

MINUTES OF THE HOUSE GOVERNMENTAL ORGANIZATION AND ELECTIONS COMMITTEE

The meeting was called to order by Chairman Jene Vickrey at 3:30 P.M. on February 15, 2005 in Room 519-S of the Capitol.

All members were present except:

Representative Virginia Beamer- excused
Representative Melody Miller- excused

Committee staff present:

Mike Heim, Legislative Research Department
Martha Dorsey, Legislative Research Department
Norm Furse, Revisor of Statutes Office
Theresa Kiernan, Revisor of Statutes Office
Maureen Stinson, Committee Secretary

Conferees appearing before the committee:

Rep. Tom Holland
Brad Bryant, Office of the Secretary of State
Brian Newby, Johnson County Election Office
Ron Roberts, Butler County
Kevin Siek, Topeka Independent Living Resource Center
Michael Byington, Kansas Association for the Blind and Visually Impaired
Michael Donnelly, Disability Rights Center of Kansas
Rep. Dilmore
Danielle Noe, Johnson County Board of County Commissioners
Mike Pepoon, Sedgwick County
Terry Holdren, Kansas Farm Bureau

Others attending:

See attached list.

Chairman Vickrey opened the hearing on:

HB 2254 **Elections; paper verification for electronic voting machines**

Rep. Tom Holland testified in support of the bill (Attachment 1). He said the legislation, if enacted, would require that all electronic voting machines/Direct Recording Electronic (DRE) systems be able to generate a voter verified paper audit trail (VVPAT).

Brad Bryant, Office of the Secretary of State, testified in opposition to the bill (Attachment 2). He said the proposed legislation is an unnecessary and extremely expensive technical requirement that is not feasible with current technology.

Brian Newby, Johnson County Election Office, testified in opposition to the bill (Attachment 3). He said a required paper printout (VVPAT) would create a need for purchasing more machines to have at polling locations to accommodate the increase in voting time and the longer lines that would result from this increased voting time.

Ron Roberts, Butler County Clerk/Election Office, testified in opposition to the bill (Attachment 4). He explained that this bill could make necessary the expenditure of \$800,000.00 or more for Butler County if the purchase of new electronic voting machines were required.

Kevin Siek, Topeka Independent Living Resource Center, testified in opposition to the bill (Attachment 5). He said they oppose the legislation because it will disenfranchise voters with visual impairments.

Michael Byington, Kansas Association for the Blind and Visually Impaired, Inc. testified in opposition to the bill (Attachment 6). He said that the technology to make paper ballots accessible to all disability groups simply does not exist.

Michael Donnelly, Disability Rights Center of Kansas, testified in opposition to the bill (Attachment 7). He said that VVPAT technology is not yet able to meet the accessibility requirements of voters with disabilities and, as such, is not yet ready for deployment in Kansas.

Written testimony in opposition to the bill was submitted by Karen Hartenbower, Lyon County Clerk/Election Office (Attachment 8).

Written testimony in opposition to the bill was submitted by Connie Schmidt, retired Election Commissioner, Johnson County (Attachment 9).

Chairman Vickrey closed the hearing on **HB 2254**.

Chairman Vickrey opened the hearing on:

HB 2139 **Fence viewers; designees of board of county commissioners**

Rep. Dilmore testified in support of the bill (Attachment 10). He explained that the current law allows only two commissioners to bind the commission even if there are five or seven members. He said the bill addresses that problem

CONTINUATION SHEET

MINUTES OF THE House Governmental Organization and Elections Committee at 3:30 P.M. on February 15, 2005 in Room 519-S of the Capitol.

and allows for better use of county commissioners' time.

Danielle Noe, Johnson County Board of County Commissioners, testified in support of the bill (Attachment 11). She said that Johnson County has consistently advocated that the current law be amended to allow the Board of County Commissioners to appoint designees to do the fence viewing.

Mike Pepoon, Sedgwick County, testified in support of the bill (Attachment 12). He said that the current legislation needs to be amended if for no other reason than the fact that current law allows two county commissioners be empowered to take action as fence viewers.

Judy Moler, Kansas Association of Counties, testified in support of the bill (Attachment 13). She said that the bill is permissive only and would apply only in counties that choose to designate others as fence viewers.

Terry Holdren, Kansas Farm Bureau, testified in opposition to the bill (Attachment 14). He said that Kansas Farm Bureau members have long supported the responsibility of the majority of county commissioners in each county to serve as fence viewers for settling disputes regarding fences. He said that duty should be maintained.

Chairman Vickrey closed the hearing on **HB 2139**.

HB 2095 **Office of public integrity; established**

Rep. Lane made a motion to amend HB 2095 by changing the date from December 31 to January 15, and for the favorable passage of HB 2095 as amended. Rep. Holland seconded the motion. The motion carried.

HB 2229 **Cities; unilateral annexation; factors to consider prior to annexation**

Rep. Huebert made a motion for the favorable passage of the HB 2229. Rep. Lane seconded the motion. The motion carried.

HB 2093 **Counties; procedure to change boundaries**

Rep. Yonally made a motion to adopt a balloon amendment (Attachment 15) to delete a provision which would have allowed the boards of county commissioners to initiate a change in boundaries of counties to submit the issue to the electorate. Rep. Goico seconded the motion. The motion carried.

Rep. Goico made a motion for the favorable passage of HB 2093 as amended. Rep. Sawyer seconded the motion. The motion carried.

HB 2094 **City and county consolidation**

Rep. Sawyer made a motion to adopt a balloon amendment (Attachment 16) to add the dual majority vote requirement; the added newspaper notice; the ballot question language regarding the necessity of a tax levy and the increased number of meetings required of the reorganization commission. Rep. Lane seconded the motion. The motion carried.

Rep. Storm made a motion for the favorable passage of HB 2094 as amended. Rep. Swenson seconded the motion. The motion carried.

Chairman Vickrey adjourned the meeting.

The next meeting is scheduled for Thursday, February 17, 2005.

**House Governmental Organization and Elections
Committee**

Date 2-15-05

Name	Representing
<i>Richard Lannon</i>	<i>KPH</i>
Danielle Kloe	Johnson County
Erik Sartorius	City of Overland Park
BRIAN NEWBY	Johnson County Election Office
Ronald Roberts	Butler County Election
<i>Jessie Goodwin</i>	<i>City of Wichita</i>
Brent Hahn	KLA
Lucas Bell	Kearney and Associates
Nancy Weeks	Nehalem Co. Treas. & KGOA
Gat Wille	Douglas Co. Treas & KCOA & KCTA
TERRY HOLDREN	KFB
BRAD Herzog	citizen
MIKE WELLI	MACU
DANIELLE DAVEY	Intern - Dillmore
Jesse Boyan	Secretary of State
Doris Slocumb	League of Women Voters
Michael Doreilly	DK Kansas
Kevin Siek / Sharon Joseph	TILRC
Michael Byington	Ks. Assn of Blind and Vis Imp.
Harriet Leage	Ks Assn of Broadcasters

STATE OF KANSAS



TOPEKA

HOUSE OF
REPRESENTATIVES

TOM HOLLAND

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COMMITTEE ASSIGNMENTS
RANKING DEMOCRAT: GOVERNMENTAL ORGANIZATION
AND ELECTIONS
MEMBER: EDUCATION,
HEALTH & HUMAN SERVICES,
LEGISLATIVE EDUCATION PLANNING
COMMITTEE

February 15th, 2005

Chairman Vickrey and members of the Governmental Organization and Elections Committee:

Good afternoon! My name is Tom Holland and I am the 10th District State Representative serving the communities of south Lawrence, Baldwin City, Wellsville, and north Ottawa.

Today I am here before you to speak in support of House Bill 2254. This legislation, if enacted, would require that all electronic voting machines / Direct Recording Electronic ("DRE") systems be able to generate a voter verified paper audit trail (or "VVPAT"). I believe that the ability of these voting devices to provide a paper audit trail is crucial to 1) being able to recover vote totals cast by voters in the event of machine failure or vote recording / vote reporting errors, and 2) provide the voting public assurance that every vote made on these machines has been recorded and recorded properly.

The following incidents demonstrate why a paper audit trail capability is so crucial to ensuring the legitimacy of U.S. elections:

- 1) Diebold Election Services, Inc.'s TSx system was used for electronic voting for the March 2nd, 2004 California Presidential Primary. The president of Diebold Election Services, Inc. subsequently admitted to security flaws and disenfranchising voters. On April 30th the Secretary of State decertified all touch-screen machines and recommended criminal prosecution of Diebold Election Services. The California Attorney General has joined a lawsuit against Diebold for fraudulent claims made to officials.
- 2) During the November 2004 Presidential elections in Ohio, at least 25 electronic voting machines in Mahoning County transferred an unknown number of Kerry votes to Bush. These devices did not have a paper audit trail;
- 3) During the November 2004 Presidential elections in North Carolina, 4,438 votes for a state-wide agriculture commissioner's race failed to be recorded on a single electronic voting machine in Carteret County when poll workers failed to exchange memory cartridges on the machine when it reached its storage capacity. This device also did not have paper audit trail capabilities.

In the case of the North Carolina glitch, the significance of this malfunction proved to be extremely critical as the eventual winner of the agriculture commissioner race led by only 2,287 votes with over 3 million votes cast. The outcome of this race was ultimately determined only

House Gov. Org. & Elections

~~Attachment#~~

Date: 02-15-05

Attachment# 1

after the candidate having the fewer votes finally conceded the race, with the concession occurring 3 months after the actual election. Had the North Carolina machine been fitted with paper audit trail capabilities, this problem could have been resolved in a manner of hours.

Many electronic voting machines have not been designed with an auditable paper trail. Without one, it is extremely difficult, if not impossible, to confirm the machine's tabulated results. In addition, computer scientists have stated that some of these machines are not tamper resistant. Internal e-mails for one manufacturer even indicated that data files used in the machines were not password protected to prevent manual editing. It is also known that at least one voting machine model began counting backwards after it reached 32,000 votes. The manufacturer had supposedly known about this problem for two years but failed to correct the deficiency.

Five states currently have legislative statutes or administrative procedures that require their electronic voting machines produce a voter verified paper audit trail. Those states include California, Alaska, Ohio, Wisconsin, and Nevada. Colorado has passed a resolution indicating its desires to have its electronic voting machines fitted with VVPAT capabilities. In addition, another 21 states (including Texas, Arizona, and Utah) are presently considering enactment of this type of legislation.

The U.S. Congress is also weighing in on this issue. Senator John Ensign, R-Nevada, and a bipartisan group of legislators have introduced "The Voting Integrity and Verification Act". This legislation would require printed ballots that voters could check after using an electronic voting machine. Senator Ensign noted that his home state of Nevada required a voter verified paper audit trail for the 2004 election. "Not only did our election go off without a hitch, but voters across Nevada left the polls with the knowledge that their vote would be counted and that their vote would be counted accurately. Every American should have that confidence."

If Kansans are to have confidence in the voting process, it is imperative that we as responsible public officials implement prudent and reasonable measures to ensure that the will of the voters is properly recognized in each and every election. **The outcome of every Kansas race, be it a local race or a state-wide race, must be above reproach.** If we are to deploy electronic voting machines in Kansas, then we simply must make the process transparent and auditable by implementing voter verified paper audit trail capabilities with these machines.

I thank you for hearing my testimony today regarding this most urgent matter. I look forward to answering your questions at the appropriate time.

Thank you,



Tom Holland
State Representative – 10th District

RON THORNBURGH
Secretary of State



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STATE OF KANSAS

House Committee on Governmental Organization and Elections

Testimony on House Bill 2254

Brad Bryant, Deputy Assistant Secretary of State
Elections and Legislative Matters

February 15, 2005

Mr. Chairman and Members of the Committee:

Thank you for the opportunity to testify on behalf of the Secretary of State. We oppose passage of House Bill 2254 as an unnecessary and extremely expensive technical requirement that is not feasible with current technology.

This bill would require all electronic voting equipment to be equipped with voter verifiable paper audit trails (VVPATs). While VVPATs have gained some appeal during the past year among some segments of the voting public, many election administrators and others experienced with electronic voting equipment do not support VVPATs and oppose efforts to require them. VVPATs may become an integral part of electronic voting at some point in the future, but the technology is not yet mature and has not been tested adequately to apply it universally.

We offer the following points to support our argument against passage of this legislation:

- The Help America Vote Act of 2002 (HAVA) requires at least one fully accessible, ADA-compliant voting device in each polling place by 2006 to allow voters with disabilities, including the visually impaired, to vote a secret, independent ballot without assistance. Requiring a paper receipt on these devices negates this requirement in HAVA.
- Under HAVA, the Election Assistance Commission is required to study and report on electronic voting. The results have not been issued yet.
- Under HAVA, the National Institute of Standards and Technology is required to develop standards for voting equipment based on recommendations from the Technical Guidelines Development Committee. The standards have not been issued yet.
- The existing Federal Election Commission Voluntary Standards require paper audit trails, which all Kansas electronic voting equipment has, but the standards do not require *voter verifiable* paper audit trails.

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Attachment # 2

- Electronic voting devices have been used successfully for 25 years, including 18 years in Kansas. There are no documented cases of lost votes caused by the machines.
- If a paper receipt is removable, it invites fraud.
- A voter could disrupt the process by fraudulently claiming the receipt was incorrect, thereby casting doubt on all votes cast on that machine.
- A voting system is a *system*, with security at all points in the electoral process. VVPATs are involved at only one point and do not enhance the overall security of the process.
- Our estimate of the fiscal impact of this legislation is that it will cost state and county governments more than \$7,500,000 during the next 16 months.

We urge the committee not to pass House Bill 2254. Thank you for your consideration.

(i) establishing a voter education program specific to that voting system that notifies each voter of the effect of casting multiple votes for an office; and

(ii) providing the voter with instructions on how to correct the ballot before it is cast and counted (including instructions on how to correct the error through the issuance of a replacement ballot if the voter was otherwise unable to change the ballot or correct any error).

(C) The voting system shall ensure that any notification required under this paragraph preserves the privacy of the voter and the confidentiality of the ballot.

> (2) AUDIT CAPACITY.—

(A) IN GENERAL.—The voting system shall produce a record with an audit capacity for such system.

(B) MANUAL AUDIT CAPACITY.—

(i) The voting system shall produce a permanent paper record with a manual audit capacity for such system.

(ii) The voting system shall provide the voter with an opportunity to change the ballot or correct any error before the permanent paper record is produced.

(iii) The paper record produced under subparagraph (A) shall be available as an official record for any recount conducted with respect to any election in which the system is used.

7 (3) ACCESSIBILITY FOR INDIVIDUALS WITH DISABILITIES.—
The voting system shall—

(A) be accessible for individuals with disabilities, including nonvisual accessibility for the blind and visually impaired, in a manner that provides the same opportunity for access and participation (including privacy and independence) as for other voters;

(B) satisfy the requirement of subparagraph (A) through the use of at least one direct recording electronic voting system or other voting system equipped for individuals with disabilities at each polling place; and

(C) if purchased with funds made available under title II on or after January 1, 2007, meet the voting system standards for disability access (as outlined in this paragraph).

(4) ALTERNATIVE LANGUAGE ACCESSIBILITY.—The voting system shall provide alternative language accessibility pursuant to the requirements of section 203 of the Voting Rights Act of 1965 (42 U.S.C. 1973aa-1a).

(5) ERROR RATES.—The error rate of the voting system in counting ballots (determined by taking into account only those errors which are attributable to the voting system and not attributable to an act of the voter) shall comply with the error rate standards established under section 3.2.1 of the voting systems standards issued by the Federal Election Commission which are in effect on the date of the enactment of this Act.

(6) UNIFORM DEFINITION OF WHAT CONSTITUTES A VOTE.—Each State shall adopt uniform and nondiscriminatory standards that define what constitutes a vote and what will be

March 3, 2004

Dear Colleague:

As the principal authors of the Help America Vote Act (Public Law 107-252) (HAVA), signed into law by President Bush on October 29, 2002, we feel compelled to express our concerns about recent legislative efforts that promise enhanced electronic voting system security. Various proposals have been introduced in the House and Senate, but a common feature of these bills is they would amend HAVA to require that all voting systems, including electronic and computer-based systems, produce or accommodate a "voter verified paper record." Not only are such proposals premature, but they would undermine essential HAVA provisions, such as the disability and language minority access requirements, and could result in more, rather than less, voter disenfranchisement and error.

We are certainly aware of the alleged concerns that have been raised in recent months regarding security issues associated with computer-based voting systems and technologies, especially Direct Recording Electronic (DRE) voting systems. These concerns are neither new nor unanticipated by HAVA. To address security-related issues, HAVA creates a Technical Guidelines Development Committee, chaired by the Director of the National Institute of Standards and Technology (NIST), to assist the new Election Assistance Commission (EAC) in developing guidelines and standards to ensure the reliability of the computer technologies being employed in voting systems. These standards will focus not only on the security of computer and network hardware and software and data storage, but also on the detection and prevention of fraud and the protection of voter privacy. Additionally, HAVA provides that the testing and certification of voting system hardware and software must take place in accredited laboratories. NIST initiated this process with a two-day public conference this past December, 2003.

