respective County Auditor's Office. Elections staff updates this database on a regular basis. The system is accessible through standard computer work stations connected to the internet via Scott County's computer network. For each election elections staff uses I-VOTERS to compile information at the precinct level into paper voter rolls. Poll workers check this list to insure that voters are eligible to vote and have not already voted absentee. Prior to fiscal year 2009 all costs for I-VOTERS were borne by the state. Starting with fiscal year 2010 the counties will be charged \$0.135 per voter for the costs of maintaining this system, with Scott County's share coming in at \$16,665 for that year.

Chapter

2

Recent History of Voting Equipment

Prior to 2006 Scott County was self sufficient and relatively self regulating in terms of its election systems. Scott County was one of the first counties in Iowa to adopt the use of optical scan vote tabulators beginning in 1990. Also, Scott County maintained its own computerized voter database. A statewide database existed, but the county database was more accurate, more up to date and local candidates preferred to obtain voter information from the Scott County database. This relative autonomy began to change in 2002.

HELP AMERICA VOTE ACT BRINGS CHANGE

In 2002 Congress enacted the Help America Vote Act. This law was passed in response to various issues raised during the year 2000 Florida recount of the presidential election. The Act addressed many different concerns and included many provisions. Pertinent to this report, HAVA required phase out of the use of punch card and lever voting machines as primary voting systems. Further, any new or existing voting system used to tabulate a Federal election had to be certified as meeting certain specified requirements. As noted in Chapter 1, it required each polling location to have at least one voting system accessible to voters with disabilities, and it required establishment of a statewide computerized voter registration list. The deadline for these provisions was January 1, 2006.

The Help America Vote Act also established the United States Election Assistance Commission and gave the Commission authority to certify that election equipment met the specified requirements noted above. Further, Congress appropriated funds to the Commission for allocation to the individual states for purchase of equipment and software, to upgrade existing systems and for services to help the states comply with the various new requirements. The intent of Congress was to mandate certain changes and uniform standards in how elections were conducted in America, but to also provide the funds needed for making those changes occur.

In 2004 the Iowa legislature changed state law to conform to the requirements of HAVA. Thereafter, the Secretary of State adopted standards to meet the new requirements of state law. Pursuant to these changes all election systems would have to be certified as meeting HAVA guidelines. The guidelines required that all jurisdictions only use voting systems which have achieved state and national certification. The Election Assistance Commission and an Iowa board of examiners for voting systems would perform testing of submitted voting systems and provide the needed certifications. The Iowa board was comprised of three members, including University of Iowa computing professor Douglas Jones, a nationally recognized expert in voting machine equipment,

Once certified, the State would provide pass through funds to the counties for the purchase of new voting equipment, both for primary voting systems (intended for use by the general public) and for accessible equipment (intended for use by persons with disabilities). These funds could be used only for equipment certified to be in compliance with state and federal law. This meant that many counties in Iowa would need to have their election equipment upgraded to meet certification or scrap those systems and buy ones that complied with the Help America Vote Act.

The Effort to Comply with HAVA

The equipment used in Scott County did not meet certification standards, as it was brought into service before the passage of HAVA. However, the County had been successfully using an optical scan system for many years and it seemed a pointless waste of funds to purchase another system. Further, the County's computerized voter data base operated very efficiently and fully met the needs for conducting elections. Therefore, Scott County's first reaction to HAVA was to ask the Secretary of State to grant an exemption or waiver from the provisions of HAVA regarding the County's existing primary voting system and computer database.

The Secretary of State's Office made clear that there could be no exemptions or waivers in a letter to the County Auditor dated April 15, 2005. The Help America Vote Act requirements were federal law and would be enforced by the United States Department of Justice. The Iowa provisions were state law and would be enforced by the Secretary's Office and the Iowa Attorney General's Office. Thus the question became: Could the election system be upgraded or would a new system be required?

The Vendor Is Responsible For Upgrading

The County's next option was to obtain certification for upgrades to the voting equipment. The April 15 letter from the Secretary's Office stated that this was a viable option, but that it required the equipment vendor, Command Central, or the manufacturer, Sequoia Voting Systems, to apply for certification of upgrades to system hardware and software. There was some controversy as to the vendor's cost for compliance testing, with some saying that the certification fee was \$125,000. The cost of state certification was set by law at \$450 per day for the certification panel to test and analyze any upgrades proposed by the vendor or manufacturer. By November 2005 neither the vendor nor the manufacturer had obtained certification for upgrades from the Election Assistance Commission or from the state board of examiners.

