BALLOT TRACKING SYSTEMS REPORT

To

THE LEGISLATURE

Washington
Secretary of State
SAM REED

Ballot Tracking Systems Report

In 2005, the Legislature authorized counties to decide to conduct all elections by mail. In that legislation, Chapter 241, Laws of 2005, the Legislature requested a study of available ballot tracking technologies. This report describes the ballot tracking systems that are currently available. Only four systems are currently available. However, additional vendors are developing products and will likely expand the market in coming years.

Since permanent absentee voting was authorized in 1991, voting through the mail has increasingly become the voting method of choice for Washington voters. Consequently, in 2005, the Washington State Legislature allowed counties to decide to conduct all elections by mail. As of January 2007, 34 of the 39 counties in Washington conduct all elections by mail.

- In the 2006 primary election, 93% of the ballots cast were cast by mail.
- In the 2006 general election, 89% of the ballots cast were cast by mail.

Moving from a poll site voting environment to a mail voting environment has streamlined the elections process, provided County Auditors with greater control over proper election administration, and increased voter participation. Using one election system, County Auditors are better able to track and account for each ballot issued and returned.

Ballot tracking systems are integrated with existing voter registration systems and ballot tabulation systems. These automated systems make ballot processing more efficient and accurate because they are capable of tracking which ballot formats should be sent to which voters, when ballots are mailed, when ballots are received, which signatures have been verified, which signatures are not accepted, which ballots have been separated from the outer envelope, which ballots have been tabulated, etc. The systems allow the County Auditor to establish a number of checkpoints in the process.

Each county is required to have ballot accountability procedures in place. The Office of the Secretary of State recommends the use of an automated ballot accountability system in place of manual accountability procedures. While automated systems are often more efficient, they have high ongoing maintenance costs and are therefore cost prohibitive for many counties.

Ballot tracking is a developing market. Four systems have been developed so far.

I. Mail in Ballot Tracker by VoteHere
II. Secure Ballot System by Integrity Voting Systems, K&H Printers
III. Relia-Vote Mail Balloting System by Pitney-Bowes
IV. Automated Signature Verification, part of VoteRemote Suite by Diebold

Costs are also fluid based on the size of the jurisdiction. Initial funding for the systems was provided by Secretary of State grants to the counties, with Help America Vote Act (HAVA) funds. This funding will provide maintenance through the 2007 spring elections. A description of each of the four systems is included in this report.

The information provided in this report is current as of January 2007.

I. Mail in Ballot Tracker by VoteHere

<u>County Information</u>:   In use in 25 counties.

Mail in Ballot Tracker (MiBT) tracks both envelopes and ballots from the time the ballots are inserted in outgoing envelopes and mailed to voters, through tabulation of the ballots. A separate barcode is placed on the ballot and the outer envelope. Using the barcodes, the system can track:

- Insertion of the ballot and ballot materials into the outgoing envelope mailed to the voter;
- Mailing of the ballot materials to the voter;
- Receipt by the Auditor's Office of a ballot returned by the post office as undeliverable;
- Receipt by the Auditor's Office of a signed outer envelope, presumably containing a voted ballot;
- Verification of the voter's signature;
- Separation of the voted ballot and signed outer envelope; and
- Tabulation of the voted ballot.

Using MiBT, the county can track each returned envelope according to checkpoints in the ballot processing established by the County Auditor's Office. The County Auditor can also make some information available on a website, allowing voters to track the progress of their ballots within a batch of ballots.

Returned envelopes and ballots are often processed in batches of 25-300 from the time the return envelopes are received from the post office to tabulation and storage of the ballots. MiBT supports and automates this batch process. It reports to the County Auditor's Office when an incorrect number of ballots or envelopes were processed at a checkpoint, or when ballots or envelopes were processed in the incorrect batch. If ballots or envelopes must be removed from a batch, they are scanned into the MiBT system, along with a reason for the removal. The ballots are tracked until they are re-scanned into another batch. This allows for greater quality control that can identify errors in handling, and a means to resolve those errors, eliminating the need to re-process tens of thousands of ballots.