The goal of HAVA is to ensure that every eligible American has an equal opportunity to cast a vote and have that vote counted. HAVA does not mandate the use of DRE systems. It does require, however, that voting systems be enhanced to avoid the errors and accessibility problems associated with antiquated systems, such as punch cards. Computer-based voting systems have a demonstrated track record of achieving this goal, particularly for persons with disabilities. While there are risks associated with any technology, the solution is not to rush to judgment by returning to flawed systems. Rather, the answer is to allow the Commission, together with the active input of election officials, computer experts, and civil rights groups representing voter interests, to develop standards for ensuring the security of all voting systems, as required under HAVA.

The proposals mandating a voter-verified paper record would essentially take the most advanced generations of election technologies and systems available and reduce them to little more than ballot printers. While such an approach may be one way to address DRE security issues, it would, if adopted, likely give rise to numerous adverse unintended consequences. Most importantly, the proposals requiring a voter-verified paper record would force voters with disabilities to go back to using ballots that provide neither privacy nor independence, thereby subverting a hallmark of the HAVA legislation. There must be voter confidence in the accuracy of an electronic tally. However, the current proposals would do nothing to ensure greater trust in vote tabulations but would be guaranteed to impose steep costs on States and localities and introduce new complications into the voting process.

Questions regarding voting systems security, as well as many others, need to be examined by the entity responsible for doing so under existing law, the Election Assistance Commission, before Congress begins imposing new requirements, just months before the 2004 presidential and congressional elections, that have not been fully considered. The security of voting technology is a non-partisan issue. We encourage you to allow HAVA to be implemented as enacted and provide those who are charged with ensuring the security of voting systems the time and flexibility needed to get the job done effectively.

Sincerely,

S/REPRESENTATIVE ROBERT W. NEY

S/REPRESENTATIVE STENY HOYER

S/SENATOR MITCH MCCONNELL

S/SENATOR CHRISTOPHER J. DODD

Policy Statement

Voting System Security

INTRODUCTION

A. Overview of Voting Systems

B. Six Components of Voting System Security

1. Access to the system
2. Transmitting data
3. Testing voting equipment
4. Polling place security
5. Equipment storage
6. Voting equipment certification process

INTRODUCTION

notes

Security of any computer-based system requires a combination of three factors. First, the computer must provide audit data that is sufficient to track the sequence of events that occur on the system and, to the extent possible, identify the person(s) that initiated the events. Next, there must be well defined and strictly enforced policies and procedures that control who can access the system, the circumstances under which they can access the system, and the functions that they are allowed to perform on the system. Finally, there must be physical security in place such as fences, doors and locks that control and limit access to the equipment. It is recommended that each county adopt the following policy and its six components, but each may have different procedures for adhering to the policy. Kansas counties currently use DRE, optical scan and paper ballots to conduct elections, and each requires different procedures to implement the security policy.

A. Overview of voting systems

Direct recording electronic (DRE): A standard personal computer running an executable software module is used to define the election, enter the candidates and questions, and format the ballots for the voting devices. This computer also accumulates the votes after the polls close and prints various reports and audits. Three Kansas counties currently use DRE systems, and a fourth uses a combination of DRE and optical scan.

Optical scan: A paper ballot is used to cast a vote and is then fed through a scanner. The device reads the voter's marks on the ballot, and tabulates number of votes cast for each candidate or question. Eighty-one Kansas counties currently use optical scan systems.

Paper ballot: Votes are recorded on paper ballots and counted by hand. Twenty-one Kansas counties currently use paper ballots.

B. Six components of voting system security

1. Access to the system

- stand-alone system
- no network connection
- no modem
- only operating system and voting software loaded
- controlled access with authorized users

-1-

The computer-based voting system should not be connected to any network and it should not have a modem. If it does have a modem, it shouldn't be connected to the Internet. The computer should have only the operating system and voting software loaded. Additional applications could jeopardize system security.

If the computer has no outside connections, it can only be accessed by county election staff or other authorized persons. Any such system should also have password requirements. There should be strict procedures that control who has access to the election system, when they can access the system, what components they can access, and what functions they are allowed to perform.

The computer portion of the election system contains features that facilitate overall security of the election system. Primary among these features is a comprehensive set of audit data. For transactions that occur on the system, a record is made of the nature of the transaction, the time of the transaction, and the person that initiated the transaction. This record is written to an audit log to allow the sequence of events surrounding the incident to be reconstructed.

-2-
A security program, similar to a virus detector program, should be run against the operating system and the election tabulation software before beginning the definition of an election to verify that the code has not been altered. This program should be repeated after the close of the election to verify that the code did not change during the election.

Permanent storage of media containing certified application programs should be within a secure, fireproof location such as a safe. Additional backup copies of application programs and media containing election data should be created and stored securely off site.

2. Transmitting data

- No data transmission by modem – from polling place to election office or from election office to state.

It is important that results from elections not be sent from polling places to election offices via modem, network, phone line, cable, or any other electronic form of file transmission. The same applies when sending results from the county election office to the Secretary of State's office. Results should be sent by fax, phone or by inputting the results in the SOS database directly using an IP address and/or using the state's secure Public Key Infrastructure (PKI) system.

3. Testing voting equipment

notes

- public test five days prior to election
- test before public test
- test after canvass
- print zero totals
- end of day totals

Voting equipment should be tested when it is first received from the vendor. Tests should cover all functions that will be necessary to conduct an election. Prior to use in an election, each voting machine should undergo system diagnostics to ensure proper operation of certified components. A checklist confirms the outcome of acceptability. Any component failure should be logged and repairs to equipment performed as soon as practical.

4. Polling place security

- hardware security
- software security
- poll worker procedures

-3-

There are many polling places in Kansas that simply do not provide an ideal physical security environment. For instance, church lobbies, school gymnasiums and other places may not always be locked or secured. The county election officer should, to the extent possible, designate polling sites that afford the necessary security features and should maximize the use of whatever security features exist.

The memory cards in each touch screen voting station should be stored within a locked compartment. The supervising judge should be the only person with a key to this compartment. The memory cards and/or ballots from each voting location are transported from the voting location to the county elections office by a sworn election official or a sworn law enforcement officer.

The area of the voting location that contains the voting stations is secure. A voter is not allowed to enter this area until a voting station is available for his or her use. No person other than a voter, a person assisting a voter, or a poll worker may enter this area.

Voting machine protective counters should be observed and recorded with a date of record. Voting machines and ballot boxes should be sealed before delivery to polling place locations. Seals should be tamperproof and serialized with numbers. Logging of machine serial number, seal number and designated voting location is an essential part of the audit trail.

Equipment delivery:

Voting equipment delivery to polling place locations should be conducted with the same degree of control as applied to storage. A delivery person or company should continue the audit trail for the election officer. Documentation and daily reporting are essential.

- The delivery person or company, or in some cases the supervising judge, should provide documentation containing voting machine numbers, seal numbers and identification for each voting location where equipment has been delivered.
- A list of persons involved in equipment delivery should be maintained by the county election officer.
- Voting machines should remain locked and stored in a secure location. Multiple voting machines should be secured together by a keyed or combination lock and a single cable or chain. Additional supplies delivered with machines should be secured with the same cable or chain.
- Polling places should be in locked buildings or locations that are capable of monitoring secure storage of voting equipment.

Election worker security awareness and requirements:

All election judges are responsible for maintaining the security of the polling place, the integrity of the vote and the protection of voting equipment and supplies. Judges must be vigilant throughout election day and be aware of who is in the polling room. Frequent monitoring of voting machines and securing voting supplies ensures that any malicious attempt to compromise the accurate gathering and reporting of the vote is unsuccessful. The following steps should be taken to ensure that the voting equipment and the voting process are secure at all times in every precinct:

Supervising judges:

- Inspect voting machines for physical damage while setting up or closing units and record on maintenance log. Examples: damaged or broken lid hinges, cracked cases, and damage to equipment inside case.

- Control and secure keys to all voting machines.
- Assure that the election media slot (memory cartridge slot area) on every voting machine is locked.
- Report any suspicious activity in or around voting machines to the county election officer and call 911 if immediate help is required.

5. Equipment storage

- election computers should be kept in locked offices
- physical security during non-election times
- protective seals
- limited access

The first line of defense in any system is physical security. When not in use, all election equipment should be stored in a locked room. Access to the room should be limited to election officials and authorized county officials or technicians. A paper activity log should be maintained to record date, time, staff person, and reason for entering the secured computer room. A video camera is *recommended* to be installed in the locked office to monitor activity. All voting machine keys, voter cards, and storage media should be secured in a controlled access room. Staff should maintain a detailed inventory control of these supplies:

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6. Voting equipment certification process

Kansas participates in the Federal Election Commission (FEC) voluntary voting systems standards program. This program defines three levels of testing that voting equipment must pass before it can be used: national qualifications testing, state certification, and local acceptance testing.

National independent testing authorities (ITAs) selected and monitored by the National Association of State Election Directors (NASED) Voting System Board administer the qualifications tests. After ITA certification, any change to either the operating system or the election system requires retesting. A complete description of the qualification tests can be found in the FEC voting system standards section at <http://www.fec.gov>.

After the system has successfully completed qualification testing it is brought to the state for certification testing. Certification testing is conducted by the Secretary of State's office using the following procedure:

- The manufacturer or vendor sends a request for certification in writing to the secretary of state, accompanied by a \$500 fee.
- The secretary of state requires that the equipment be certified by an independent testing authority (ITA). A copy of the ITA's report must be submitted.
- The secretary of state reviews the equipment to ensure that it meets standards established by the Federal Election Commission and the requirements of Kansas law.
- The secretary of state conducts a public meeting in Topeka at which the manufacturer or vendor displays the equipment and members of the Secretary's staff and other interested persons test the equipment.
- The secretary of state may hire a private expert to review the equipment at the manufacturer's expense.
- The secretary of state contacts other jurisdictions in the United States that have certified and used the equipment to inquire about their experiences.
- The secretary of state may grant temporary conditional approval for the equipment to be used in a Kansas jurisdiction before granting final certification.
- If the above conditions are met, the secretary of state makes the final decision whether to grant certification and informs the manufacturer and vendor of the decision in writing.

The final level of tests, acceptance tests, is conducted in the county offices after the voting system has been delivered and installed. The purpose of these tests is to verify that the system as delivered and installed in the county is complete, is working properly, and is identical to the system that was previously qualified by the ITA and certified by the state.

The Help America Vote Act has given the National Institute of Standards and Technology (NIST) a key role in helping to realize nationwide improvements in voting systems by January 2006. NIST's Information Technology Laboratory (ITL) is coordinating the agency's HAVA efforts through its expertise in areas such as computer security and usability. NIST supports the Election Assistance Commission (EAC) as chair of the Technical Guidelines Development Committee (TGDC).

The TGDC makes recommendations to the EAC on voluntary standards and guidelines related to voting machines. As of this writing, NIST has not adopted guidelines or standards.

notes

Conclusion

Adoption of this voting system security policy will increase the overall security of each county's system as well as the security of the electoral process across the state. Further, it will enhance preparation for the deployment of HAVA-compliant voting equipment in the next several years.

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ELECTION CENTER NATIONAL TASK FORCE
ON ELECTION REFORM 2004

ELECTION ADMINISTRATION COMMITTEE RECOMMENDATIONS
ON VOTER VERIFIED PAPER AUDIT TRAILS

The Election Administration Committee will make recommendations on a number of issues including the logic and accuracy testing of voting equipment, the procurement of voting equipment, and early/absentee/satellite voting. The focus of this document though is the committee's feelings on the issue of voter verified paper audit trails (VVPAT) on DRE (Direct Recording Electronic) voting equipment. While a complete report will be included in the final report of the Election Center National Task Force on Election Reform, the committee feels it is important to provide information as quickly as possible as states and federal agencies are discussing this important issue. As we began discussion on this issue, we recognized that some states have already made the decision to move to VVPAT. Other states are just beginning the discussion on this topic and the committee feels it is important to get this information distributed so state legislatures could take our recommendations into consideration when discussing this issue.

The committee was unanimous in stating that all voting systems need the ability for verification that the voters' ballots are recorded and tabulated in accordance with the voters' intent. Whether a paper-based or direct recording electronic voting system, tabulation is conducted electronically and verifiable, documented audit procedures are necessary on all voting systems to insure the integrity of ballot tabulation. For paper-based systems, this audit trail is created by the voter in the form of the marked ballot. For DRE systems, the voter creates an electronic ballot record that needs additional mechanisms to provide verifiability but does not necessarily require a voter verified paper ballot record.

Election administrators currently rely on a combination of an internal audit conducted by the DRE, security procedures and testing to insure the integrity of their voting systems. While these mechanisms have worked well, we feel that confidence in their reliability would be enhanced through increased audit capacity by way of an independent, highly secure, electronic ballot record, not exclusively dependent on the reliability of or "trust" in one vendor's software. Current DRE audit trails have been challenged in, at least, two significant ways: 1) they provide no independent means of verification apart from the operating software provided by the vendor and 2) insufficient protections exist against accidental and irretrievable loss of ballot records.

The Committee makes the following recommendations:

1. National Institute of Standards and Technology (NIST) standards are needed for a scientifically sound, independently verifiable audit trail for DRE systems regardless of whether it involves a contemporaneous paper replica or a tamper proof electronic record. NIST will bring a great deal of independent credibility to this process and standards from this organization will provide the election community with the framework necessary for comprehensive audit trails on all voting systems. The committee feels strongly that these standards should not be a federal mandate but should continue to be voluntary standards for states to adopt.
2. While states may adopt VVPAT, it is the consensus of the committee that a paper audit trail is less accessible, more costly, more burdensome to the voters, more complex for poll officials and less accurate than an electronic audit mechanism. We note that manual tabulation of paper ballots may not be an auditable tabulation process. There are no standards for judging the accuracy of hand counting ballots. Standards developed by NIST can provide future means by which independent verification on DREs can take place.
3. Mandating a paper audit trail would stifle innovation and establish a ceiling on the quality of our verification tools. What is needed is not a ceiling but a floor and room for emerging technologies. Technology is advancing every day and a mandated paper audit trail would lock the vendor community in to that technology and slow development of new, possibly better, audit technology.
4. There are potential serious consequences of a VVPAT system. In addition to significant cost increases, these include lengthened voting times, jammed printers slowing the process and possibly exposing voters' votes, and undermining the Help America Vote Act (HAVA) mandate for blind/visually impaired voters to vote independently. Due to lengthened voting times, more voting devices may be needed which will increase even further the need for additional money.
5. Any DRE paper record that is implemented in a state should be designated as an audit record to be used for verification that the equipment is counting correctly and not be designated as the official ballot. The committee has serious concerns that a paper trail produced by a DRE can be accurately counted. ~~Envision scrolling hundreds of thousands of DRE paper ballots~~ back to an exact race then recounting that race. Also, paper ballots produced by a DRE may be more difficult to securely store than electronic records.
6. Any VVPAT system that is implemented should require retention of the paper ballot at the polling location and must preserve secrecy of the ballot. Allowing paper ballot receipts to leave the polling location could lead to voter fraud and vote buying.

It is the recommendation of the committee that voter verified paper audit trails are unnecessary and will create administrative problems that far outweigh any benefit that they bring. In fact, voters themselves have shown that they do not feel the need for a VVPAT. In exit surveys done in the first major election conducted using VVPAT in the State of Nevada, only 31% of the voters actually used the paper ballot to compare all of the races on their ballot. Without such verification, a VVPAT system cannot provide a scientifically reliable audit of voter intent.

We note that this document is a work in progress and subject to change. It will be included in the Election Center National Task Force on Election Reform final report and is subject to review and approval by the full task force. That final report of the task force will be completed in early March.

The members of this committee thank you for taking the time to consider our thoughts and welcome any questions or comments on our recommendations. Please do not hesitate to contact Dana Walch at (614) 466-6998 if you have any questions regarding this document.

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CALTECH/MIT VOTING TECHNOLOGY PROJECT

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SECURITY VULNERABILITIES AND PROBLEMS WITH VVPT

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VTP WORKING PAPER
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Security Vulnerabilities and Problems with VVPT

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Abstract

A proposed Voter Verifiable Paper Trail (VVPT) includes a printed ballot as a receipt that a voter can view to verify their vote before leaving an electronic voting machine. This method is also supposed to insure the accuracy of the recorded vote by allowing the tally to be checked later by counting the collected receipts.

This paper considers problems with ergonomics, logistics, security, fraud, and mechanical fragility with using VVPT. Ergonomic problems are introduced by the receipt having a different layout than the ballot, difficulty remembering previous selections to make the verification, by the extra step it introduces after making selections and by it not working well for sightless people. Logistics problems include difficulties in collecting and organizing the receipts, transporting them, and reading and reconciling them with electronic tallies. Security issues include the possibility that receipts can be systematically misprinted in a way that cannot be detected and that hand counting will not easily detect fraud. Mechanical problems include printer breakdowns and supplies running out. VVPTs could add problems by being questioned in various ways or through the development of computer programs that defraud the VVPT systematically. VVPTs do not address existing sources of disenfranchisement such as registration problems, equipment and ballot problems, and polling place problems.