Time was running out on the January 1, 2006 deadline for compliance with HAVA. Scott County was not alone in pushing the compliance deadline. In November 2005 the Secretary of State's Office informed more than 40 county auditors, including the Scott County Auditor, that they had not yet submitted a plan for compliance with HAVA, noting that the deadline for contracting with a vendor providing compliant election equipment was December 1, 2005.

As a third alternative, Scott County and Command Central negotiated a contract for buying new Sequoia equipment. The advantage to this equipment was that the primary voting system was essentially identical to the system then in use and therefore staff, poll workers and voters would be familiar with it. On November 22, 2005 Scott County submitted a plan to the Secretary for purchase of the Sequoia Voting Systems equipment from Command Central. This plan was for a new primary voting system as well as a new system for accessibility compliance. Unfortunately, neither of these Sequoia products was HAVA certified.

On December 9, 2005 the Secretary's Office noted receipt of Scott County's plan but also noted that the Sequoia equipment was not certified for use in Iowa. The Secretary's Office had communicated with Sequoia about certification, with Sequoia asserting that testing was underway and might be completed by January 1, 2006. However, the Secretary independently investigated Sequoia's claims and based on that review stated, "we cannot determine with certainty that testing and certification of the proposed Sequoia systems will be finished in January 2006." In fact, Sequoia failed to obtain Election Assistance Commission certification.

The Option Lease with Matt Parrott

As a stop gap measure to insure compliance with the January 1, 2006 deadline, Scott County and the Secretary of State entered into an agreement whereby Scott County agreed to an option lease with another vendor, Matt Parrott, for compliant equipment. If Sequoia obtained certification then Scott County would purchase equipment and upgrades from that vendor. If Sequoia was not successful then Scott County could pursue the option with Matt Parrott. However, due to the time constraints and high demand for election equipment generated by HAVA, the equipment available to Scott County was the Premiere Election System's Accu-Vote OS system which had been in operation for more than twenty years. A more recent model was in manufacture, but not immediately available due to the demand for HAVA compliant election equipment. When Sequoia failed to have its equipment certified Scott County was forced to exercise its

option with Matt Parrott to obtain equipment. Thus, Scott County entered into a contract with Matt Parrott and Henry Adkins & Son (Parrott's business partner) for purchase of the Accu-Vote OS system.

THE EVOLUTION AWAY FROM DRE TECHNOLOGY

As noted above, due to the requirements of HAVA all jurisdictions in the United States were required to obtain voter assistance technology (VAT) to aid voters with disabilities to independently vote at their local polling sites. There are two basic types of VAT equipment; the direct recording electronic system (DRE) and the electronic ballot marker system (EBM). Some DRE machines are used as primary voting systems, others only as voter assistance systems. EBM machines are used only as voter assistance systems. The original VAT equipment provided to Scott County by Parrott and Adkins was Premier's Accu-Vote TSX system, which utilized DRE technology.

A DRE machine records votes by means of a ballot display provided with mechanical or electro-optical components that can be activated by the voter typically by push buttons or a touch screen. It processes the voters' input with computer software. It then records voting data and ballot images in memory components. After the election it produces a tabulation of the voting data stored in a removable memory card and as printed copy. These machines can use headphones and other adaptive technology to provide the necessary accessibility for voters with various disabilities. DRE's can also provide immediate feedback to the voter, detecting such possible problems as under voting and over voting which may result in a spoiled ballot. This immediate feedback can be helpful in successfully determining voter intent. However, DRE systems do not provide an easily voter verified record of the voter's choice, such as provided by a paper ballot. As noted in Chapter One, an EBM machine has all the features of its DRE counterpart, except that it marks a standard paper ballot as opposed to an electronic recording of voter preferences.