Standard procedures require the County Auditor's Office to separate the signed outer envelope from the inner security envelope that contains the voted ballot. This separation occurs after the signature on the outer envelope is verified as matching the signature in the voter registration file. The inner security envelope, containing the voted ballot, is opened separately to protect the anonymity of the voter, often referred to as "privacy of the ballot." MiBT preserves this anonymity. The barcode on a ballot can track which batch of ballots contains a particular ballot, but cannot reveal who voted that ballot. MiBT provides an automated method to track batches of outer envelopes or batches of ballots, but cannot reveal to whom a particular ballot was issued.

The system uses portable barcode readers to track ballots and envelopes at processing checkpoints established by the county. While the level of control provided by MiBT is beneficial, the system is relatively labor intensive in its current form.

II. Secure Ballot System by Integrity Voting Systems, a division of K&H Integrated Print Solutions

County Information: Outbound system used by 13 counties. Inbound system used by one county.

Secure Ballot System (SBS) is a ballot accountability system that tracks both envelopes and ballots from the time the ballots are inserted into outgoing envelopes and mailed to voters, through tabulation. SBS begins with high speed inserters equipped with barcode scanners and software to assure a match between voter and ballot style. Mail is prepared with full postal documentation and an audit trail for each voter. SBS then tracks return envelopes and voted ballots from the time the envelopes arrive at the Auditor's Office until batches of ballots are processed by the tabulation system. The system uses barcodes, scanners and touch-screen laptops.

The process begins with the voter information from the County's voter registration system. This information includes codes which uniquely identify each voter and the ballot style each voter should receive for that election. A barcode printed on the stub that the voter later removes ensures that the voter receives the correct ballot style for that precinct and that election. Another barcode on the ballot itself contains the ballot style and a randomly generated number. A third barcode to identify the voter is placed on the return envelope.

Returning envelopes arrive at the Auditor's Office and are grouped into batches. The batches are scanned on high speed scanners to capture voter ID. This data is uploaded to organize the signatures, so elections staff can verify the signature on file against the signature on the envelope. If the ballot cannot be accepted, the envelope is removed from the batch and noted in both SBS and the county's voter registration system. If the issue is later resolved, the envelope reenters the process in a new batch. Envelopes in each batch are rescanned at high speed prior to extraction to assure the integrity of the original batch and to ensure that challenged envelopes do not remain in the batch.

During extraction, the inner envelope is separated from the outer envelope, and the ballot is subsequently removed from the inner envelope. During this process, SBS allows users to note any exceptions, such as an empty envelope. The barcode on the ballot is then scanned to identify it as part of the batch, identify the precinct number, and count the ballot. Standard procedures require that the ballot be pre-inspected to ensure that it will be read properly by the tabulation system. Some ballots may be duplicated, and some may be sent to the Canvassing Board for determination of voter intent. Anytime a ballot is removed from the batch, it is scanned into SBS, along with the reason for its removal. All ballots that are removed are tracked and eventually re-scanned into another batch for tabulation.

Because the system uses both high speed barcode readers and portable barcode readers, it is relatively automated and can better accommodate high volumes of ballots.

III. Relia-Vote Mail Balloting System by Pitney-Bowes

<u>County Information</u>: Currently not in use in Washington.

Relia-vote is a large volume envelope processing and tracking system. It processes envelopes only and has two separate components: outbound and inbound.

Outbound
A barcode is printed on each outgoing envelope. This code is unique to a voter but does not match the voter's voter registration number. A second barcode is printed on the signature envelope, and is linked to the voter registration system. The U.S. Postal System scans the barcode on the outgoing mail as it moves through the postal system, until the carrier takes possession of the envelope. The County Auditor can receive web reports providing the status of the mailed ballots.

Inbound
Incoming envelopes pass through a high speed scanner. The scanner time/date stamps each outer envelope and takes a picture of the face of the envelope, including the postmark. The scanner reads the barcode and determines if the envelope is valid for this election. Beginning in mid-2007, the scanner will be able to capture the voter's signature using red light to read through a dark window, and make a digital image of the signature.