Experiments and elections have yet to establish that people can in fact verify their ballots using a paper receipt. Effective approaches for accurately counting the paper receipts for auditing purposes have not been established either.

Proving that an election correctly records and transmits the intention of the voter is worthwhile. Computers are the first technology that can easily report voting results in multiple formats. Simple systems-verification solutions are possible. Parallel voting and time shifted testing require no extra equipment. Voter Verified Audio Transcripts would simplify voting and improve audit security by presenting verification as feedback during the selection process rather than post hoc auditing.

Introduction

Choosing a government is contentious and the mechanisms for collecting and counting votes have always been on the minds of the people involved. In ancient Greece, Egypt, and Rome people used physical objects, like shards of pottery, to document their choices. Over the last century, developing voting technology has continued to improve the way votes are marked and collected. In 1868 Thomas Edison invented an electronic voting machine. In the 1890s the so-called "Australian secret ballot" was adopted in United States. Hand transcription of marks on paper has given way to automated optical sensors reading the marks. Automated counting reduces the problems of people overlooking, adding, or removing a mark. Writing down columns of local tallies to be added together by hand has given way to spreadsheets and automated calculations. These methods further eliminate human errors. New computer voting machines will not let voters make the mistake of leaving extra marks on alternative selections or making too many selections for a race. Automated processes are eliminating some errors, as well. Prospects are good for using technology to simplify the voting user experience and increasing its accuracy.

However, all technological improvements raise questions and must be implemented in a controlled way. In the case of voting technology, improvements have required experiments, slow rollouts and adjustments. Brazil introduced electronic voting in stages. In 1996, Brazil put electronic voting into place for 40,000 voters with 7% not being able to succeed at recording their votes electronically. Improvements from that experiment allowed this rate to fall to 2% for the 150,000-person experiment 1998. Improvements from that experiment resulted in only an estimated .2% of 106 million voters who were unable to electronically deposit in Brazil in 2000.

User experience problems plagued the early electronic voting machines introduced in this country; in some cases the number of votes that were left unmarked on the new machines was greater than for the equipment they replaced. For example, some electronic ballots placed the selection to scroll to the next race too close to the selection for depositing the ballot, causing some voters to inadvertently cast their ballots before completing it.

In accordance with law, the paper punch cards from the 2000 Florida election have been destroyed. Many people believe that we will never know the intentions of the voters in United States 2000 presidential election. Forensics [1] shows that 2 to 3 percent of the votes were lost due to problems with registration, ballot design and polling place operations. These problems are not new or unusual but are dramatized by the closeness of the 2000 presidential race, coupled with the desire to properly vet its outcome in an information-sophisticated world. These simple-to-solve problems are not being addressed systematically. Instead, the public conversation has shifted to more vague issues of technology in elections and fraud.

The call has gone out for approaches that will produce accurate, secure recording of votes with complete integrity [6]. Unlike paper ballots, voting machines give feedback to voters as they vote. Voting machines that disallow voting for too many candidates have reduced disenfranchisement of voters [7]. The common belief is that electronic voting machines will simplify the vote collection and counting process for all. Historically, the fragmented voting industry consisted of several companies that compete for the occasional upgrade. In the wake of the 2000 election, the Help America Vote Legislative Act of 2002 changed this in that it made available \$1.2 billion in 2003 to upgrade the country's voting machines quickly [3]. Are these monies being released to buy machines when it could be better spent researching how to improve them and the processes in which they are used?

Concerns about security of the collection and counting process have always been important. Computers offer the first technology that can easily make copies of information in different forms for archival preservation. Electronic voting machines of today keep records of the votes on disk, removable physical media in memories and, as a final count, on a paper scroll. These multiple records can improve voting machines' immunity to problems. For example, if a floppy disk from the Brazilian Procom voting machine is unreadable, the election administrator records another one from the internal flash memory in the voting machine.

However, the big question is how can we prove that the selections made on a computer interface by a voter are reflected correctly in the digital voting machine records? Critics of using computers to perform secure operations are speaking up. Broad media coverage has been given to the issue of how we can know that a vote is collected without the computer program tampering with it.

Many approaches to ensure the secure transfer of a voter's selections into the computer are possible [2]. Adequate and provable electronic security could make certain that the vote tallies reflect the voter's intention. A separate Votemeter machine can check the voting machine while it is running. Modular architectures can segment the process so that any changes in the votes would take multiple changes to code written by different organizations. Some call for the code being open for anyone to view in a so-called *open source* way. Many believe that separate records that are human readable will be most helpful. Open viewability of a second ballot has seemed attractive to many.

The most popular of these in the public's eye have included Voter Verified Paper Trails (VVPT). The various schemes for this all include a display on which a voter makes selections and a way of viewing a paper receipt that is printed to reflect these selections. The voter cannot take this voting receipt away with them because if they did, it could be used to show how they voted and would compromise the secret ballot and security of elections. Nonetheless, such approaches have captured media and governmental attention as a solution. This paper describes some of the difficulties with VVPTs. A forthcoming paper will describe several alternative verifiable approaches to security.

Ergonomics issues

The VVPT is in a different format than the ballot, in a different place, is verified at a different time, and has a different graphical layout with different contrast and lighting parameters. Handling VVPTs causes other ergonomic

problems for the ballot workers. During the first use of VVPT in an election, in November 2003 in Wilton, CT, virtually all voters had to be prompted to find and verify their receipt. This turned into extra effort for poll workers and extra time for voting. Anything that takes a voters attention away from the act of casting a ballot or causes a voter to invalidate their vote will reduce the chances of them voting for the candidate they intended. Many voters are frightened of going to balloting places because they fear intimidations that actually can transpire. They fear the voting process, the technology, and their registration not being there. The complexity of the voting process is already a deterrent from voting; VVPT adds complexity, which could drive away more voters.

People are extremely good at remembering hundreds of precise images and comparing them against the same image [7]. But the format of the paper receipt will be different than that of the voting machine and because of these differences it is difficult for people to compare them after the fact. Most people have had the experience of taking two columns of numbers and finding it difficult to verify that they have not missed a number. Comparing dozens of selections on a voter-verified paper receipt will take such special care. Complications of comparing a separate paper trail in a different ballot format might add extra difficulty for people with learning and reading disabilities. The Wilton, CT experiment found people not noticing the VVPT because it was in a different place in the booth.

Time limits on voting (3 minutes in New York City) are designed to keep balloting running smoothly. This time will likely need to be extended to allow for checking of the voter-verified paper trail. When people are focusing on a ballot it will be extra work to remember that they have to look at another place to verify their ballot.

When a voter deposits his or her punch card ballot into the ESS PBC 2100, an electronic display shows that the voter has not voted for every race correctly, a paper trail is printed showing exactly the races in which a voter did not vote correctly. This system only shows problems that should be attended to and should be much easier to understand than a paper trail. In watching 500 voters casting ballots, I saw less than one in 10 people who, when they were told they had a problem with their ballot, were actually willing to take a new ballot and vote again. There appeared to be four reasons for this: many said they "knew" they had done the right thing and it must be all right, many felt pressed for time and wanted to leave, some were embarrassed, and some seemed overwhelmed. The task of reviewing the ballot after a person believes they have completed the task can be anticlimactic. One thinks they are done with voting but must go through it again.

The biggest difficulty in verifying a paper trail might be that some jurisdictions have over 100 races on which a voter makes selections. Remembering how one voted on each is difficult. Without a reference guide, it is likely that people who make decisions while marking their vote will forget how they marked the ballot that they are checking. Incorrectly calling fraud on a ballot machine will slow or stop others from getting to vote. In any case the difficulty of the cognitive task of checking a ballot afterwards will be much higher than any perceptual task that is required of the voter while they are marking their ballots [4].

The most popular description of VVPT places it behind glass to avoid losing the integrity of the secondary ballots. To the extent that the paper trail is not directly against the glass or the glass is not thick, offset parallax can make it hard to view. The apparent position of a finger against the glass changes with the viewing angle, making it difficult to accurately see which selection is being verified on a ballot with dozens of races.

Additional ergonomic considerations include lighting and readability issues that probably can be dealt with. For some vision-impaired people magnifying glasses and lighting will not make this process more accessible. A different verification mechanism such as audio verification will be required for them not to be disenfranchised.

~~The step of reviewing the voting machine after using it has been difficult for voters. In Cook County, IL there are videotapes or machines to train people in using the ESS PBC2100. But, in visiting some 60 precincts, I never saw anyone watch the video. Maybe people believe that they can figure it out once they are in the voting machine.~~

Ballot worker ergonomic problems exist in the logistics of keeping the receipts secure, counting them, verifying that they are the same number as the number in the DRE, sealing the receipts in a transport box, checking that these are prepared correctly for transport (hopefully under scrutiny of more than one person), and transferring them. Ergonomic problems complicating the process turn into logistical problems.

Logistics problems

Collecting and counting the ballots can be difficult. In Wilton, CT the ballot boxes had a gap through which ballots could have fallen. While watching a precinct close down in Cook County, IL in March 2002, we noticed a ballot on the floor. Transporting ballots has posed problems. Even in LA County, in the last use of punch cards in October 2003, a ballot box was lost for several hours. At 2:00 a.m. somebody had to go look for the hopefully-untampered-with missing box; finally it was found behind a door in the polling place. Ballots have been known to fall off the top of cars and have been left in trunks of cars during transportation. There were allegations in the 2000 election of replacing one set of punch cards in a balloting place with another. Typically a ballot worker transports ballots in a personal car to a collection station. In the fall of 2003 San Francisco election, some ballot workers transported paper ballots in shopping carts down the street. These methods of transportation raise serious concerns on the security of votes.

By the time election workers shut down a polling place, many of them have worked a 13-hour day. In LA County we recently saw a poll worker bully others into saying that they had completed checks that only one person actually did. We saw people closing a ballot box and covering the bar code "for security" which would make it unreadable by the machine as it traveled to the paper ballot collection center. These kinds of mistakes with physical things are always an issue for any system that a person is not familiar with or does not do on a regular basis. When people are doing something that is very important, nervousness as well as fatigue can make them less reliable.

Arranging to store and read the ballots later presents formidable problems. Punch card holes are designed to be the simplest of all possible separate paper records to read in an automated way. While it is easy to read one or ten cards, no one has made a reader that can read a million reliably. Being human readable will make it harder to accurately read the ballots with machines. Even when multiple people read ballots together the tally can change with multiple readings. How many hand counts are required to certify correctness? When the number is different between the paper and the electronic, which one should be trusted? Reading scraps of paper or receipts automatically has not been established as reliable. Machine reading Optical Character Reader (OCR) scan ballots, and punch cards, are more reliable than people reading paper [1]. The suggestion that some human -unreadable indicator, such as a barcode, be included on each receipt compromises the VVPT proponent's goal of the humans as the final judge.

The fact that the VVPT is not the primary election count will be known by the ballot workers likely leading them to be less careful with them than with primary ballots. Since receipts are curled thin paper, the process of counting them at the end of the day is harder than counting paper ballots. Not counting them at poll closing will make it harder to validate later.

Receipts printed with paper tape are hard to stack or organize. In Broward County, FL. for example, the ballots are counted in a warehouse where a loading dock door is commonly left open, letting wind blow in that could shift the paper. VVPTs will require workers to handle scraps of paper curled by the roll in the machine. The mechanical problems of handling the thin paper will be worse than with customary ballots. Interpreting the human readable words on them will be more complex than registering a hole or a filled-in oval.

All election machines today allow an administrator to change the time. Changing the time on the voting machine, ballot, or OCR could allow someone to maliciously revote a precinct. Knowing how many people voted for the day, a dishonest poll worker could fraudulently revote the election. The worker could produce a new fraudulent VVPT, putting into question which VVPT is correct. Luckily this would be a labor-intensive way to defraud an election.

Counting the paper trail presents other problems. Ballot workers arranging and moving cards around always seems precarious. Ballot workers who are running a punch card machine have procedures for dealing with misread cards. ~~Even when everyone is watching in an organized punch card reading operation, people worry about cards getting disorganized, out of order, and being removed or changed.~~

People are inured to paperwork. People who work with computers constantly have to approve long contracts in order to install software. Computer users are used to approving contracts without reading them completely; most just press the approve button. Conversely, for the non-computer users, the very idea of checking a computer might be confusing; how would they know what to trust? Now consider people who go through checkout lines in the grocery store. When I was a teenager I bought food for my family and had to be frugal. The cashier hand transcribed the

prices into the cash register; I would check my receipt and often find an error; when in my favor, I was refunded. Today cash registers that scan prices have reduced the problems of transcription of the prices and are more reliable. It is not so common to find errors any more and many people do not look at them. ATMs also give receipts. These receipts often have the balance of a bank account and can even indicate the account on them. Even with important financial information on them, these receipts are dropped on the floor or put in the trash can right next to the ATM where anyone could see them. Being surrounded by receipts that we do not pay attention to is an impediment on taking the voter verifiable paper trail seriously. It is unclear that voters will be more careful with a VVPT than they are in caring for their receipts at an ATM or in a grocery store.

Illiteracy can also be a problem when trying to verify a ballot. Variation in formats between the ballot and a verifiable paper receipt can confuse the voter. Voter information often helps people to familiarize themselves with the ballot they will see on the voting machine or to create a crib sheet to allow them to recognize where to mark the ballot. Unfortunately, the paper receipt is in a different format and would require a separate verification sheet to be tested by an illiterate person.

Less than fifty percent of eligible voters in this country vote. The increased logistical problems introduced by VVPT will not make people think voting is easier.

Software Security and Fraud in Voter Verification systems

A natural question about voting concerns possible fraud. David Orr, the county clerk of Cook County, Illinois, said he believes that only 1/3 of voters who are told they have an overvote will take a new ballot. Others have described seeing only one in 10 to one in 30 voters willing to revote when they learned from the ESS PBC2100 receipt that they had spoiled their ballot. Consider that a person decides to commit fraud against a machine with a VVPT. Software could be designed to take advantage of the way voters seldom verify or, even less commonly, act on the information on paper receipts. If the software is designed to print the paper trail incorrectly, some will not notice that there is a problem. Additionally, a line of people will likely be waiting to use the voting machines, and the ballot workers are confronted all day long by people who consider themselves to be disenfranchised by the process so any genuine concern may not be addressed. In the first 10 minutes of watching people vote in LA County, I saw a person give up and decide not to vote because of the line and another person outraged by the procedure for voting when he was not found as a registered voter. Voters want to be helped inside the ballot booth. Voters want to take more time than allowed. Are poll workers able to distinguish these kinds of concerns and concerns stemming from a genuinely defrauded machine?

To defraud a VVPT machine a hacker might make the machine skip a race or appear to have a bad printer, perhaps by making the printer look like it's printing while it's not actually printing anything readable, or simply by making an unreadable section on the receipt. If this unreadable section is carefully printed it will be unreadable in a later recount. This could be used to cover up software defrauding of the electronic vote or it could hide changes in the vote inside the computer.

The vote inside the machine and the vote on the paper could be made to agree or disagree with the electronic vote. In making the VVPT and electronic ballot disagree, the defrauder could be calling into question the quality of technology to create a reason to call for a new election.

In a more likely scenario, the defrauder will change the electronic ballot and depend on the statistics for reading and contesting bad receipts. If a person calls their receipt into question and asks for another receipt to be printed, the hacked VVPT machine can print the "duplicate" receipt correctly, fixing the mistake. By printing the correct receipt when a person asks for it a second time it could literally eliminate the changed ballot, thus eliminating the possibility of detection. Although the program has to give up this one changed ballot it won't happen often. If this follows the experience described above, only one in three to one in 30 people that see a problem will be willing to do something about it. A hacker changing one percent of votes could count on between one in 300 and one in 3,000 voters who see a problem wanting to do anything about it. Considering that up to 1/3 of the fraudulent receipts would be noticed, the hacker has to change one in 75 votes to get a one percent change in the outcome.

If everyone reads their paper receipt carefully, one out of 225 people might notice that their paper receipt is different from their vote. The natural thing is to have the printer reprint it. In a precinct voting 500 people, this will be

noticed twice during the day. When a voter complains and it comes to the attention of one of the several ballot workers that are running the election in a balloting area, it is likely to be caused by the ergonomic problems described above.

If it is because of the fraudulent VVPT, it will likely be the first time the ballot worker encounters this problem, which will make it harder to handle correctly than if they encountered it often. They are likely to encourage the voter to reprint the receipt that would, as outlined above, allow the voting machine to fix the internal count and print the correct receipt to cover up the fraud. If the ballot worker does enter the balloting area where the voter is, in order to verify the legitimacy of a problem with a VVPT, then they would have compromised the secrecy of that ballot. Even if they did enter the voters balloting booth to observe the strangely printed receipt, the natural reaction to an unreadable receipt would be to print a duplicate receipt themselves. Exchanging printers would also reprint the ballot, thereby eliminating the evidence. Shutting down the machine is the only thing that would preserve the fraud to view later, but this would disenfranchise other voters.