Several voting integrity groups formed in response to the introduction of DRE systems, and there has been an intense national debate over this issue. Many election systems experts, including University of Iowa computing professor Douglas Jones, have criticized DRE systems as being subject to errors and potential manipulation. Various computer and election systems experts have found ways to infiltrate DRE software and alter mock election outcomes. They assert that a voter verified record which cannot be altered is far more preferable to electronic recording of votes. Currently, the paper ballot is the only form of voter verified record which cannot be altered. In case of election controversy a recount of physical ballots can occur with paper ballots. Recounts of electronic tallies can only be made for precinct vote totals. A majority of states now use voter verified paper ballots.

In 2007 Iowa joined the majority of states and required voter verified paper balloting beginning with the 2008 general election. This led to scrapping the recently purchased DRE systems throughout the State, including Scott County.

As a replacement to the DRE system, Scott County purchased Premier's AutoMark VAT system from Adkins as the new voter assistance system required by HAVA. It has many of the features of DRE based systems, but instead of electronically recording votes, it uses a jet spray printer to mark paper ballots with the voters' choices. These paper ballots are then tabulated using the standard Accu-Vote OS system.

Chapter

3

Issues Regarding Election Systems

WHY DID WE EXPERIENCE PROBLEMS ON ELECTION NIGHT 2008?

The 2008 general election results for Scott County were not available until well into the night. This led KWQC television news, and some other news outlets, to erroneously report the outcomes of several elections. Some candidates who were reported as winning actually lost their elections. Further, this produced speculation that some kind of error occurred and that votes may have been lost. The specter of a serious election meltdown, such as occurred in Florida in the 2000 general election, hung in the air.

In reality there was never any threat to the outcome of the election. Because Scott County uses a voter verified paper ballot the election could be recounted using those ballots if there was a serious question as to the outcome. However, these facts do raise the question: What happened to cause all of this turmoil?

Printing the Absentee Results by Precinct

Two separate problems occurred which caused the delay in reporting. First, a change in Iowa law required that all vote tabulating equipment report the tabulated results by precinct. For a single precinct tabulator this presented no problem as all the votes tabulated would be for one precinct. However, the seven tabulators used to register the election outcome for the absentee precinct had to print results for each race (twenty-three races in all with seventy-four possible voting choices), by precinct (sixty-four precincts in total). Therefore, it simply took a lot of time using a small dot matrix printer to print results for each race by each precinct. It also meant that the paper spools for each machine ran out and the paper had to be turned over and re-fed into the machine.

In the future, this problem can be remedied by printing results earlier. The Iowa legislature enacted a proposal to **allow** county auditors the authority to count absentee ballots the day before the election. However, counties which did not finish tallying all absentee ballots by 10:00 pm on the day of the previous election **must** start counting absentee ballots the day before the current election. This provision should allow ample time for printing the results from the absentee precinct. It is anticipated that the Secretary of State will form a committee of county auditors and others to formulate rules to implement this change in law. Auditor Moritz has requested to be included as a committee member.

Memory Card Failure

A more serious problem was the failure of three memory cards when placed into the GEMS system for downloading election results. This occurred for two machines tabulating the absentee precinct and for one standard precinct machine. The results had been printed out so there was a paper record of the totals for each machine. Staff hand entered the results from those paper records into an Excel spreadsheet. The spreadsheet had to be formatted on the spot. Once entered, the spreadsheet tabulated the final results. Auditor Moritz has adopted a policy to have a spreadsheet preformatted in case of a recurrence of this problem.

Scott County maintains an inventory of 130 memory cards. For any given election, these cards are sent to Adkins for configuration of each card for its respective precinct. Upon their return to Scott County, Auditor staff follows the required pre-election testing of voting machines and memory cards. If a card is found to be defective it is either returned to Adkins for follow up configuration or Adkins advises staff on how to complete the configuration in-house. After each machine and memory card pass the pre-election test the memory card is locked into the voting machine with a seal. At the conclusion of the election the precinct officials break the seals, print out the results, remove the memory cards from the vote tabulators and turn over the printed results and the cards to members of the Sheriff's reserve. The reserve officers return the cards and print outs to the Auditor's Office. All of these procedures were followed for the 2008 general election.

