ILLINOIS BALLOT INTEGRITY PROJECT

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BEFORE THE COOK COUNTY BOARD OF COMMISSIONERS

The Primary Election of March 21, 2006 Analysis and Recommendations

April 27, 2006

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Make Every Vote Count . . . Count Every Vote

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As dawn broke on March 21st, thousands of election judges, most of whom had never seen nor touched much of the new voting equipment the City and County had acquired for the Primary Election, set off for their polling places. Within hours of when the polls closed and most precincts had not reported results, disaster loomed. By mid-day Wednesday, as harried election officials scrambled to find lost Memory Packs and Results Cartridges, chaos reigned and uncounted votes piled up. The best that could be said a week later was that ***most*** of the votes had been counted. The great $50 million meltdown of 2006 was complete.

Preparation for this election revealed key decision points where more informed and prudent officials should have made different choices that would have changed the outcome. At nearly every opportunity when officials could have chosen simplicity, they chose complexity; when cost-effectiveness was available, they chose profligate expense; when cooperation and coordination were required, each chose to reinvent the wheel.

Ironically, the Direct Recording Electronic (DRE) touch-screen voting machines leased for the 2006 Primary have been shown to be less accurate that the punch-card system City and County election officials were so eager to replace. In a 2005 study of residual (lost) votes, it was found that touch-screen machines had a higher residual rate than either optical scanners or punch-cards. (For a fuller discussion, see pages 35-36) More than $21 million is allocated in the purchase agreement for touch-screen voting machines – that seems to be a high price to pay for equipment that doesn't outperform punch-cards.

Machine Type	DRE (Touch-Screen)	Punch-Card	Optical Scanner
Residual Rate (Pct)	3.0	2.8	2.1
Per 10,000 Votes Cast	300	280	210

The Illinois Ballot Integrity Project believes the Commissioners should implement the following specific actions to ensure that Cook County voters have the best system available and that confidence in the integrity of our elections is restored.

Illinois Ballot Integrity Project Recommendations

1. **Sequoia failed to deliver sufficient DRE (touch-screen) voting machines to allow the City and County to implement their plan of providing one touch-screen voting device for each precinct.** Instead Sequoia leased approximately 1,900 fewer touch-screens than the purchase agreement called for, promising to deliver a "next generation DRE for the November General Election. As yet, no one has seen this "new" touch-screen voting machine. The Commissioners should withhold payment to Sequoia until such time as Sequoia produces detailed functional specifications, engineering drawings, and a prototype or model of this so-called "next generation" Direct Recording Electronic (DRE) touch-screen voting machine. The Commissioners should require that these plans be delivered not later than May 26, 2006.

2. **The City and County are prohibited by the Illinois Election Code from purchasing voting equipment that has not been certified.** Sequoia should be required to produce a feasible plan to submit these "next generation" touch-screen voting device for Federal and State certification in compliance with 2002 and 2005 Voting System Standards in sufficient time to be used by the City and County in the November General Election. The Commissioners should require that these plans be delivered not later than May 26, 2006.

3. **Sequoia failed to deliver approximately 1,900 touch-screen machines under the purchase agreement, therefore Sequoia should be required to post a surety bond in the amount of $25 million.** This will insure that the company delivers a minimum of 5,959 "next generation" DRE touch-screen voting devices, as called for in the agreement. To provide proper lead-time, all voting machines should be delivered no later than September 30, 2006.

4. **The Sequoia Insight-OS optical scanner and C-400 Ballot Tabulator do not meet 2002 Federal Voting System Standards because they do not detect and warn of undervotes.** This design defect deprives Chicago and Cook County voters of rights under the Equal Protection Clause of the Constitution. Sequoia should be required to produce a feasible plan for the retrofit and/or modification of the Sequoia Insight-OS optical scanner and C-400 Ballot Tabulator not later than May 26, 2006.

5. **Any modification or retrofit will require Federal and State re-certification.** Sequoia should be required to produce a feasible plan to submit the retrofitted or modified Insight-OS and C-400 scanners for approval in accordance with 2002 and 2005 Voting Systems and Standards (VSS). The Commissioners should require and that this plan be submitted no later than May 26, 2006.

6. **The optical scan units are an integral part of the voting system will be used by the vast majority of voters in the City and County, therefore, Sequoia should be required to post a surety bond in the amount of $25 million.** This will insure that Sequoia Voting Systems delivers a minimum of 5,509 properly certified retrofitted Insight-OS optical scan units as specified in the purchase agreement. The Commissioners should require that this equipment be delivered no later than September 30, 2006.

7. **Proper oversight is needed.** The Commissioners should direct the County Purchasing Agent to make any and all purchase contracts, leases, memoranda, notes and other relevant documents pertaining to the purchase and/or lease of voting systems and equipment between Cook County and Sequoia Voting Systems, Inc. a part of the public record and available upon request to any organization or individual on request.

8. **Duplication of effort must be avoided and cost-effective implementation assured.** The Commissioners should request that the office of the Cook County Clerk and the Chicago Board of Election Commissioners develop and implement a plan to standardize election procedures, forms, equipment, manuals and training to the greatest extent possible in order to provide voters, election judges and election officials with uniform election procedures throughout Cook County.