As described above, a printer can fake printing problems to cover up changes to the electronic and physical records. By doing this, it can introduce fraudulent tallies. Another way for software to defraud the paper trail is to print more receipts than voters. This could easily be seen as a mechanical problem at the time.

Mechanical problems with VVPT

Voting experts have been concerned about VVPT printers having problems. For instance, the connection between the printer and the machine can be broken, which would stop the printer functioning, and would keep people from being able to vote. If the printer were in the same unit as the voting machine, this problem might be lessened. Unfortunately, that would mean that the voting machine itself would have to be serviced to service the printer. Still it is a separate subsystem and would reduce voting machine reliability.

A printer can break mechanically—the motor, the levers or the solenoids can stop working, for instance. A plug replacement printer could be available, but the problem with the plug replacement printer is whether or not it can pick up where the other one left off. Has one ballot been lost in the meantime? Are we inserting a ballot accidentally when installing a printer? The person replacing a part can read the receipt because it is voter-verifiable. If they do change the paper, do they have access to the printout?

Additionally, the ink can be dried up or run out. If all printers are given new supplies preceding the election and tested, this should not be a problem. However, ensuring that such procedures include signoffs and checks of ink expiration dates is crucial to eliminating ink problems. If the printer is thermal (as many voting equipment printers are), the ink can't dry out. The problem with thermal devices is that heat applied to the paper before or after the election can destroy the printing. Thermal printing also fades with time and the paper tends to deteriorate more quickly.

These issues of printer failure might seem to be minor, but when considering LA County in which 2.2 million people vote in one day, the implications of mechanic problems that can occur are gigantic. In order to add any system that will not increase spoiled ballots, it must not add errors to the system. For the additional paper receipt to complicate the voter experience it must not misprint, jam, run out of paper or ink, malfunction, break, or lose its connection in a way that compromises the secrecy, integrity or accuracy of the vote.

To not lose votes, the printers must be shown to be able to print without failure during a voting election. Each printer must be able to print a typical precinct ballot every election for its planned lifetime. The number of voters in a precinct would not likely be more 200 voters-per-machine-per-election. General and special elections typically occur not more than 5 times a year. If the printer is to be used for 10 years a calculation of 15 years of life gives that it should be able to print 15,000 ballots without breaking.

The chance of breaking as opposed to wearing out is different; no machine should break down the day of election in a way that could lose a vote. For LA County, printers would have to have a reliability test that would ensure that they have a mean time between failures that is much larger than 2.2 million.

Alternatives to VVPT

The possible means of improving the authenticity and reliability of software are many. First, better methods for better software development can easily be applied to voting. Modular architecture that separates the different parts of the machine and makes it possible for them to be tracked separately is a good approach. Encrypted votes could improve the validity of the system. Allowing everyone to view the computer program as "open source" is a fashionable approach to ensuring that simple problems in it are not evident.

The "votometer," is a separate system that allows the voter to observe the vote without changing the software. To the extent that a votometer is written by a separate set of people that have no communication with each other, they cannot be in conspiracy to defraud votes. This separate verifying computer can also present the data in exactly the same format as the voting machine. This allows people to compare their votes with a record of those votes in the same format. It can be enhanced by special optics that overlay the two images of the two different displays. Such a votometer system can easily be verified and work across disabilities. The most exciting improvement of votometer over verified paper trails is that reading it is easy, doing it is easy, and establishing its separateness is easy. By solving all of these problems the votometer can literally eliminate the problems of setup and teardown. It can recognize the problems of voting, and establish authentic and separate verifications of the ballot.

Another verification approach is Voter Verified Audio Transcripts (VVAT), which speaks the names of the selections into earphones as selections are made. One advantage of this system is that receiving feedback while a person is making selections is easier to verify than a ballot later. Also, the tape that it produces is easy to count and has better integrity than receipts in a ballot box. Such a system can be implemented with the audio hardware available in today's DRE voting machines.

In the future, many other approaches for establishing verification and audit of votes are possible. Systems could have multiple pieces of software checking each other or multiple computers could verify each other's results. The most exciting of these is a voter's ability to compare his or her vote with the vote stored in the database of the government before they leave the voting booth. This will, in fact, some day be possible. When this is possible not only will we have a qualified belief that the vote this person cast is the vote that is stored in the computer, but we will also have deep security and the knowledge that what occurs at the very front end of the computer in establishing voter intentions is carried through, not only from the registration and authentication, marking the ballot, recording the ballot, storing the ballot, but also to recording the ballot in the election as it is being counted.

We can begin by verifying the votes on parallel machines. Parallel voting consists of pulling a voting machine out of service at random and assigning it to a phantom precinct. By controlling the votes that are cast and checking the results it collects, the machine can show that it recorded them as they were cast, ruling out an extra computer program, a "Trojan horse", "Easter eggs" or other fraud. The voting machine is then used in a real election as a test of its ability to count votes correctly on the day of election thereby establishing the quality of the machines.

Conclusions

This paper shows there are many different ways of disenfranchising a person using a voter-verified paper trail. First, people can be disenfranchised in all the normal ways. They can have registration problems; they can have valid design problems, polling place problems, etc. Second, the paper trail can be lost, stolen, or added to. Third, the equipment can be designed or accidentally set up so it doesn't work, or it slowly changes itself. Finally, intentional fraud can be widespread and created in software in such a way that it can be hidden from the voter and from the ballot worker on the day of election and not be remedied later. The final problem is that counting paper cannot be done at the accuracy level that electronic counting can be done. In this way, even if everything is performed correctly, the difficulty of counting the paper electronically will make it impossible to compare electronic outputs with the paper outputs in a way that can determine whether an accurate count has been achieved.

The Voter-Verified Paper Trail discussion has diverted attention from the main sources of lost votes in past elections. The majority of votes are lost because of problems of registration databases, ballot design, and polling place operations. The force of this discussion is even diverting voting technology development away from improving voting computer architecture. The Voter-Verified Paper Trail has blocked us from establishing standards for improving voting equipment.

Furthermore, VVPT complicates two of the top three problems that have compromised more than one percent of American votes in 2000: equipment problems and polling place operations. It complicates the setup, teardown, and operations of the ballot place. It complicates polling place procedures during the vote. It gives extra and difficult tasks for a person to do and increases the problems with the user experience and the user interface. It also increases the length of time of voting, which makes it, with more steps, easier to make mistakes.

The goal of Voter-Verified Paper Trail—that of establishing a second set of eyes to look at the intentions of a voter—is a worthy one. In fact, ballot design and voting have always been improved by more people looking at the process. In every case improvements in voting have occurred when one person cannot make a decision that changes the vote of another. The idea of establishing a way of doing that is valuable.

We call for improved research in voting technology and for heightened concern over spending large amounts of money on a short-term solution to software hacking problems that have not yet surfaced in elections. Instead, let us focus on verifying the votes in many ways and improving the quality of the whole system.

References;

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Johnson County Election Office



Brian D. Newby
Election Commissioner

TESTIMONY BEFORE HOUSE GOVERNMENTAL ORGANIZATION AND ELECTIONS COMMITTEE

Tuesday, February 15, 2005

Thank you for the opportunity to speak regarding House Bill 2254. As the Election Commissioner for the largest county in the State of Kansas and the county that has invested the most in electronic touch-screen voting equipment, I fully support the desire to provide assurance to all voters that their votes are properly recorded.

I am actually new to this role, having been appointed at the beginning of this year to replace Connie Schmidt, who retired after nine years of service to Johnson County and the State of Kansas. I'm sure that if Connie were still in this role, she, like me, would strongly support any measure that maximizes the voting experience.

The voting experience, as I see it, is somewhat of an understood contract between citizens and the government. Components of the voting experience are interdependent and include expectations around convenience of registration, convenience of voting, assurance of accurate results, assurance of timely results, communications of results and other voter information, and assurance that taxpayer dollars are neither overspent nor underutilized to provide for these components.

We're in election mode right now, preparing for the spring primary and general elections, so from a resource standpoint, it may be difficult to do this immediately, but I offer and would enjoy working with this committee to fully evaluate the continuum of the voting experience and consider reasonable benchmarks in all areas that counties in Kansas should target. Frankly, since coming to the election office, I have put a great

deal of thought into this already and our team will be doing just this type of exercise immediately after the spring elections.

It is this bigger picture that I ask the committee to consider because while I believe HB 2254 has strengths, it also includes a component that might be intended to improve the voter experience but, in fact, likely will have an unintended consequence of diminishing other factors associated with that experience.

In particular, the voting machines deployed in Johnson County procedurally allow voters to review their votes and modify them if necessary before casting their ballot. This is done with an electronic summary of their ballot, much the way we review an order placed with Amazon.com before hitting, "Place my order."

A paper printout of this step would slow the voting process and would not provide any more certification that a vote has been cast. The receipt may create a perception that something happened, like an ATM receipt, but in reality, votes are no more likely to be cast using a receipt.

Instead, the receipts would create a need for purchasing more machines to have at polling locations to accommodate the increase in voting time and the longer lines that would result from this increased voting time.

Additional supply costs will be necessary for the paper, while workers will have to shut the machines down frequently to change the paper or troubleshoot paper jams. Many of us have stood in line at a grocery store while the checker laboriously changed the paper. It's already hard for us to recruit the 1,200 poll workers we need for elections. The poll workers often are senior citizens. Many are computer savvy, but others are not, and the added stress of dealing with paper receipts in return for long hours and low pay on election day could cause many to retire as poll workers.

There is also a fraud component that is introduced with paper receipts. We go to great lengths to protect the integrity of our voting process. We have an exhaustive checklist

for each of our 1300 machines before sending them out and again when setting them up. If we ever have concerns that a machine is not performing on election day, we do not use the machine. Receipts introduce a human element where someone could claim a machine is not recording a vote properly in order to drive a result where machines are not used, thus potentially impacting an election or nullifying votes that have been cast on a machine that is claimed to be defective in the middle of election day.

In addition, our machines do not have this receipt capability today. There will be an added expense to the county, on top of the \$4 million already spent, to retrofit existing machines. Given the operational issues, and budget impact of modifying equipment and purchasing more equipment, we likely will need to re-evaluate the decision to use electronic machines at all. They were deployed to improve the voter experience, reduce reliance on paper ballots, improve the speed of results, improve reliability, and reduce overall costs.

But a move to receipts is a move back to the future. Receipts are a different form of paper ballots. Rather than use electronic machines with paper ballots, we would seriously need to consider stranding the \$4 million investment of taxpayer dollars in the system and return to the paper ballots we used before buying the electronic machines.

Aside from paper receipts, the intention of HB 2254 is very sound and can be accomplished. Without paper, voters have the ability to review and correct their vote before casting the vote when using our machines. Our machines have the ability to print off ballots—without identifying the user—that have been placed on the machine as an audit trail.

The machines we utilize have made a great contribution to the overall voter experience. While counties in other parts of the country experienced long lines and delayed or inaccurate results, we were very efficient and, in fact, completed our results reporting by 9:30 p.m. on election night last November. We are proud of the work we have done to improve the voter experience, in large part, by utilizing electronic voting equipment.

We are committed to dissecting the individual interdependent components of the voter experience and working with legislators to achieve a shared vision of the ideal voter experience. I ask today that the committee consider looking at all of these variables when making specific decisions about specific components. And, directly, I ask that HB 2254 not be approved as written and, instead, be removed of the requirement for a voter paper record that is reviewed at the election booth.

I appreciate the opportunity to speak with you regarding HB 2254 and am available for any questions related to my testimony.

Thank you.

Brian D. Newby

February 16, 2005

Governmental Organization & Elections Committee
Jim Morrison – Chair

RE: House Bill 2254
Butler County, Testimonial

Dear Chairman and Members of the Governmental Organization & Elections Committee:

The purpose of this of this testimonial is to present Butler County's objections to HB 2254, in its current form. Butler County currently uses Micro Vote Model MV 464 DRE electronic voting machines. These were purchased in 1998 and 2002. This bill would render them useless. We currently have 150 of these machines being used in 47 precincts. This represents a total investment of about \$700,000 for the machines with the supporting equipment.

These machines have proven to be very dependable and easy to repair in the field, when the occasional problem does occur. Voter acceptance has been excellent, and while they meet most of the requirements in HB 2254, they do not meet all of the new HAVA handicap requirements. Our machines do, in fact, produce two paper audits of every vote cast on the machine. They do not produce a paper receipt available to the voter showing how they voted. The voters do have the ability to review their ballot, the votes they have selected, and they may change any of those prior to the final casting of their ballot.

I understand the purpose of this bill is to bring us in compliance with the HAVA requirements. This is not so much my concern, as the time requirements in the bill to phase in these changes. These are relative new requirements for voting machines and there are few, if any, existing machines available that meet all of the requirements. Manufacturers are scrambling to come up with patches to make their machines HAVA compliant in time for the 2006 elections. If Kansas is forced into buying these first attempts at complying, we will be locked into using early, possibly patched together, equipment. These machines may not be very voter friendly or as dependable as the second-generation, fully engineered machines that will soon follow.

The Secretary of State (SOS) is working as fast as possible to specify, review, and bid handicap accessible machines and to have at least one of these available at each poll site in Kansas for the 2006 elections. The committee working on this is made up of the Secretary of State staff plus several county election officers. I have the privilege of serving on that committee and can tell you we are taking the task very seriously. I ask you to give us the time to make wise, informed choices for our state, rather than rushing to meet a compressed time schedule that could lock us into several years of using less than optimal equipment.

The last point to consider is how to finance these changes. Changing out all of our equipment at once will put the Counties in a financial bind. Most Counties are still trying to recover from the recent unexpected loss of demand transfers. This bill could result in expenditures of \$800,000 or more for Butler County. This is an unplanned expense that will result in increased local taxes being levied.

Butler County wishes to thank you for allowing us the opportunity to share our views with you and again ask for your support in delaying or amending House Bill 2254.

Ronald Roberts
Butler County Clerk & Election Officer

House Gov. Org. & Elections
Date: 2-15-05
Attachment # 4



Topeka Independent Living Resource Center

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501 SW Jackson Street • Suite 100 • Topeka, KS 66603-3300

Testimony on HB 2254 Before the House Committee on Governmental Organization and
Elections
February 15, 2005

Chairman Vickrey and members of the committee, thank you for the opportunity to appear before you today. My name is Kevin Siek and I am a disability rights advocate for the Topeka Independent Living Resource Center. Our agency is a civil and human rights organization with a mission to advocate for justice, equality and essential services for all people with disabilities.

I am here today to voice our opposition to HB 2254, which will require an accessible voter verified paper audit trail or VVPAT for all direct recording electronic voting systems or DRE's, that can be used for a recount of the votes in an election. VVPAT's have been proposed as a way to address legitimate concerns regarding the reliability and security of DRE systems. While we share these concerns we must oppose this legislation because it will disenfranchise voters with visual impairments.

In 2003 the U.S. Department of Justice (DOJ) issued an opinion on DRE's that "produce a contemporaneous paper record, which is not accessible to sight-impaired voters." In that opinion DOJ said that such a paper record would be acceptable "so long as the voting system provides a similar opportunity for sight-impaired voters to verify their ballots before they are cast."

However, in instances where the paper record "would also be used for auditing purposes in the event of a recount or election challenge" it would likely need to be accessible to sight-impaired voters because it would be used to "count votes" as well as "to maintain and produce any audit trail information."

While some existing equipment claims to offer an accessible VVPAT, these paper ballots are not truly accessible to visually impaired voters because the voter cannot read them independently. Use of paper ballots from these machines to do a recount would, in our opinion, be a violation of HAVA and the Americans with Disabilities Act.

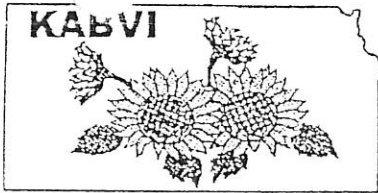
House Gov. Org. & Elections
Date: 2-15-05
Attachment # ~~4~~ 5

Advocacy and services provided by and for people with disabilities.

Rather than implement legislation that will likely discriminate against voters with visual impairments we recommend the following suggestions to address the potential for voter fraud:

- Encourage the Federal government to promulgate clear technical standards for the accessibility and auditability of DRE equipment.
- Require vendors to provide a copy of the source code that operates the equipment to state election officials who can then audit its installation.
- Subject all DRE's to "red team" testing where independent professionals, in a time-limited simulation, try to subvert a mock election. This is the best way to identify deficiencies in the system and devise solutions to correct them.
- Be prepared to offer paper ballots at all polling sites for voters who choose not to use the DRE equipment.

Thank you for the opportunity to testify on HB 2254. I would be happy to respond to any questions you may have.



Kansas Association for the Blind and Visually Impaired, Inc.