Auditor staff reviewed this problem with Adkins. The review reached no concrete reason for the failures, noting there is a small probability of failure for any electronic memory device. Adkins advised that staff conduct pre-election testing of equipment (which is already policy) and avoid rough handling of the equipment. As an additional aid, Adkins will supply Scott County with several memory cards with stabilizer bars (to increase the rigidity of the card), gloves for static free handling of the cards, and a special tool to clean memory card leads.

IS THE ACCU-VOTE OS OBSOLETE DUE TO UNAVAILABILITY OF MEMORY CARDS?

This issue arose on January 31, 2009 when the Auditor received notice from Premier (manufacturer of the Accu-Vote OS) that its supplier of memory cards, SMART Modular Technology, will stop manufacturing memory cards for the Accu-Vote OS. This raised the question of the long term viability of this vote tabulating equipment. Auditor Moritz directed staff to investigate this issue with Adkins to determine policy direction.

Staff initiated contact with Adkins through a telephone call to the firm held in conjunction with County IT staff and with a follow up letter to Adkins. Besides the Accu-Vote OS system, Adkins provides Scott County with the AutoMark and GEMS systems. The County contracts with Adkins for warranty and maintenance of all of these systems. Adkins supplies formatting services for the memory cards for each election and is available on a standby basis to assist with memory card or software issues which may arise with each election.

Scott County's warranty with Adkins, renewable annually, is for the expected life of the equipment. Adkins advised that the normal life expectancy of this electronic equipment is 12 to 15 years. The only caveat to this provision is obsolescence due to technological advances. Adkins also advised that the firm has purchased sufficient memory cards to meet all expected client needs for the normal life expectancy of the equipment. As noted above, Scott County has an inventory of 130 memory cards for our 80 Accu-Vote OS machines. Auditor staff and Adkins agree that Scott County has a sufficient number of cards to last for several more years.

Thus, immediate obsolescence is not on the horizon given the product warranty, and the combined vendor and county inventory of memory cards. However, this issue does point out that the system is old technology which will continue to experience maintenance problems as manufacturers stop producing spare parts. If in the future Premier or Adkins cannot obtain sufficient replacement components then the system will become obsolete and the warranty will be void.

I-VOTERS STATEWIDE VOTER DATABASE

As noted in the first chapter, I-VOTERS is the statewide voter database maintained by the Secretary of State. It contains voter registration information and the voting history of each voter. Each county auditor's office is responsible for inputting the information for new registrations and voting history. Further, beginning in fiscal year 2010 a share of the maintenance costs for I-VOTERS will be passed onto the counties on a per record basis.

There are two significant issues regarding the I-VOTERS system: accessing the system due to the limits of county internet band width and scanning original voter documents for linking to the voter's electronic file. The first issue is known among staff as the "cursed jumping cursor" problem, where the computer cursor will move off of an icon seemingly of its own volition. This leads to numerous "mis-clicks", staff frustration and wasted time. Hopefully the pending switch to a new internet service provider and expanded band width will solve this problem. If this change does not solve the problem then auditor staff is reviewing possible options for bundling information to send in data bursts. This would involve the use of one or more electronic poll books. (Electronic poll books are described in the next section below). Staff would enter voter data into the electronic poll book during the course of the day. At the end of the day staff would connect the poll book to I-VOTERS and send a single burst of data. This would improve over-processing of records and increase employee efficiency.

The second issue involves the limitations on our scanning ability. The scanning process involves two primary steps. First, staff scans original documents, primarily voter registration cards, into I-VOTERS. The second step is to match individual documents with the correct individual's I-VOTERS file and then add the scanned document into the electronic file. Documents can be matched either at the time they are scanned or stored in a batch within the I-VOTERS system. The matching process is significantly more time consuming than the batch scanning process. Only personnel authorized for access to I-VOTERS can perform either of these functions. The Auditor's office has one scanner which will allow a batch of about one hundred documents per hour, not counting document preparation time. Preparation includes photocopying old records on colored card stock onto white paper so that the scanner can recognize the print. Scott County has an inventory of more than 100,000 original documents which need to be scanned.