The County Auditor's Office will be able to compare the digital image of the signature on the envelope to the digital image of the signature on file.

IV. Automated Signature Verification, part of VoteRemote Suite by Diebold

<u>County Information</u>: Currently not in use in Washington. Three counties have expressed interest.

The Diebold VoteRemote Suite includes both a high-speed envelope tracking system and automatic signature verification system. VoteRemote can be used to track incoming envelopes, and perform the automatic signature verification, independent of the outgoing service that automates the processing, printing and mailing of mail ballots. King County already uses the outgoing service that automates the processing, printing and mailing of ballots. VoteRemote currently tracks envelopes, not ballots. This system can be configured to track envelopes through the United States Postal Service.

Signature outer envelopes are printed with a bar code that contains the voter identification information for that voter and that election. As envelopes are received by the County Auditor's Office, they are fed through an envelope scanner. The machine batches the envelopes according to specifications set by the Auditor's Office. The scanner reads the bar code and scans an image of the envelope.

The envelope scanner has two bins. All envelopes that are successfully scanned are sorted into one bin, while envelopes with a missing or damaged barcode are isolated to another bin for further review.

The scanner prints onto each successfully scanned envelope both the batch number and the sequence number within the batch. The scanner can also print a time and date stamp and the voter identification number. At this point, the envelopes can then be locked away in secure storage.

The Automated Signature Verification (ASR) can be used with any voter registration system capable of exporting the voter lists and signatures. Signatures are verified in an automated fashion by comparing the signature image from the envelope with the signature image from the voter registration system. Acceptance of a signature is triggered according to a sensitivity scale established by the County Auditor. If a signature does not meet the threshold, it is reviewed by a human operator.

ASR prints a report of each batch and the sequence numbers of the signatures that were not accepted. The information exported into the voter registration system can include: scanned images, voter history, voter ID numbers, batch and sequence numbers, time and date stamps, and signature verification status. Once a signature is accepted, the voter is credited with voting.

The batches of envelopes are removed from storage for opening and processing. Any envelopes rejected by the human review of the signatures are identified by sequence number and physically removed from the batch. Because the signature verification process is automated, this system involves less handling of the envelopes and ballots, which provides relatively greater security.

Conclusion

The Revised Code of Washington, and the Office of the Secretary of State, require County Auditors to implement ballot accountability measures. The Office of the Secretary of State encourages County Auditors to employ an automated ballot tracking system that supports ballot accountability measures.

The automated ballot tracking systems that are currently available use different approaches and have varying strengths and weaknesses. For example, because MiBT is relatively labor intensive, it is of greater benefit to small and mid-sized counties. However, one county is conducting a pilot project of the MiBT with high speed scanners. Use of the IVS system in Snohomish County during the 2006 election season was positive. The Office of the Secretary of State will be conducting a pilot study of the Automated Signature Verification process in Spring 2007.

While automated ballot tracking systems assist counties with tracking ballot envelopes and ballots by batch, the costs for such systems are prohibitive for many counties. To implement the use of ballot tracking systems statewide, funding must be provided to the counties for initial capital investments and annual maintenance fees. The technology is new and competition in this sector is limited, resulting in relatively high, fluctuating prices. These costs are in addition to a County Auditor's ongoing maintenance costs for the voter registration system and ballot tabulation system.

The Office of the Secretary of State strongly encourages the Washington State Legislature and the 39 County Councils and Commissions to provide funding for automated ballot tracking systems.

Function	MiBT (VoteHere)	SBS (K&H)	Relia-Vote (Pitney-Bowes)	VoteRemote (Diebold)
Envelopes May be Tracked through the U.S. Post Office	Available in 2007	Optional	Yes	Yes
Tracks Envelopes once returned to County Auditor	Yes	Yes	Yes	Yes
Automatic Signature Verification	No	No	Available in 2007	Yes
Tracks Ballots	Yes	Yes	No	No