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February 15, 2005

TO: House Governmental Organization and Elections

FROM: Michael Byington, President, Kansas Association for the Blind and Visually Impaired

SUBJECT: Opposition to House Bill 2254\

The Kansas Association for the Blind and Visually Impaired (KABVI) is the State affiliated organization to the American Council of the Blind (ACB). ACB was the lead organization at the federal level in successfully advocating that the federal Help America Vote Act (HAVA) would provide for voting access standards to insure that people who are blind, visually impaired, or who for other reasons, often disability related, can not read a printed paper ballot, are guaranteed by law the opportunity to vote privately, independently, and verifiably. I had the pleasure of traveling to Washington, D.C. several times during the Congressional deliberations concerning HAVA to work with Congress in fostering this intent.

House Bill 2254 not only requires hard copy paper ballot production by digital recording voting equipment, but also seems to make such paper ballots the ultimate arbiter if there is a challenge or problem with the count. This provision seems to have the intent of undoing HAVA. The technology to make paper ballots accessible to all disability groups simply does not exist. Even if it did, the cost of doing so would be prohibitive. Even if, for example, all persons who are unable to read printed materials could read Braille, a circumstance, which is most decidedly not the case, the cost and technical challenges of printing Braille ballots on demand for the scrutiny of voters who need them, is simply unworkable. If checking what is written on a piece of paper becomes the final and binding verification method, true voting access to those disabled citizens who are unable to use printed paper is negated. Definitive case law has not yet been established on this issue, and I hope it does not have to be. If it does have to be established, however, I strongly suspect that provisions within House Bill 2254 would be found by the courts to be inconsistent with federal law.

If the intent of 2254 is to suggest that tangible paper is somehow a more accurate way to count votes if, there is a challenge, than electronic tallies.

House Gov. Org. & Elections
Date: 02-15-05
Attachment # 6

Again, this is flawed logic. I would ask Committee members to think of their own computers. Consider how often you type something into your word processor or spreadsheet only to find that the computer has put something completely different into the system. Compare the frequency of this occurrence and compare it with the frequency that you have to change the ink tanks or toner cartridge in your printer, or your printer jams, or runs out of paper, etc. Printers have moving parts. They have a lot more mechanical things to go wrong. To count on a printer as the final arbiter of a vote count is a step backwards in accuracy and assurance of a credible vote count. Printer technology simply goes hand in hand with pregnant chads, hanging chads, dimpled ballots, and butterfly ballot line drawing. Please do not subject us to these nightmares in Kansas.



Disability Rights Center of Kansas

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Testimony to the House Governmental Organization and Elections Committee

February 15, 2005

Chairman Vickrey and members of the committee, my name is Michael Donnelly. I am the Director of Policy and Outreach for the Disability Rights Center of Kansas, formerly Kansas Advocacy and Protective Services (KAPS). The Disability Rights Center of Kansas (DRC) is a public interest legal advocacy agency, part of a national network of federally mandated and funded organizations legally empowered to advocate for Kansans with disabilities. As such, DRC is the officially designated protection and advocacy system for Kansans with disabilities. DRC is a private, 501(c)(3) nonprofit corporation, independent of both state government and disability service providers. As the federally designated protection and advocacy system for Kansans with disabilities our task is to advocate for the legal and civil rights of persons with disabilities as promised by federal, state and local laws. Those rights are promised in laws like the Americans with disabilities Act of 1990 (ADA), the Help America Vote Act (HAVA), and others. In fact, DRC is the recipient of the Protection and Advocacy for Voting Access program for Kansas.

House Bill 2254 has provided us with the opportunity to discuss a topic of great importance to the disability community – whether or not Kansas should require what has become known as a Voter Verifiable Paper Audit Trail (VVPAT). Generally speaking, those who have expressed a need for the VVPAT have focused on the potential flaws in the electronic voting systems and particularly the security of the operating systems. A second reason cited for VVPAT is the confidence of the voter that their vote will be counted. Both concerns are valid and both concerns should be addressed.

The disability community has those same concerns – security and confidence in the vote. However, the disability community also has concerns about the use of VVPAT and how that might violate the rights promised persons with disabilities under HAVA, the ADA and applicable state election laws. Core to the promises of HAVA and the ADA in particular is the promise that each person, regardless of ability or disability will be provided the opportunity to cast an unassisted independent and private ballot. Each state, including Kansas has been awarded significant federal dollars to implement those promises by ensuring that every polling place includes a fully accessible electronic voting system in time for the general election in 2006. The EAC (Election Assistance Commission) has certified systems for that purpose and Secretary of State Thornburgh is doing the same.

HB 2254 if enacted would provide a VVPAT that violates the promises made in the ADA and HAVA particularly. These unintended consequences for the disability community manifest themselves in several ways:

1. HB 2254 requires that “(b) (1) No electronic or computerized voting machine shall be approved for use in this state unless such electronic voting machine provides for a paper record of each electronically generated ballot that can be:
 - a. (A) Reviewed and corrected by the voter at the time the vote is cast.”

A printed paper ballot intended to be used as the final arbiter in an election (e.g., as the only means by which a recount is completed) and that is intended to be “reviewed and corrected by the voter” must be made accessible to every voter, including voters who can not read printed materials due to disability, e.g., cognitive disability, visual impairment, etc. Many voters would again require assistance to vote. By requiring the printed ballot to carryout the audit function, many voters would loose their right to cast an unassisted, independent and private ballot.

2. HB 2254 requires that “(2) (A) On and after January 1, 2006, no direct recording voting system shall be used in this state unless such voting system has an accessible voter verified paper audit trail.”

The Bill goes on to define the “accessible voter verified paper audit trail” as “a component of a direct recording electronic voting system that prints a contemporaneous paper record copy of each electronic ballot and allows each voter to confirm such voter’s selections before the voter casts such voters ballot.” The use of the term accessible in this way is unfortunate in that it confuses access of the voter to the piece of paper with access of the voter to the contents of the document. Many voters with disabilities would not have access to the contents of the document and would therefore loose their right to an unassisted, independent and private ballot.

4. A third unintended consequence is how VVPAT would likely inhibit curbside voting. The majority of electronic voting systems being deployed today are both reliable and portable. Many are lightweight, laptop like systems that can be easily transported to a voter who is unable because of illness or disability to go in to their polling location. The voter who uses the electronic balloting option in their vehicle can select who or what they wish to vote for, electronically audit their ballot, cast their ballot, and then be on their way. If you require a VVPAT that option becomes very difficult. The voter must either vote by paper ballot which may not be accessible to them (being forced to give up their right to an unassisted, independent ballot) or the election workers will be required to go in and out of the polling place numerous times to ensure that the voters ballot is cast correctly. That places a heavy burden on both the voter and the election workers.

Other issues affecting the decision to require VVPAT include the following.

1. The VVPAT technology has not yet been developed to the extent necessary to accomplish the goal. The various DRE systems provide different VVPAT. Some are printed on 2 inch wide paper tape and others are on letter sized paper (8.5” X 11”). Some use a basic inkjet printer while others use less clear printer options. Some actually print a paper ballot and still others print an unreadable print configuration using bar code technology to

record the voter's ballot. The bottom line is that without some kind of consistent standard the VVPAT technology will not be developed that gives us the clear audit trail that is envisioned by the proponents of VVPAT.

2. Printers, like all other electronic equipment malfunction. In fact, printers tend to malfunction more often than other equipment. Paper mis-feeds, dry ink cartridges, bad cables, etc. disrupt our day quite often. VVPAT requires that each polling location have election workers capable of addressing all of the problems that come with new technology, and who are capable of fixing the problems quickly. Are the election workers ready for that responsibility?
3. Electronic voting systems, especially touch screen systems are widely mis-understood and VVPAT may be un-necessary. The accessible electronic voting systems being employed today provide two different auditing capabilities, one audit for the voter's individual ballot and one as a paper verification of the votes cast on the individual machine.

First, HAVA requires that the systems deployed provide an audit capability for the individual voter to ensure that their votes are being cast as intended. The system's audit function prevents over and under voting. It is generally available both visually and audibly on the accessible machines. And, it provides the voter the ability to modify their vote if they either change their mind, or find that the machine has recorded the vote incorrectly.

Secondly, each machine does and should provide a printout that details the votes cast on that machine. It does not necessarily detail which voter voted for whom or what, but it does provide a compilation report on the votes cast.

4. VVPAT is an expensive proposition. Kansas has four counties using electronic voting systems that would not comply with HB 2254. Many, if not most of those voting systems are too old to be retrofitted with VVPAT technology. For those systems that could be retrofitted the cost is prohibitive. Even with the HAVA funds granted to the state for accessible electronic voting systems, the cost may outweigh the benefit.

Finally, DRC cautions the Committee on prescribing a solution that harms more than it heals. The EAC is reviewing standards for security and safety of electronic voting systems and consequently, our votes. The discussion concerning VVPAT is an important one and one that deserves in-depth study. DRC urges this Legislature to take the time necessary to implement the best voting standards possible for ALL Kansas voters. VVPAT technology is not yet able to meet the accessibility requirements of voters with disabilities and as such is not yet ready for deployment in Kansas. Kansas voters who have disabilities are concerned about the security of the voting systems and also want to ensure that their votes count. They also want to vote unassisted, independently and privately as promised.

**KAREN K. HARTENBOWER
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February 15, 2005

Chairman Jene Vickery and Committee:

Today I am writing in opposition of SB 2254 a bill that includes a paper trail audit for voting equipment. I have kept up on discussions on paper trails on voting equipment. Let me point out some of the flaws that happened in the 2004 Election in other states. When you have a large number of voters the spool of paper must be replaced several times. When the equipment runs out of paper the voting shuts down causing a backlog of voters. When the paper jams again this stops voting on the equipment until it is fixed, which happened with some of the enclosed spools. Some equipment gives the voter a receipt of how they voted. When people did not remove their receipt then the next voter saw how they voted. Where is the secrecy for that voter? In one state they had a ballot that was legal size front and back on 2 pages. To print out the receipt for each voter took up a lot of time causing long lines of voters. The paper trail disenfranchises the visually impaired voter who cannot read the it anyway. When asked after voting most of the voters stated they did not even look at the paper audit. Some of this information I gathered from our IACREOT (International Association of Clerks, Election Officials and Treasurers) meeting in January where we heard from some Election Officials discussing the problems they had in 2004.

In Lyon County we have already purchased 33 Diebold Touchscreens. The cost of the Touchscreens is \$103,950 plus additional cost for manager cards, voter cards, etc. I have been told our equipment cannot be retro fitted with a paper trail attachment. Lyon County cannot afford to trash this equipment and replace them with newer ones.

Please do not include paper audit trails in HB2254. You will be causing additional expense for the State and Counties as well as causing problems for all State Election Officials as well as the voters.

Karen K. Hartenbower
Lyon County Clerk/Election Official

House Gov. Org. & Election
Date: 2-15-05
Attachment # 8

Written Testimony of Connie Schmidt, CERA
Retired Election Commissioner, Johnson County, Kansas

Governmental Organization and Elections Committee
February 15, 2005

House Bill 2254

Thank you for the opportunity to provide written testimony regarding House Bill 2254. I regret that I am not able to provide oral testimony, as I am attending a meeting of the National Task Force on Election Reform this week.

As background information, I recently retired as Election Commissioner for Johnson County, Kansas, having served in that position since September 1995. Johnson County became a voting machine county in 1968 (lever machines) and transitioned to be one of the first DRE (direct record electronic) voting machine counties in the country in 1987. These machines were replaced with touch screen DRE machines in early 2002. My testimony on House Bill 2254, mandating a voter verified paper trail for voting machines, is based on my experience with managing a total of 28 elections utilizing this equipment, (including three Presidential elections) along with my experience as a member of the national Voting Systems Standards Board and the National Task Force on Election Reform sponsored by The Election Center, the largest professional association of election officials in the nation.

Let me begin by noting that the voters in Johnson County have cast their ballots on voting machines without a voter verified paper trail for over 34 years. As you know, the topic of a voter verified paper trail is being discussed in many states nationwide. My comments today are forwarded to provide the Committee with access to resource information on this topic. Some of the information is provided as an attachment to this testimony, as a web page link noted within this document with a printed copy made available by the staff of the Secretary of State's Office. I strongly urge the Committee to take action only after studying this material.

- Attached to this document (Attachment 1) is a cost impact analysis, based on my experience in administering elections in Johnson County.
- In mid-January 2005, the National Task Force on Election Reform recommended that all voting systems have the ability to verify that the voters' ballots are recorded and tabulated in accordance with the voters' intent. To accomplish this, we have called on the National Institute of Standards and Technology (NIST) to develop standards for scientifically sound, independently verifiable audit trails for DRE systems. A preliminary draft of one section of the report soon to be issued by the National Task Force on Election Reform is attached. (Attachment 2)
- "The League of Women Voter, U.S. supports an individual audit capacity for the purposes of recounts and authentication of elections for all voting systems. The LWVUS does not believe that an individual paper confirmation for each ballot is required to achieve these goals. An individual paper confirmation for each ballot would undermine disability access requirements, raise costs and slow down the purchase or lease of machines that might be used to replace machines that don't work. The experts that we have consulted say that there are many safeguards other than an individual paper ballot confirmation that can protect the sanctity of the ballot and that other issues are far more important in safeguarding our election systems".

House Gov. Org. & Elections
Date: 2-15-05
Attachment # 9

The LWVUS interpretation of the position on 'Citizen's Right to Vote' will now read: "In order to ensure integrity and voter confidence in elections, the LWVUS supports the implementation of voting systems and procedures that are secure, accurate, recountable, and accessible."

- A report by the American Association for the Advancement of Science. Supported by a grant from the National Science Foundation this report, "Making Each Vote Count: a Research Agenda for Electronic Voting," was the product of a two day workshop in Washington, D.C., last September. Its participants were among the nation's leading students of and practitioners in the field of elections and elections technology.
<http://www.aaas.org/spp/sfrrl/projects/evoting/participants.shtml>
<http://www.aaas.org/spp/sfrrl/evoting/report2.pdf>
- The CalTech/MIT working paper, "Security Vulnerabilities and Problems with VVPT," published in April, 2004. This document directly addresses the Voting Technology Project's assessment of "voter verifiable paper trail" technology. Again, it is not favorable.
http://www.vote.caltech.edu/Reports/vtp_wp13.pdf
- The opinion of Judge Joseph P. Manck, of the Circuit Court for Anne Arundel County, Maryland; September 1, 2004. Judge Manck notes that the three "expert" witnesses, one for the defense and two for the plaintiffs, all "agreed the use of paper ballots is the least accurate of all systems and lends itself to the most chicanery." He goes on to note that, "on the other hand, the experts seem to agree, if untampered, the (DRE)-type voting machines are the most accurate in recording and counting votes." (Attachment 3)



SchadeOpinion.pdf

- "Paper v. Electronic Voting Records – An Assessment," by Dr. Michael Shamos, School of Computer Science, Carnegie Mellon University, April, 2004. Dr. Shamos' credentials on this subject are well established among his peers. His credibility is also addressed by Judge Manck.
<http://euro.ecom.cmu.edu/people/faculty/mshamos/paper.htm>
- Finally, Dr. Shamos testimony before the Maryland General Assembly House Ways & Means Committee on December 7, 2004.
<http://euro.ecom.cmu.edu/people/faculty/mshamos/WaysMeansTestimony.htm>

With regard to this last item, I would strongly recommend that you direct your staff to contact the staff at the Maryland General Assembly for an exchange of information and ideas regarding standards for increasing "verifiability" of DRE voting systems.

Please allow me to also address the following concerns regarding the requirement for a Voter Verifiable Paper Trail (VVPT):

1. *Secrecy*. Most of the VVPTs on the market, and the one designed for the Diebold AccuVote TSx voting unit used in Johnson County, Kansas, are maintained on a spool in the order that the votes were cast. Accordingly, voter secrecy could be compromised if someone has access to the spool and knows the order in which voters voted.
2. *Blind and Visually Impaired Voters*. For the first time, blind and visually impaired voters have the ability to vote in secret and independently. Introducing a VVPT will cause these voters to have to have someone read the paper ballot to the voter to confirm that the paper record matches the

candidates for whom the voter voted. Proponents of the VVPT will tell you that the blind or visually impaired voter can simply chose to ignore the paper record, but it is questionable whether this is acceptable under HAVA which requires voting in a private and independent manner.

3. *Longer Lines.* Estimates from studies done in polling places where VVPT has been used indicate that it can take voters longer to vote if they check the VVPT. This will create longer lines in the polling places as well as a need to add additional voting units (which will in turn increase the cost).
4. *Printer Problems.* If a printer jam or other problem occurs, not only will voting have to be halted while it is repaired but also the voter's choices will be revealed while the problem is being fixed.
5. *Cost.* VVPT is expensive because it will require all voting units to have to be retrofitted and re-certified. In addition, it will require the retraining of all election judges, re-drafting of all documentation, an increase in delivery cost, retrofitting the delivery carts, and purchasing security cases for the VVPT spools.