POSSIBLE FUTURE DEVELOPMENTS & ISSUES

POST ELECTION AUDITING OF VOTER TABULATORS

Voting integrity advocates have been pushing Congress and the state legislatures to adopt measures for auditing the functionality of election equipment after an election. This would require a hand count of the ballots from randomly selected precincts to compare results to the machine tabulated count. The Iowa

House of Representatives passed a measure for post election auditing of two races in every general election. The number of precincts to audit would vary based on size of county, with Scott County auditing four precincts. The measure failed to make it out of the Senate committee before the funnel deadline. The Iowa Secretary of State supports the measure and we believe it will be revived in the future. Also, Congress may act on this matter and pass a national election auditing act before the Iowa legislature passes a state law. The requirements of some auditing proposals would be much more rigorous, and cost more money, than the bill which passed the Iowa House.

The rationale behind post election audits is to discover otherwise unknown errors and perhaps to dissuade those who would like to cheat or sabotage an election from doing so. The Auditor Moritz supports audits and has encouraged the Scott County legislative delegation to vote for the current legislation. This support is based on the fact that manual recounts have revealed serious, otherwise undetected election errors in other jurisdictions which affected the outcome of elections. While these errors are relatively few given the thousands of elections which occur annually in the United States, regular audits of elections should help to discover some of these issues if they exist.

Auditor staff is unaware of any recount or audit which has revealed an issue with either the Accu-Vote OS, the version of GEMS used in Scott County or the AutoMark systems. However, we are aware of situations where recounts have revealed problems with failure to properly test systems prior to an election or to properly pre-test each batch of ballots. For example, in the 2008 general election in Delaware a close election triggered an automatic hand recount of the ballots. The hand recount showed that the losing candidate actually won the election. Further review of the matter showed that a small batch of ballots had not been printed with the correct timing marks. Election officials did not test this batch of ballots. Without the recount this matter would not have been discovered and the voters' will would have gone unfulfilled.

ELECTRONIC POLL BOOKS

An electronic poll book is a computer system that allows elections officials to review and/or process voter information during an election. This system is used in place of or to supplement paper-based poll books. The functions of an electronic poll book include voter identification and verification, precinct assignment, ballot assignment, voter history update and other functions such as name change, address change and/or redirecting voters to their correct voting location.

It consolidates broad data (from an entire city, county and/or state) into usable information at a polling place and has replaced or complemented the paper-based system. It replaces or supplements a manual process, usually a telephone call, from a precinct back to the local or state board of elections. The data contained in an electronic poll book is the voter database which is considered public information, such as the I-VOTERS database for a specific Iowa county. However, these systems tend to be rather expensive due to the use of proprietary software. Adding to the expense is the cost of the vendor programming the system to conform to the laws of any specific jurisdiction.

Ken Kline, the Auditor of Cerro Gordo County has developed an electronic poll book using open source software which is specifically programmed to reflect Iowa election law. The system runs on a precinct basis with one or more notebook computers in a stand alone network linked by commercial software. It is a complement to the existing paper-based system so that in the event of a power outage or other catastrophic event the election could continue. As voters are processed at the polling place their information is stored in the computer memory and later down loaded into the I-VOTERS database. This would avoid a lot of tedious hand data entry to update voter history and new registrations. Further, this system might be used to bundle updated voter information to send to I-VOTERS in data bursts as noted above in the I-VOTERS section.

This system also contains an internal logic tree to process special cases, such as election day registrations, changes of address within a county and provisional voting. Processing these cases would involve printing information via standard mailing labels which would be affixed to standardized paper forms. This would reduce the error rate in these special cases. Finally, it would identify and prevent felons listed in the Department of Correction system from voting.

The Secretary of State has arranged to make this program available free of initial charge to counties wishing to use it, but with a yearly maintenance fee to cover updates and other issues which may arise. Also, the

Secretary is willing to act as a central point of acquisition for group purchasing of note book computers, printers and the linking software.

To date, this electronic poll book has been used successfully in three special elections. Poll workers have uniformly praised the system for reducing difficult decision making into simple yes or no questions with definitive answers. Election officials have been impressed by the increase in number of voters who can be processed, without errors, in a given period of time. They report that poll books have significantly reduced errors, to essentially zero, in these elections compared to other elections. An error means that either a person was wrongly denied the right to vote, was wrongly discouraged from voting or was wrongly allowed to vote.