Proponents of VVPT state that VVPT will increase voter confidence, eliminate the possibility of fraud caused by malicious software code, and establish the means for a meaningful recount. This raises the question of how effective is VVPT, notwithstanding the above noted concerns, in addressing the aims of its proponents.

1. *Does VVPT increase voter confidence?*

Clearly there are certain interest groups that feel very strongly that a VVPT is a necessary solution without which there can be no confidence in our elections. In fact, our experience has been that voters overwhelmingly approve of the voting system.

2. *Does VVPT effectively eliminate fraud from malicious software code?*

- a. During a study of the use of VVPT at a polling place in Nevada in November 2004, it was discovered that only 6% of the voters bothered to look at the paper record. Clearly this low level of voter involvement calls into question whether this is a meaningful "check" on the voting system. At best, the VVPT is serving as a deterrent against the possibility of fraud. But this raises the question of whether there are more efficient means of deterring possible fraud.

3. *Does VVPT provide a more meaningful recount?*

While a recount can and has been conducted on the current voting system without a VVPT, the VVPT can provide an additional methodology for checking the election results. However, as already discussed, it is an extremely inaccurate method of checking the election results due to the fact that the vast majority of voters are not verifying the paper records and due to the unreliability of human recounts.

In summary, VVPT is an expensive system and does not efficiently achieve the goals that its proponents would like to accomplish. In addition, it introduces a new set of problems and concerns for election administrators and represents a step backwards for the disability community.

I urge this committee to assess.....with fairness, openness and integrity.... the full record before you before making your own recommendations on the future of voting technology in Kansas.

**If I can provide additional information or testimony, please feel free to call upon me at any time.
Cell phone: (913-206-7395) or email: scjschmidt@aol.com**

Potential first year cost impact of adding printers to direct record electronic (DRE) voting machines.

The assumed minutes per voter with printers assumes each voter would spend additional time waiting for the paper receipt to print and reviewing it in addition to actually voting their ballot. There are now, at least, observations that indicate most voters do not even look at the paper record. Nevertheless, voting time would be extended for all voters if only due to the time it takes for the record to print.

Voters	Minutes per voter to Vote	Total Minutes to vote	Total Hours to Vote	Machines required to vote in 13 hours	Cost per machine	Total Machine Cost	Set-up and testing	Delivery and Pick up	Precinct Machine assistants @ 1 to 2 Ratio	Polling places @ 10 Machines/ Poll - Cost of Precinct Officials	Printers	1st Year Cost
Without VVPB												
200,000	5	1,000,000	16,667	1,282	\$3,000	\$3,846,154	\$76,923	\$38,462	\$57,692	\$51,282	0	\$4,070,513
With VVPB*												
200,000	6.5	1,300,000	21,667	1,667	\$3,000	\$5,000,000	\$100,000	\$50,000	\$75,000	\$66,667	\$1,000,000	\$6,291,667
200,000	7	1,400,000	23,333	1,795	\$3,000	\$5,384,615	\$107,692	\$53,846	\$80,769	\$71,795	\$1,076,923	\$6,775,641
200,000	9	1,800,000	30,000	2,308	\$3,000	\$6,923,077	\$138,462	\$69,231	\$103,846	\$92,308	\$1,384,615	\$8,711,538

(@ \$600 ea.)**

		Average Elections/Yr										
		1 Small	\$30,769	\$15,385	\$23,077	\$20,513						
		1 Medium	\$40,615	\$20,308	\$30,462	\$27,077						
		1 Large	\$61,538	\$30,769	\$46,154	\$41,026						
Increased Cost of VVPB	1st Year Difference	6.5 min/vote	\$1,153,846	\$67,422	\$33,711	\$50,566	\$44,948	\$1,000,000	\$2,350,492	58%		
		7 min/vote	\$1,538,462	\$81,723	\$40,862	\$61,292	\$54,482	\$1,076,923	\$2,853,744	70%		
		9 min/vote	\$3,076,923	\$102,154	\$51,077	\$76,615	\$68,103	\$1,384,615	\$4,759,487	117%		

Increased costs of warehousing and maintenance are not included.

* VVPB cost impact will be significantly affected by how much extra time it takes for the paper record to print and for the voters to complete their ballot.

** Estimates from a variety of vendors have varied from \$500 to \$1,000 in added cost.

ELECTION CENTER NATIONAL TASK FORCE
ON ELECTION REFORM 2004

ELECTION ADMINISTRATION COMMITTEE RECOMMENDATIONS
ON VOTER VERIFIED PAPER AUDIT TRAILS

The Election Administration Committee will make recommendations on a number of issues including the logic and accuracy testing of voting equipment, the procurement of voting equipment, and early/absentee/satellite voting. The focus of this document though is the committee's feelings on the issue of voter verified paper audit trails (VVPAT) on DRE (Direct Recording Electronic) voting equipment. While a complete report will be included in the final report of the Election Center National Task Force on Election Reform, the committee felt it important to provide information as quickly as possible as states and federal agencies are discussing this important issue. As we began discussion on this issue, we recognized that some states have already made the decision to move to VVPAT. Other states are just beginning the discussion on this topic and the committee felt it was important to get this information distributed so state legislatures could take our recommendations into consideration when discussing this issue.

The committee was unanimous in stating that all voting systems need the ability for verification that the voters' ballots are recorded and tabulated in accordance with the voters' intent. Whether a paper-based or direct recording electronic voting system, tabulation is conducted electronically and verifiable, documented audit procedures are necessary on all voting systems to insure the integrity of ballot tabulation. For paper-based systems, this audit trail is created by the voter in the form of the marked ballot. For DRE systems, the voter creates an electronic ballot record that needs additional mechanisms to provide verifiability.

Election administrators currently rely on a combination of an internal audit conducted by the DRE, security procedures and testing to insure the integrity of their voting systems. While these mechanisms have worked well, we feel that confidence in their reliability would be enhanced through increased audit capacity by way of an independent, highly secure, electronic ballot record, not exclusively dependent on the reliability of or "trust" in one vendor's software. Current DRE audit trails have been challenged in, at least, two significant ways: 1) they provide no independent means of verification apart from the operating software provided by the vendor and 2) insufficient protections exist against accidental and irretrievable loss of ballot records.

The Committee makes the following recommendations:

1. National Institute of Standards and Technology (NIST) standards are needed for a scientifically sound, independently verifiable audit trail for DRE systems. NIST will bring a great deal of independent credibility to this process and standards from this organization will provide the election community with the framework necessary for comprehensive audit trails on all voting systems. The committee felt strongly that these standards should not be a federal mandate but should continue to be voluntary standards for states to adopt.
2. While states may adopt VVPAT, it was the consensus of the committee that a paper audit trail is less accessible, more costly, more burdensome to the voters, more complex for poll officials and less accurate than an electronic audit mechanism. We note that manual tabulation of paper ballots may not be an auditable tabulation process. There are no standards for judging the accuracy of hand counting ballots. Standards developed by NIST can provide future means by which independent verification on DREs can take place.
3. Mandating a paper audit trail would stifle innovation and establish a ceiling on the quality of

our verification tools. What is needed is not a ceiling but a floor and room for emerging technologies. Technology is advancing every day and a mandated paper audit trail would lock the vendor community in to that technology and slow development of new, possibly better, audit technology.

4. There are potential serious consequences of a VVPAT system. In addition to significant cost increases, these include lengthened voting times, jammed printers slowing the process and possibly exposing voters' votes, and undermining the Help America Vote Act (HAVA) mandate for blind/visually impaired voters to vote independently. Due to lengthened voting times, more voting devices may be needed which will increase even further the need for additional money. In addition, if states implement a VVPAT and additional resources are needed, those costs should not be passed along to counties.
5. Any paper record that is implemented in a state should be designated as an audit record and not be designated as the official ballot. The committee had serious concerns that a paper trail can be accurately counted. Also, paper ballots are more difficult to securely store than electronic records.
6. Any VVPAT system that is implemented should require retention of the paper ballot at the polling location and must preserve secrecy of the ballot. Allowing paper ballot receipts to leave the polling location could lead to voter fraud and vote buying.

It is the recommendation of the committee that voter verified paper audit trails are unnecessary and will create administrative problems that far outweigh any benefit that they bring. In fact, voters themselves have shown that they do not feel the need for a VVPAT. In exit surveys done in the first major election conducted using VVPAT in the State of Nevada, only 31% of the voters actually used the paper ballot to compare all of the races on their ballot. Without such verification, a VVPAT system cannot provide a scientifically reliable audit of voter intent.

We note that this document is a work in progress and subject to change. It will be included in the Election Center National Task Force on Election Reform final report and is subject to review and approval by the full task force. That final report of the task force will be completed in early March.

The members of this committee thank you for taking the time to consider our thoughts and welcome any questions or comments on our recommendations. Please do not hesitate to contact Dana Walch at (614) 466-6998 if you have any questions regarding this document.

Members:

Dana Walch, Co-Chair, Director of Legislative Affairs, Ohio Secretary of State
 Beverly Kaufman, Co-Chair, Harris County, Texas, Clerk
 Donald Blevins, Fayette County, Kentucky, Clerk
 Ron Cheney, Henrico County, Virginia, Electoral Board Chairman
 Bill Cowles, Orange County, Florida, Supervisor of Elections
 Pam Finlayson, Allen County, Indiana, Director of Elections
 George Gilbert, Guilford County, North Carolina, Director of Elections
 James Johnson, Shelby County, Tennessee, Elections Administrator
 Conny McCormack, Los Angeles County, California, Registrar-Recorder/County Clerk
 Gary Smith, Forsyth County, Georgia, Chairman, Board of Elections
 Christopher Thomas, Director of Elections, State of Michigan

LINDA SCHADE, et al

Plaintiffs

v.

MARYLAND STATE BOARD OF ELECTIONS
LINDA H. LAMONE (as Administrator of
Maryland's State Board of Elections)

Defendants

* IN THE
* CIRCUIT COURT
* FOR
* ANNE ARUNDEL COUNTY
* CASE NO. C-04-97297
*

* * *
MEMORANDUM OPINION

One of the most precious freedoms Americans enjoy is the right to vote. Equally of import is to have that vote counted. Plaintiffs suggest to the Court the use of the Diebold AccuVote TS Electronic Voting System cannot preserve this freedom. They question the security and reliability of this system in the upcoming November 2004 election. They advance theories that the State Board of Elections and its administrator were arbitrary and capricious in purchasing and certifying this electronic voting system. They postulate the system was purchased over objections of its own Procurement Review Committee and further, the State Board of Elections failed to decertify the machines as required by State and Federal law once independent experts commissioned by the State of Maryland confirmed serious security and vulnerability flaws in this system.

The State of Maryland, acknowledging there is, or could be, possible security risks with the machines, employed independent experts to help implement the reasonable and feasible suggestions made by all experts and have, in fact, considered and corrected many risk factors to ensure each vote is counted and the security and secrecy of the ballots remain intact.

Preliminarily, in 1996, Baltimore City implemented electronic voting, and in 2002, four counties in Maryland used the Diebold machines. The Primary of 2004 saw the use of the Diebold machines in every precinct in the State of Maryland, excepting Baltimore City.

It was not until April of 2004 that the Plaintiffs brought their original suit, subsequently amended, and some time thereafter requested this preliminary injunction.

The Court heard three full days of testimony from experts and lay witnesses. While not demeaning

witnesses who were called and qualified purportedly as experts, the Court was most impressed with the credentials of three who testified, one for the defense, two for the Plaintiffs. Those witnesses were Dr. Aviel Rubin, author of the Hopkins Report, Dr. Michael Wertheimer, who authored the RABA Report, and finally, Dr. Shamos.

These experts, highly credentialed and respected in their field, discussed their respective reports, recommendations and opinions, as well as the Science Application International Corporation ("SAIC") Report ordered by Governor Ehrlich in August 2003.

Needless to say, the Hopkins and RABA Reports found numerous security risks and vulnerability in these voting machines. Reports were forwarded to the State Board of Elections and, not surprisingly, the reasonable recommendations made by the reports have been, or will be, implemented prior to the November 2004 Election. For example, the reports mandated parallel monitoring, as well as secure lines when the machines interface to send the vote count over telephone lines to the central depository, protection of the machines prior to voting, during voting, and after voting, encryption of the voting information when sent over the land lines, changing of passwords and the use of Microsoft patch updates to ensure security.

Maryland Code, Election Law, §9-102, indicates the State Board of Elections

"may not certify a voting system unless the State Board determines that: (1) the voting system will:

- (i) protect the secrecy of the ballot;
- (ii) protect the security of the voting process;
- (iii) count and record all votes accurately ..."

The law goes on to discuss the considerations for certification. §9-103 discusses the reasons for decertification of voting systems, the most important of which is "if the voting system no longer meets one or more of the standards in §9-102(c)(1)(i-iii) of this subtitle."

The Plaintiffs recognize decertification is not an option, but requests the Court order parallel monitoring and, most importantly, to allow voters with little or no faith in the Diebold system to have an alternative paper ballot option.

While all three experts were of the highest quality and quite informative in their testimony, the Court finds Dr. Shamos, Defendants' expert, to be the true voice of reason and the most credible expert in this matter. Dr. Shamos's criticisms of Dr. Wertheimer's and Dr. Rubin's reports were simply the standards they employed in formulating their conclusions. He opined the Hopkins Report, co-authored by Dr. Rubin, used a "perfection" standard in order to arrive at the factors mandated in the Election Law, §9-102, and Dr. Wertheimer used a "military standard" to arrive at his conclusions.

Dr. Shamos, being familiar with Maryland law and its standards, indicated the State Board of Elections was more than reasonable and in compliance with Maryland standards in selecting the Diebold system and in their conclusions they could protect the secrecy of the ballot, the security of the voting process and the accurate counting of the ballots.

All experts agreed the use of paper ballots is the least accurate of all systems and lends itself to the most chicanery. On the other hand, the experts seem to agree, if untampered, the Diebold-type voting machines are the most accurate in recording and counting votes.

In addition, there is no question the secrecy of the ballot is clearly protected by machines such as these. This is especially true for the visually impaired. The blind voter, for the first time, can vote without the need of another looking over their shoulder and guiding them through the process. Through the use of specialized equipment, a blind voter can vote and maintain the secrecy of the vote as mandated by federal and state law.

The major contention of the Plaintiffs is the security of the voting process can be breached by hackers or others who wish to interfere with the voting process. All experts agree no system is perfect. All experts agree the paper ballot, as far back as the early 1800's, was insecure and could be manipulated very easily. The fear that unknown individuals can tamper with the machines before, or during, the election process, or after the votes have been tabulated and sent to the central depository, is, candidly, a very real fear. It is, however, one that can reasonably be protected against by implementing some of the more reasonable suggestions of the SAIC, Hopkins and RABA reports.

It should be noted after these reports were published, the State of Maryland commissioned their own independent testing of the system, reviewed all the reports and their own independent testing, and implemented those safeguards that would reasonably protect against the alleged vulnerability and security flaws.

The right to an injunction is not absolute. *Western Maryland Dairy v. Chenowith*, 180 Md. 236 (1942). Granting or refusing of such relief rests in the sound discretion of the trial court, acting on all of the circumstances of the case. *Fox v. Ewers*, 195 Md. 650 (1950); *Kennedy v. Bar Association of Montgomery County*, 316 Md. 646 (1989).

Normally, a preliminary injunction is one granted after an opportunity for a full, adversarial hearing on the propriety of its issuance and normally will only be issued when it is necessary to preserve the "status quo" until a final decision on the merits can be had. *Tyler v. State of Maryland*, 230 Md. 18 (1962).

In order to obtain a preliminary injunction, the moving party has the burden to satisfy all four of the following criteria:

- 1). There is a real probability the party seeking the injunction will succeed on the merits.
- 2). The injury that would be suffered if the injunction is granted is less than the harm that would result from its refusal, otherwise known as the balance of hardship test, or the balance of convenience.
- 3). The party seeking the injunction will suffer irreparable injury if it is not granted, and
- 4). Granting the injunction would be in the public interests.

Malooof v. State Department of Environment, 136 Md. 682 (2001); *Teferi v. Dupont Plaza Associates*, 77 Md. App. 566 (1989).

Ordinarily, the failure to prove the existence of even one of the four factors precludes a grant of preliminary relief. *Fogle v. H & W Restaurant, Inc.*, 337 Md. 441 (1995). However, in litigation between governmental and private parties, or in cases in which injunctive relief directly impacts governmental interests, the Court is not bound by the strict requirements of traditional equity as developed in private litigation. *Fogle*, 337 Md. at 456. Rather, the courts may, and frequently do, go much further, both to give

and withhold relief in furtherance of the public interests, than they are accustomed to do when only private interests are involved. *Id.* at 456.

Taking each factor in turn, the Court is not convinced, from the credible evidence it heard, that Plaintiffs have a real probability of prevailing on the merits. While the Court is extremely concerned with the allegations of vulnerabilities and security flaws in this system, as well as any other system, the credible expert testimony by Dr. Shamos indicated the State of Maryland is now employing all reasonable solutions and fixes suggested by all experts and has developed a system that could and should withstand external attack.

As indicated, his opinion is predicated on a more appropriate standard of care, if you will, than one of 100% perfection and/or military concepts. That is not to say that after a full-blown adversarial hearing the Plaintiffs may yet prove to the Court that more needs to be done, but from the testimony the Court heard, it is satisfied the Plaintiffs have not established the probability of prevailing on the merits, thereby decertifying or in some other fashion negating the use of the Diebold machines.

In any election, the mere suggestion a vote would be lost, or not counted, is a harm the government cannot ignore. A small number of plaintiffs wish to have the option to not vote on the touch screen, but to do so on paper. Defendants' witness, Torre, testified to the exorbitant cost of printing, advertising, educating the public, training judges, and preparing paper ballots for those who do not wish to use the touch screen. See, Defendant's Exhibit L. In light of the fact the Plaintiffs waited, perhaps years to bring this suit after notice of the use of this system, and the exorbitant cost of their so-called "fix", the Court finds the harm suffered by the State of Maryland far outweighs the possibility of a vote not being counted.

This member of the bench will not find the Plaintiffs' claims are barred by laches, see, *Barthelmes v. Morris*, 342 F.Supp. 153 (D. Md., 1972). However, the Court does find the Plaintiffs had ample notice, as early as 2002, of the use of the Diebold machines and clearly could have taken steps earlier than late April of 2004 concerning the November 2004 presidential election. In any event, the Court does not find, on balance, that the hypothetical harm to the Plaintiffs outweighs the real harm to the Defendants. As pointed

out, it is not just a question of printing ballots, but rather, of advertising the use of the ballots, educating the public, training the election judges and developing a security system for the paper ballots, all of which takes time, of which there is precious little.

The next criteria to be discussed is whether the Plaintiffs will suffer irreparable injury unless the injunction is granted. Clearly, from the overwhelming weight of credible evidence, the Plaintiffs will not suffer irreparable injury. While the Hopkins and RABA reports indicate catastrophic, doomsday-type scenarios, nevertheless, the Court is impressed with Dr. Shamos's testimony this will not occur. The Court is confident the votes of Plaintiffs will be counted. The State of Maryland has implemented the more reasonable requests and recommendations made by all the studies. They are, for example, implementing parallel monitoring, which, in a nutshell, is the random testing of machines during the hours the polls are open to ensure a virus has not been placed in the machines in order to count votes which were not cast, or disrupt the election. This is done during the poll hours of operation to ensure that if a virus was loaded into the machine, and which will only activate during the time of operation, that theoretically, it would be detected. They have secured and encrypted the information sent by machine to machine; they have secured the machines; they have changed the passwords; they have taken the necessary steps to ensure external security of the machines and they protect the machines prior to the election and subsequent thereto. They have taken all reasonable steps to protect the integrity of the voting process in the State of Maryland.

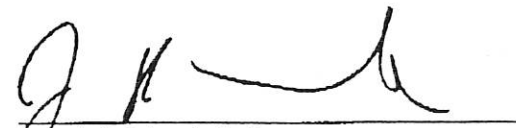
The last criteria, the public interest, the Court finds is served and protected by the actions taken by the State of Maryland. Granting this injunction, at this late date, to allow for paper ballots for those who, for whatever reason, have no faith in the Diebold touch-screen voting system would cause much confusion and is clearly against the public interest. Maryland has indicated by law there shall be one system in use throughout all counties in the state. Election Law, §9-101. This system has been, as all experts indicated, thoroughly dissected and studied, more so in Maryland than in any other state. External systems such as locked warehouses, lock tape, etc., have been employed to provide integrity to the external portion of the machines. The Microsoft patches, when feasible, have been installed. Encryption, password change, etc.

and parallel monitoring have been implemented. Maryland has done what Maryland should do for the benefit of its voters to ensure the safety, confidence, reliability and minimizing of risk of this voting system. No system is infallible. No machine is infallible. All experts agree systems such as these are much more secure and less vulnerable than the paper ballot, and even the optoscan ballots. The public interest is being served by the careful and complete review by the State Board of Elections of all reports, independent testing, and the eventual implementation of those factors deemed appropriate to be instituted for the protection of the public and the voting system.

While the Court was certainly impressed with the testimony of all experts, and those the Court qualified as experts in fields where, perhaps, expert testimony was truly not necessary, nevertheless, the Plaintiffs' experts either demand a paper ballot in conjunction with the voting machines or a militarily impregnable voting system. Not only is this not feasible, it is cost-prohibitive. In a perfect world, perhaps, this should be done, and perhaps the Legislature should review same, however the overwhelming factual evidence clearly shows there have been no verified incidences of tampering with these machines anywhere in the United States. The votes have been counted accurately. Recounts have occurred with complete accuracy, and there is no reason to believe this will not continue.

The Court finds the State of Maryland has acted reasonably in setting up the system and protecting it against any reasonable risks.

On balance, it is clear this injunction should not be granted. For the above-stated reasons, the Court will deny the injunction requested by the Plaintiffs.



Joseph P. Manck, Judge

Dated: 1 day of September, 2004.

Copies to:

Ryan D. Phair, Esquire
Daniel F. Goldstein, Esquire
Richard D. Rosenthal, Esquire
Michael D. Berman, Esquire

LINDA SCHADE, et al

Plaintiffs

v.

MARYLAND STATE BOARD OF ELECTIONS
LINDA H. LAMONE (as Administrator of
Maryland's State Board of Elections)

Defendants

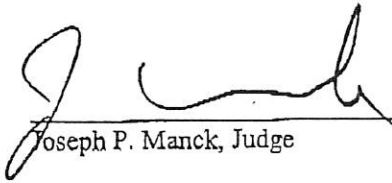
* IN THE
* CIRCUIT COURT
* FOR
* ANNE ARUNDEL COUNTY
* CASE NO. C-04-97297

* * *

ORDER

In accordance with the Memorandum Opinion of even date herewith and attached hereto, it is, this
1 day of September, 2004, by the Circuit Court for Anne Arundel County,

ORDERED, that Plaintiffs' Motion for Preliminary Injunction be and the same is hereby denied.



Joseph P. Manck, Judge

Copies to:

- Ryan D. Phair, Esquire
- Daniel F. Goldstein, Esquire
- Richard D. Rosenthal, Esquire
- Michael D. Berman, Esquire

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TOPEKA

HOUSE OF
REPRESENTATIVES

COMMITTEE ASSIGNMENTS
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MEMBER: FEDERAL AND STATE AFFAIRS
FINANCIAL INSTITUTIONS
TAX

JOINT COMMITTEE ASSIGNMENTS
MEMBER: ECONOMIC DEVELOPMENT
INFORMATION TECHNOLOGY

Testimony for HB 2139

House Government Organization and Elections Committee

Chairman Vickrey I want to thank you for holding a hearing on this most urgent and important issue. I say it is time to get our county commissioners off the fence.

Fence viewer laws have been on the books for over 130 years and have become antiquated and inefficient methods for resolving disputes regarding fences. The current law allows only two commissioners to bind the commission even if there are five or seven members. HB 2139 addresses that problem and allows for better use of our county commissioners time.

I would also like to point out that HB 2139 still allows a county commissioner to act in the capacity of a fence viewer if they so choose. The important aspect is that it gives the commission the power to delegate that function if they wish.

I will grant you that this is not one of the most pressing issues of the 2005 legislative session. However, it is time we correct this problem and I greatly appreciate this committee taking action to address the issue.

Nile Dillmore

House Gov. Org. & Elections
Date: 2-15-05
Attachment # 10



Johnson County, Kansas

BOARD OF COUNTY COMMISSIONERS

Testimony in support of HB 2139

presented to the

House Governmental Organization and Elections Committee

by

Danielle Noe

Intergovernmental Relations Coordinator

February 15, 2005

Mister Chairman and Members of the committee:

Thank you for the opportunity to testify in favor of HB 2139, relating to fence viewers.

K5A 29-201 et seq. provides that county commissioners shall serve as fence viewers. Fence viewers may be called to view a fence for a number of reasons. Some of those reasons may include:

- to determine if a party has neglected to repair or rebuild a partition fence;
- to determine the sufficiency of repaired or rebuilt fences; or
- to assign the adjoining owners their equal share or part of such partition fence to be kept up and maintained;

The fence viewing statute was first adopted in 1868 and has only been amended twice-in 1923 and 1949. Johnson County has consistently advocated that the law be amended to allow the Board of County Commissioners to appoint designees to do the fence viewing.

The last fence viewing in Johnson County was in 1998; and it gave rise to first fence viewing case to go to the Kansas Supreme Court since 1911 (See 269 Kan 122). Because the fence viewing laws only apply to townships, Johnson County has very few true fence viewing situations arise. Prior to 1998, Johnson County had not had a fence viewing for nearly 5 years. We receive telephone calls several times a year about potential fence viewings but so far none of those calls has given rise to a true fence viewing situation. Johnson County almost had one in 2002, but an attorney for the County and the County Engineer inspected the property and met with the owners and determined that the problem was really a boundary dispute, which was not within the jurisdiction of the fence viewers.

During the 2001 Legislative Session, there was an attempt to amend KSA 29-201 in response to the 1998 Supreme Court Case. The Kansas Supreme Court suggested that the legislature review this section of law and clarify the number of commissioners needed to be fence viewers. The court notes that this statute was written nearly 100 years before the legislature authorized

House Gov. Org. & Elections

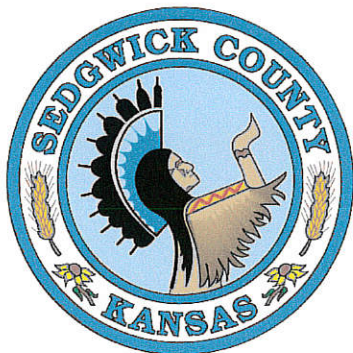
Date: 2-15-05

Attachment # 11

counties to have more than three commissioners and it is in need of being updated to reflect that change. Also, the Supreme Court recommended that the legislature clarify what, if anything the parties to the fence viewing can appeal.

HB 2139 is an appropriate response to an antiquated statute. The bill is *permissive* in nature and *would not require* county commissioners to designate fence viewers. The bill takes into consideration that several counties currently have more than three county commissioners by creating a requirement for majority approval on actions resulting from the fence viewing. And very importantly, the bill would allow a county to deal with fence viewing situations efficiently and effectively by allowing counties to avail themselves of the appropriate personnel, with appropriate knowledge and experience, to make a recommendation back to the county commissioners for their final decision.

HB 2139 would relieve county commissioners from having to perform an antiquated task in which they have little, if any, knowledge or background. Therefore, on behalf of the Board of County Commissioners for Johnson County, I respectfully request your support of HB 2139.



GOVERNMENT RELATIONS

Sedgwick County Courthouse
525 N. Main, Suite 365
Wichita, KS 67203
Phone: (316) 660-9378
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Michael D. Pepoon
Director

**TESTIMONY HB 2139
HOUSE GOVERNMENT ORGANIZATION AND ELECTIONS COMMITTEE
FEBRUARY 15, 2004**

Chairman Vickrey and members of the committee, I appreciate the opportunity to present testimony on behalf of the Board of County Commissioners of Sedgwick County in support of HB 2139. This is a bill that would amend K.S.A. 29-201 and allow the board of county commissioners to designate persons to act in their stead and carry out their statutory duties of fence viewing. Any such action taken by persons delegated to carry the duties of fence viewing must still be approved by a majority of the board of county commissioners.

The fence viewer statutes, K.S.A. 29-201 *e. seq.* were first enacted in 1868, and only amended once in 1949. These statutes are clearly outdated and address a problem that was much more prevalent in Kansas at the time of our earlier settlers. Even the dollar amounts specified in the statutes clearly indicate how out of date these statutes are as a county commissioner is allowed \$7.50 "as full compensation for each fence viewed" and only assessed the sum of \$10.00 for refusing to perform the duty of being a fence viewer.

Clearly many counties in the state of Kansas today, such as Sedgwick County, are more urban in nature and the county commissioners in such counties perform a variety of functions much more important than going out into the country and viewing fences. This legislation still requires that any action taken by the fence viewers "shall require a majority vote of the board of county commissioners." This legislation needs to be amended if for no other reason than the fact that current law allows two county commissioners be empowered to take action as fence viewers. Several counties such as Sedgwick have five county commissioners and Johnson County has seven county commissioners, so in effect this statute is allowing less than a quorum of the county commission to make a decision in a fence matter.

The Kansas Supreme Court in the case of Kaplan v. Board of County Commissioners, Johnson County, in 2000, stated, "[t]he legislature may want to revisit what is essentially a 132 year-old law. Most of the fence and fence viewers' law was passed in 1868 and has had few modifications since." While not addressing all the changes that may be needed, HB 2139 is a good start in solving some of the defects in this law and should be supported.

"Sedgwick County...working for you"

House Gov. Org. & Elections
Date: 2-15-05
Attachment # 12



WRITTEN TESTIMONY

House Committee on Governmental Organization and Elections
HB 2139

February 15, 2005

By Judy A. Moler, General Counsel/Legislative Services Director

Thank you, Chairman Vickery and Members of the House Committee for allowing the Kansas Association of Counties to provide testimony on HB 2139.

HB 2139 would allow the Board of County Commissioners (BOCC) to designate others to view fences when there is a dispute. The appointees could have specific skills related to fence viewing which commissioners might not have. The Board of County Commissioners, as elected officials, would still have the **final** say in any action taken. This bill is permissive only and would apply only in counties that choose to designate others as fence viewers. Just as you as legislators rely on legislative research to provide information, the designee of the BOCC would provide needed information to the commissioners.

The Kansas Association of Counties respectfully requests the Committee passage of HB 2139.

The Kansas Association of Counties, an instrumentality of member counties under K.S.A. 19-2690, provides legislative representation, educational and technical services and a wide range of informational services to its member counties. Inquiries concerning this testimony should be directed to Randy Allen or Judy Moler by calling (785) 272-2585.



PUBLIC POLICY STATEMENT

**HOUSE COMMITTEE ON GOVERNMENT ORGANIZATION AND
ELECTIONS**

Re: HB 2139—Fence Viewers.

**February 15, 2005
Topeka, Kansas**

**Testimony provided by:
Terry D. Holdren
Local Policy Director
KFB Governmental Relations**

Chairman Vickrey and members of the House Committee on Government Organization and Elections, thank you for the opportunity to appear before you today. I am Terry Holdren and I serve as the Local Policy Director—Governmental Relations for Kansas Farm Bureau. As you know, KFB is the state's largest general farm organization representing more than 40,000 farm and ranch families through our 105 county Farm Bureau Associations.

Beginning in 1868, KSA 29-201 designated the Board of County Commissioners as fence viewers in each township in their county. The statute gives specific powers to the Board, generally focused on settling disputes between adjoining landowners over repair and maintenance of fence lines.

KFB members have long supported the responsibility of the majority of county commissioners in each county to serve as fence viewers for settling disputes regarding fences. That duty should be maintained.

Thank you for your attention this afternoon. Please support this practice and current Kansas law.

Kansas Farm Bureau represents grass roots agriculture. Established in 1919, this non-profit advocacy organization supports farm families who earn their living in a changing industry.

House Gov. Org. & Elections
Date: 2-15-05
Attachment # 14

HOUSE BILL No. 2093

By Committee on Governmental Organization and Elections

1-20

9 AN ACT concerning counties; relating to changes in boundaries; amend-
10 ing K.S.A. 18-202 and repealing the existing section.