Given the success of poll books it seems reasonable to assume that the State of Iowa may require use of this system as a means to prevent errors which deny or restrict a citizen's right to vote. However, there are groups who criticize the use of electronic poll books. Their opposition is based on the ability to manipulate any electronic or computer based system, similar to the opposition to DRE election systems, and even to vote tabulators.

ELECTION CENTERS

Election Day vote centers are non-precinct based locations for voting on Election Day. The sites are fewer in number than precinct-polling places. They can make voting easier for the general population by being located in areas where people congregate and conduct business rather than distributed among many residential locations. They can substantially cut election costs in low turn out elections by increasing the ratio of voters to election officials. Iowa law allows the use of election centers in school board and city elections. Because of the reduced costs school boards and perhaps cities may request use of vote centers in Scott County. However, some voting integrity advocates object to election centers due in part to the necessary reliance on a computerized information and the need for networking the computers from the various centers to avoid fraud.

Chapter

4

Conclusions And Recommendations

From the above review several conclusions can be drawn. Not being fully engaged in the national and state levels of policy discussions has left Scott County at a disadvantage when final decisions are made. Scott County would have been better prepared for the requirements of HAVA had county election officials participated in the discussion with state election officials which began three years before the implementation deadline. Neither the county auditor at that time, nor her staff, attended any of those meetings.

The current configuration of election systems for Scott County is adequate in terms of meeting the minimum requirements of state and federal law. However, the primary voting system, AccuVote OS, is subject to potential disruption due to memory card failures. The potential for disruption came to life in the 2008 general election. This system utilizes old technology, spare parts will become difficult to find and it will likely become obsolete within approximately ten years or less.

Technological changes such as electronic poll books can reduce both election costs and election errors. However, increasing reliance on technological advancements will bring some opposition from voting integrity advocates due to the potential for untraceable manipulation of data and alteration of election results.

Recommendation One – Promote Active Engagement on Important Issues Affecting Elections

Scott County needs to be more engaged in understanding and shaping the changing landscape of elections. For the past decade or longer, Scott County did not fully participate in the dialogue surrounding elections. Unfortunately this was a time of tremendous changes in election law and technology. We lost out on the opportunity to help guide that change and we misunderstood the level and significance of the changes which

did occur. Thus, Scott County went from being in the forefront of election technology by being among the first to adopt optical scan tabulators to being behind when we had to scrap that system and adopt another system which now appears to have an unexpectedly short life span.

Being engaged will cost extra in expenses for travel and schools of instruction for the Auditor and staff. However, those costs would be recouped many times over in savings from new technology and avoided costs. As an example, we are currently engaged in the evaluation and input process regarding electronic poll books. This technology has the potential for saving thousands of dollars in over-time and temporary labor costs. However, evaluating this new technology will require travel to other counties and to meetings sponsored by the Secretary of State for personal observation and evaluation by the Auditor and staff.

Another important election issue on the state and national level is post election audits of vote tabulating equipment. As noted above, the Iowa House of Representatives passed a post election audit bill in the 2009 session. While the Senate did not act on the matter, it is likely that this provision will reemerge in a future session. Also, there are efforts under way on the national level to require auditing, among a host of other provisions. These actions are being driven by an active lobby of election integrity organizations. Thus, it would behoove Scott County to participate in the dialogue regarding audits to insure the reasonableness and cost effectiveness of any new requirements on the county.

Recommendation Two – Delay Replacement of Vote Tabulators until after the 2012 General Election

While not yet obsolete, the AccuVote OS system is old technology which will continue to experience maintenance problems due to a decreasing supply of spare parts. However, immediate replacement is not prudent as there has been a significant public investment in this system without a commensurate time period of public benefit. Further, the system continues to work so that the public benefit can be achieved.

In addition, replacement should not occur in 2011 as decennial redistricting occurs that year, and election staff will be heavily involved with that process, and not fully available to deal with a new primary voting system. Therefore, unless there is a major break down of the system or a catastrophic loss of replacement parts, the county should not look to replacement before the 2012 general election.

Replacement should be considered for early in the calendar year. Replacement should occur in an odd numbered year as there will not be a general election in an odd numbered year which will allow for a smoother transition to a new system. Election staff will have more time to become familiar with a new system and train poll workers without large numbers of voters creating undue stress for poll workers. While delaying replacement will cause progressively increased risks of election problems, Auditor Moritz intends to analyze system performance after each major election to more fully apprise the Board of the likelihood of these risks.