11

12 *Be it enacted by the Legislature of the State of Kansas:*

13 Section 1. K.S.A. 18-202 is hereby amended to read as follows: 18-
14 202. ~~That whenever the citizens of two or more counties desire a change~~
15 ~~in the boundaries thereof, they may petition their respective boards of~~
16 ~~county commissioners therefor, and each of said petitions shall designate~~
17 ~~the change desired, and shall be signed by none but legal voters of the~~
18 ~~county before whose board the same is presented, and shall be signed by~~
19 ~~at least one-half of such legal voters of each county respectively, to be~~
20 ~~ascertained from the last assessment rolls of the several township asses-~~
21 ~~sors in the county and accompanied by affidavits signed and sworn to by~~
22 ~~at least two credible witnesses, that the signatures to the petition are~~
23 ~~genuine, and that the persons signing the same are legal voters in said~~
24 ~~county. Provided, That before any petition shall be heard, satisfactory~~
25 ~~proof shall be made by affidavit, to said board, that at least three notices~~
26 ~~containing copies of such petition or petitions have been posted at least~~
27 ~~six weeks before the same shall be heard, in three public places in each~~
28 ~~township in the counties to be affected by such change of boundaries,~~
29 ~~one of which shall be kept posted upon the door of the office of the clerk~~
30 ~~of the district court of said counties, which notices shall contain a copy~~
31 ~~of the petition, and shall show the time of hearing. And provided further,~~
32 ~~That if an equal number shall sign the remonstrances in each county~~
33 ~~where the petition is to be heard to the number signing the petitions, no~~
34 ~~election shall be held.~~

35 (a) ~~The boards of county commissioners of any two or more counties~~
36 ~~may adopt a resolution changing the boundaries of such counties. Such~~
37 ~~resolution shall describe the change desired. Such resolution shall not be~~
38 ~~effective until the question has been submitted to and approved by a~~
39 ~~majority of the voters of each of the counties voting at an election thereon~~
40 ~~as provided by K.S.A. 18-201 et seq., and amendments thereto.~~

41 (b) Upon presentation of a petition requesting a change in the bound-
42 aries of two or more counties signed by at least 5% of the qualified electors
43 of the county, the board of county commissioners shall adopt a resolution

1 *changing the boundaries as requested by the petition. Such resolution*
2 *shall not be effective until the question has been submitted to and ap-*
3 *proved by a majority of the voters of each of the counties voting at an*
4 *election thereon as provided by K.S.A. 18-201 et seq., and amendments*
5 *thereto.*

(b)

6 ~~(c)~~ *At least three public hearings shall be called and held on any*
7 *resolution adopted pursuant to this section. At least one hearing shall be*
8 *held in each county affected by the proposed change. Notice of such hear-*
9 *ing shall be published in a newspaper or newspapers of general circulation*
10 *in each county affected at least three times prior to the date of each*
11 *hearing.*

12 Sec. 2. K.S.A. 18-202 is hereby repealed.

13 Sec. 3. This act shall take effect and be in force from and after its
14 publication in the statute book.

HOUSE BILL No. 2094

By Committee on Governmental Organization and Elections

1-20

10 AN ACT enacting the efficiency in local government act; amending
11 K.S.A. 2004 Supp. 19-205 and repealing the existing section.
12

13 *Be it enacted by the Legislature of the State of Kansas:*

14 New Section 1. As used in this act:

15 (a) "Board" means the board of county commissioners.

16 (b) "City" means any city.

17 (c) "Commission" means a reorganization study commission selected
18 pursuant to section 2, and amendments thereto.

19 (d) "County" means any county.

20 New Sec. 2. (a) The board of county commissioners of a county and
21 the governing body of any city or cities located within such county may
22 adopt a joint resolution providing for the establishment of a reorganiza-
23 tion study commission to prepare a plan for the reorganization of the
24 county and such city or cities located in such county. If the governing
25 body of a city within the county does not adopt such joint resolution, such
26 city shall not be included within nor subject to the provisions of any
27 reorganization plan in regard to the status of such city as a separate entity
28 from the county.

29 Such resolution shall not be effective until the question has been sub-
30 mitted to and approved by a majority of the qualified electors of the
31 county voting at an election thereon. Such election shall be called and
32 held in the manner provided by the general bond law.

33 (b) Any resolution adopted pursuant to subsection (a) shall provide
34 for the establishment of a reorganization study commission and shall pro-
35 vide either that the members be appointed or that the members be
36 elected by the qualified electors of the county on a nonpartisan basis. If
37 the commission is to be elected, the procedure for holding such election
38 shall be determined by such resolution. The laws applicable to the pro-
39 cedure, manner and method provided for the election of county officers
40 shall apply to the election of members of the commission except that such
41 election shall be called in the manner provided by the general bond law.

42 (c) If a majority of the qualified electors of the county voting on a
43 resolution submitted pursuant to subsection (a) vote in favor thereof, the

Include notice
of levy to
pay costs.

1 commission shall be elected or appointed as provided by the resolution.
2 The number of members on a reorganization study commission shall be
3 determined by the resolution. At least $\frac{1}{3}$ of the membership of a reor-
4 ganization study commission shall be residents of the unincorporated area
5 of the county.

6 New Sec. 3. (a) Within 30 days following the certification of the re-
7 sults of the election or appointment of members of the reorganization
8 study commission, the chairperson of the board of county commissioners,
9 acting as the temporary chairperson of the commission, shall call and hold
10 an organizational meeting of the commission. The commission shall elect
11 a chairperson, vice-chairperson and other officers deemed necessary. The
12 commission may adopt rules governing the conduct of its meetings.

13 (b) The commission shall be subject to the open meetings law and
14 the open records law.

15 (c) Members of the commission shall be reimbursed for the actual
16 and necessary expenses incurred in the performance of their official
17 duties.

18 (d) The commission may appoint an executive director of the
19 commission.

20 (e) The commission shall prepare and adopt a budget for the oper-
21 ation and functions of the commission and commission activities.

22 New Sec. 4. (a) The commission shall prepare and adopt a plan ad-
23 dressing the reorganization of the city or cities and county or certain city
24 and county offices, functions, services and operations. The commission
25 shall conduct such studies and investigations as it deems appropriate to
26 complete its work. Such studies and investigations shall include, but not
27 be limited to:

28 (1) Studies of the efficiency and effectiveness of the administrative
29 operations of the city or cities and county.

30 (2) Studies of the costs and benefits of reorganizing the city or cities
31 and county or certain city or cities and county offices, functions, services
32 and operations.

33 (b) The commission shall hold public hearings for the purpose of
34 receiving information and materials which will aid in the drafting of the
35 plan.

36 (c) For the purposes of performing its studies and investigations, the
37 commission or its executive director may administer oaths and affirma-
38 tions, subpoena witnesses, compel their attendance, take evidence, re-
39 quire the production of any books, papers, correspondence, memoranda,
40 agreements or other documents or records which the commission or ex-
41 ecutive director deems relevant or material to its studies and investigation.

42 (d) The commission shall prepare and adopt a preliminary plan ad-
43 dressing the reorganization of the city or cities and county or certain city

1 and county offices, functions, services and operations it deems advisable.
 2 Copies of the preliminary plan shall be filed with the county election
 3 officer, city clerk of each city to be reorganized and each public library
 4 within the county and shall be available to members of the public for
 5 inspection upon request. The commission shall hold at least two public
 6 hearings to obtain citizen views concerning the preliminary plan. At least
 7 seven days shall elapse between the holding of such hearings. Notice of
 8 such hearings shall be published at least once in a newspaper of general
 9 circulation within the county. Following the public hearings on the pre-
 10 liminary plan, the commission may adopt, or modify and adopt, the pre-
 11 liminary plan as the final plan.

12 (e) The final plan shall include the full text and an explanation of the
 13 proposed plan, and comments deemed desirable by the commission, a
 14 written opinion by an attorney admitted to practice law in the state of
 15 Kansas and retained by the executive director for such purpose that the
 16 proposed plan is not in conflict with the constitution or the laws of the
 17 state, and any minority reports. Copies of the final plan shall be filed with
 18 the county election officer, city clerk of each city to be reorganized and
 19 each public library within the county and shall be available to members
 20 of the public for inspection upon request. The commission shall continue
 21 in existence at least 90 days following the submission of the final plan for
 22 approval at an election as provided by subsection (f).

23 (f) The final plan shall be submitted to the qualified electors of the
 24 county at the next general election of the county held at least 45 days
 25 following the adoption of the final plan by the commission. Such election
 26 shall be called and held by the county election officer in the manner
 27 provided by the general election law. A summary of the final plan shall
 28 be prepared by the commission and shall be published at least once each
 29 week for two consecutive weeks in a newspaper of general circulation
 30 within the county.

31 If a majority of the qualified electors of the county voting on the plan
 32 vote in favor thereof, the reorganization plan shall be implemented in the
 33 manner provided by the plan except that no city shall be reorganized with
 34 the county and no offices, functions, services or operations of a city shall
 35 be reorganized with the county unless such reorganization plan is ap-
 36 proved by a majority of the qualified electors of such city voting at the
 37 election held on such plan.

38 There shall be printed on the ballots at any election called to approve
 39 the final plan the following statement:

40 "If the majority of the qualified electors of a county and the majority
 41 of the qualified electors of a city voting at the election to approve the
 42 final plan vote in favor of such plan, such city shall be included within
 43 and subject to the provisions of such plan.

*In the notice
 of such hearing,
 there shall be
 included a
 statement that
 a tax not to
 exceed one mill
 may be levied
 to finance the
 costs of the
 reorganization
 study commission.*

1 If the majority of the qualified electors of a city voting at the election
2 to approve the final plan, do not vote in favor of such plan, such city shall
3 not be included within nor subject to the provisions of such plan in regard
4 to the status of such city as a separate entity from the county."

5 If such a majority of the electors vote against such plan, the proposed
6 reorganization plan shall not be implemented.

Include notice

7 If the commission submits a final plan which does not recommend the
8 reorganization of the city or cities and county or certain city and county
9 offices, functions, services and operations, the provisions of this subsection
10 shall not apply.

of tax levy

11 New Sec. 5. (a) Any plan submitted by the commission shall provide
12 for the exercise of powers of local legislation and administration not in-
13 consistent with the constitution or other laws of this state.

14 (b) If the commission submits a plan providing for the reorganization
15 of certain city and county offices, functions, services and operations, the
16 plan shall:

17 (1) Include a description of the form, structure, functions, powers
18 and officers and the duties of such officers recommended in the plan.

19 (2) Provide for the method of amendment or abandonment of the
20 plan.

21 (3) Authorize the election or appointment of officers.

22 (4) Authorize the elimination of offices.

23 (5) Specify the effective date of the reorganization.

24 (6) In the case of multi-city reorganization with a county, the plan
25 shall include provisions addressing the situation if the plan is approved
26 by the electors of one, but not all cities to be reorganized under the plan.

27 (7) Include other provisions determined necessary by the
28 commission.

*Any officers
selected on the
basis of election
shall continue
to be selected
by election.*

29 (c) If the plan provides for the reorganization of the city or cities and
30 county, in addition to the requirements of subsection (b) the plan shall:

31 (1) Fix the boundaries of the governing body's election districts, pro-
32 vide a method for changing the boundaries from time-to-time, any at-
33 large positions on the governing body, fix the number, term and initial
34 compensation of the governing body of the reorganized city-county and
35 the method of election.

36 (2) Determine whether elections of the governing body of the reor-
37 ganized city-county shall be partisan or nonpartisan elections and the time
38 at which such elections shall be held.

39 (3) Determine the distribution of legislative and administrative duties
40 of the reorganized city-county officials, provide for reorganization or ex-
41 pansion of services as necessary, authorize the appointment of a reorgan-
42 ized city-county administrator or a city-county manager, if deemed ad-
43 visable, and prescribe the general structure of the reorganized city-county

1 government.

2 (4) Provide for the official name of the reorganized city-county.

3 (5) Provide for the transfer or other disposition of property and other
4 rights, claims and assets of the county and city.

5 New Sec. 6. (a) If the voters approve a plan which provides for the
6 reorganization of the city or cities and county, such reorganized city-
7 county shall be subject to the provisions of this section.

8 (b) The reorganized city-county shall be subject to the cash-basis and
9 budget laws of the state of Kansas.

10 (c) Except as provided in subsection (d), and in any other statute
11 which specifically exempts bonds from the statutory limitations on bonded
12 indebtedness, the limitation on bonded indebtedness of a reorganized
13 city-county under this act shall be determined by the commission in the
14 plan, but shall not exceed 30% of the assessed value of all tangible taxable
15 property within such county on the preceding August 25.

16 (d) The following shall not be included in computing the total bonded
17 indebtedness of the reorganized city-county for the purposes of deter-
18 mining the limitations on bonded indebtedness:

19 (1) Bonds issued for the purpose of refunding outstanding debt, in-
20 cluding outstanding bonds and matured coupons thereof, or judgments
21 thereon.

22 (2) Bonds issued pursuant to the provisions of article 46 of chapter
23 19 of the Kansas Statutes Annotated, and amendments thereto.

24 (3) Bonds issued for the purpose of financing the construction or
25 remodeling of a courthouse, jail or law enforcement center facility, which
26 bonds are payable from the proceeds of a retailer's sales tax.

27 (4) Bonds issued for the purpose of acquiring, enlarging, extending
28 or improving any storm or sanitary sewer system.

29 (5) Bonds issued for the purpose of acquiring, enlarging, extending
30 or improving any municipal utility.

31 (6) Bonds issued to pay the cost of improvements to intersections of
32 streets and alleys or that portion of any street immediately in front of city
33 or school district property.

34 (e) Any bonded indebtedness and interest thereon incurred by the
35 city or cities or county prior to reorganization or refunded thereafter shall
36 remain an obligation of the property subject to taxation for the payment
37 thereof prior to such reorganization.

38 (f) Upon the effective date of the reorganization of the city or cities
39 and county, any retailers' sales tax levied by the city or cities or county in
40 accordance with K.S.A. 12-187 et seq., and amendments thereto, prior to
41 such date shall remain in full force and effect, except that part of the rate
42 attributable to the city or cities to be reorganized shall not apply to retail
43 sales in the cities which are not reorganized with the county. For the

1 purposes of K.S.A. 12-188, and amendments thereto, the reorganized
2 city-county shall be a class A, B, C or D city as determined by the com-
3 mission in the plan.

4 (g) Upon the effective date of the reorganization of the city or cities
5 and county, the territory of the reorganized city-county shall include:

6 (1) All of the territory of the county for purposes of exercising the
7 powers, duties and functions of a county.

8 (2) All of the territory of the county, except the territory of the cities
9 which are not reorganized with the county and the unincorporated area
10 of the county, for purposes of exercising the powers, duties and functions
11 of a city.

12 (h) For the purposes of section 1 of article 5 of the constitution of
13 the state of Kansas, the "voting area" for the governing body of the re-
14 organized city-county shall include all the territory within the county.

15 (i) Except for the reorganized city-county and unless otherwise pro-
16 vided by law, other political subdivisions of the county shall not be af-
17 fected by reorganization of the city or cities and county. Such other po-
18 litical subdivisions shall continue in existence and operation.

19 (j) Unless otherwise provided by law, the reorganized city-county
20 shall be eligible for the distribution of any funds from the state and federal
21 government as if no reorganization had occurred. Except as provided in
22 this subsection, the population and assessed valuation of the territory of
23 the reorganized city-county shall be considered its population and as-
24 sessed valuation for purposes of the distribution of moneys from the state
25 or federal government.

26 (k) The reorganized city-county shall be a county. The governing
27 body of the reorganized city-county shall be considered county commis-
28 sioners for the purposes of section 2 of article 4 of the constitution of the
29 state of Kansas and shall have all the powers, functions and duties of a
30 county and may exercise home rule powers in the manner and subject to
31 the limitations provided by K.S.A. 19-101a, and amendments thereto, and
32 other laws of this state.

33 The governing body of the reorganized city-county shall be responsible
34 for any duties or functions imposed by the constitution of the state of
35 Kansas and other laws of this state upon any county office abolished by
36 the reorganization plan. Such duties may be delegated by the governing
37 body or as provided in the reorganization plan.

38 (l) The reorganized city-county shall be a city of the first, second or
39 third class as determined by the commission in the plan. The governing
40 body of the reorganized city-county shall have all the powers, functions
41 and duties of a city of such class and may exercise home rule powers in
42 the manner and subject to the limitations provided by article 12 of section
43 5 of the constitution of the state of Kansas and other laws of this state.

1 (m) The governing body of the reorganized city-county may create
2 special service districts within the city-county and may levy taxes for serv-
3 ices provided in such districts.

4 (n) Changes in the form of government approved by the voters in
5 accordance with the reorganization plan are hereby declared to be leg-
6 islative matters and subject to initiative and referendum in accordance
7 with K.S.A. 12-3013 *et seq.*, and amendments thereto.

8 New Sec. 7. The board of county commissioners may levy a tax not
9 to exceed one mill on all taxable tangible property of the county for the
10 purpose of financing the costs incurred by the reorganization study com-
11 mission while executing the powers, duties and functions of such com-
12 mission. After the payment of such costs incurred by the commission any
13 remaining moneys derived from such tax levy shall be transferred to the
14 county general fund in the manner provided by K.S.A. 79-2958, and
15 amendments thereto.

16 Sec. 8. K.S.A. 2004 Supp. 19-205 is hereby amended to read as fol-
17 lows: 19-205. Except as provided by K.S.A. 12-344 ~~and~~, 12-345, *sections*
18 *5 and 6, and amendments thereto*, no person holding any state, county,
19 township or city office shall be eligible to the office of county commis-
20 sioner in any county in this state.

21 Nothing in this section shall prohibit the appointment of any county
22 commissioner to any state board, committee, council, commission or sim-
23 ilar body which is established pursuant to statutory authority, so long as
24 any county commissioner so appointed is not entitled to receive any pay,
25 compensation, subsistence, mileage or expenses for serving on such body
26 other than that which is provided by law to be paid in accordance with
27 the provisions of K.S.A. 75-3223, and amendments thereto.

28 New Sec. 9. Sections 1 through 7, and amendments thereto, shall be
29 known and may be cited as the efficiency in local government act.

30 Sec. 10. K.S.A. 2004 Supp. 19-205 is hereby repealed.

31 Sec. 11. This act shall take effect and be in force from and after its
32 publication in the statute book.