The AccuVote OSX, Premiere's newest version of optical scan tabulator, cost \$7,095 per machine under the most recent state purchasing plan, with shipping and handling adding \$75 per machine. Because this was a statewide purchase funded with HAVA money there was a substantial volume discount. Any purchase made by Scott County would not have the same level of volume discounting. Staff estimates the cost per machine at \$7,900 for 80 machines, resulting in an estimated purchase cost of \$632,000, plus shipping of \$6,000. In addition there would be various training, acceptance testing and set up costs which staff estimates at \$20,000. The total cost if purchased today is estimated at \$658,000. On going maintenance and warranty costs would remain the same.

This estimate is based on 2008 prices. Staff contacted William Vandenberg of Adkins regarding price inflation on election equipment. He related that pricing for the AccuVote OS has remained steady for the past fifteen years in the range of \$6,000 to \$6,500 depending on volume discounts. The newer OSX system has not been out long enough to estimate cost increases, but he sees no reason to assume inflationary pressures on this equipment item and that the price would remain in the \$7,000 to \$8,000 range depending on volume discounts.

As of this writing, there are no outside funds available for purchasing a new primary tabulating system. Thus funds would need to come from the county, either through a sinking fund dedicated to purchase of new equipment, special budgeting when the time comes for purchase of new equipment or letting an essential

county purpose bond. There seems to be no legal impediment to the phase-in purchasing of new equipment over a multi-year basis. However, the introduction of the equipment would have to occur uniformly throughout the county for any county-wide election such as a primary or general election.

Recommendation Three – Phase-in Use of Poll Books to Decrease Election Costs and Errors in Processing Voters; Add Extra Scanning Capacity to Facilitate Use of I-VOTERS

Auditor Moritz and staff are monitoring developments in the use of this technology. We have provided input regarding its development in terms of the needs and uses we believe will be most beneficial to Scott County. If the system is properly designed, its use in satellite polling locations could substantially reduce costs for overtime and temp employees by reducing waiting times, over-processing of ballots and better utilization of staff. Further, use of the poll books at individual precincts would reduce errors and decrease waiting times for voters. Ineligible felons would be automatically denied a ballot. Election day registrations would be greatly simplified, as would in-county changes of address.

The costs from the 2008 general election for overtime, benefits and temporary workers were approximately \$63,320. Most of the overtime was generated by after hours processing into the I-VOTERS system of the absentee votes cast at satellite locations during the day. Real time processing of absentee votes would greatly reduce overtime and temporary worker costs. Alternatively, if real time processing from remote sites cannot be achieved, electronic poll books could be used to perform virtual real time processing and then download the results from the day in a single data burst to I-VOTERS. A conservative estimate of reducing these costs by fifty percent would have resulted in savings of \$31,660 in the 2008 general election. There would be proportionally lesser savings in non-presidential general elections as turn out in these elections is in the range of fifty percent of registered voters. The primary benefit in city, school board and special elections would be decreased errors as there is usually very little overtime or employment of temporary workers.

The Auditor's office has three notebook computers and three Dymo-single printers which could be used as poll books at the three traditional satellite voting places. It is possible that there are additional notebook or laptop computers owned by Scott County which could be used at precinct polling places. Additional printers would need to be purchased. The Auditor would prioritize use of poll books at higher turn out precincts and those precincts with significant numbers of election day registrations or changes of address. However, a full conversion to poll books for all polling places would require the expenditure of funds for new computers and printers. If Scott County were to move in this direction then we should take advantage of any discounts which might be available through bulk purchasing by the Secretary of State.

These improvements would have upfront costs in computers and printers, and continuing costs for labels and printer supplies. The Secretary of State estimated the cost per polling location to be a maximum of \$1,339, which would include two notebook computers at \$550, one Dymo-double printer at \$170 and Access Point software at \$69. Bulk purchasing of equipment should drive down the cost significantly. At especially high turn out locations an additional computer may be necessary to provide timely processing of voters.

Finally, adding a scanner will allow for two staff to scan original voter registration documents into the I-VOTERS system. An additional I-VOTERS compatible scanner costs approximately \$1,000.