9. **The advice of vendors and election officials produced the debacle of March 21st.** The Commissioners should have input from other sources which can offer special expertise in the election process. **The Illinois Ballot Integrity Project recommends that the Commissioners:**

a) **Appoint a standing "Advisory Committee on Elections"** of not less than eleven (11) persons (but inclusive of such number as the Commissioners shall from time-to-time determine are appropriate), that will advise the Commissioners on matters pertaining to the conduct of elections in the City of Chicago and Cook County. The Advisory Committee on Elections" shall include in its membership:

   1) One representative each from the office of the Cook County Clerk and the Chicago Board of Election Commissioners.

   2) One representative from the City or County regular Democratic and Republican organizations and one from among such other organizations as have appeared on the previous presidential or gubernatorial elections (Green, Libertarian, etc.) or such other multi-partisan representative(s) as the Commissioners shall designate from time-to-time.

   3) One or more representatives of the Illinois State Board of Elections, not to exceed two.

   4) One or more representatives of the Cook County State's Attorney's Office, not to exceed two.

   5) Two or more representatives from bona fide civic organizations representing the disabled community, including those of both vision-impaired and mobility-impaired organizations, not to exceed three.

   6) One representative from the Committee on Elections of the Chicago Bar Association.

   7) Two or more representatives from bona fide civic organizations representing organizations concerned with ballot integrity, election fraud, voting system certification, voter enfranchisement or similar, not to exceed three.

8) Two or more representatives from organizations or academic institutions with substantial expertise in the computer sciences, specifically in the areas of voting systems architecture, security and functionality, not to exceed three.

9) Such other members as the Commissioners shall from time-to-time deem appropriate, not limited to those membership categories enumerated above.

b) The standing Advisory Committee on Elections shall serve at the pleasure of the Commissioners and the terms for members shall be set according to rules which shall be promulgated by the Commissioners.

c) Members of the Committee shall serve without compensation, but shall be reimbursed for reasonable expenses incurred in the ordinary course of activities on behalf of the Committee.

d) All meetings of the Committee shall be open to the public and a portion of such meetings shall be reserved for public comment.

e) The Commissioners shall prescribe such other rules relating to the membership and functions of the Committee, including the establishment of sub-committees as the Commissioners shall deem appropriate to the accomplishment of the purposes for which the Advisory Committee on Elections shall be constituted.

The importance of this "Advisory Committee on Elections" is difficult to underestimate. Our community includes many resources that can be focused on the elections. We strongly urge the Commissioners to tap those resources, both as a means of acquiring expertise and to add transparency to the election process. Public confidence has been shaken and bold action by our elected officials is needed to restore faith in the democratic process.

In addition to these direct actions, the Commissioners should request the assistance of other agencies:

10. The Commissioners should request that the Governor of the State of Illinois direct the State Board of Elections to immediately convene hearings for the purpose of determining if de-certification of the various components of the voting system provided by Sequoia is warranted due to poor performance.

11. The Commissioners should request that Governor of the State of Illinois direct the State Board of Elections make all relevant documents, including but not limited to staff reports, third party reports [including those of Independent Testing Authorities (ITAs)] a part of the public record, available to organizations and individuals in accordance with the provisions of the Illinois Election Code.

12. The Commissioners should request that the Illinois Attorney General commence an investigation to determine if the State Board of Elections (Board) violated its own rules and improperly granted interim certification to the Sequoia Insight-OS optical scan units and the Sequoia C-400 Ballot Tabulator, including but not limited to the issue of the failure of the Insight-OS and C-400 to comply with the federal 2002 Voting System Standards (VSS) adopted by the Board.

While Cook County Clerk David Orr has announced a 10-point program which his office believes will "cure" the problems and Langdon Neal has made public the City's own 11-point approach, neither addresses the root causes of a flawed certification and procurement process and Sequoia Voting Systems' failure to provide secure, reliable and accurate voting machines. Much stronger action such as that outlined above is required to prevent a repeat performance on November 7th.

The Illinois Ballot Integrity Project recommends that the Cook County Board of Commissioners enact by resolution the above recommendations as a means of addressing the very serious problems that resulted in the massive failure of technology and the many human failures of judgment and execution that culminated in the disaster of March 21, 2006 – the $50 million meltdown.

For more information on these recommendations, contact: Robert A. Wilson – Illinois Ballot Integrity Project – wilson@ballot-integrity.org – (847) 644-2654 – FAX: (847) 556-0363

Case Study of An Experiment Gone Wrong

In the weeks before the election, City and County officials were proudly announcing that Chicago and Cook County were the first to implement two new voting systems at the same time. In the days after the primary, both Langdon Neal and David Orr were trying to answer the question, "Whatever made you think you could pull this off?" Experienced observers of the election scene had warned that a perfect storm was brewing. All the ingredients were there in abundance:

Playing Fast and Loose with Taxpayer Dollars. The City and County, acting together, issued a Request for Proposal (RFP) that could have resulted in a different system than the one they purchased: a "blended system" that could have saving taxpayers $25 million. A year before the primary, Sequoia said the blended system was feasible and that it would provide ***". . . the simplest and most cost effective way to accomplish our goals with the least procedural impact on the pollworkers."*** Yet, when the final contract was written, the blended system had faded into the background, replaced with $25 million of optical scan units that jammed and rejected voter's ballots for no apparent reason or simply failed to work.

Federal Certification was Lacking. The City and County contracted to purchase an entirely new voting system, yet at the time the decision was announced – even when the contracts were signed - no part of that system had been certified as compliant with Federal and State standards as mandated by the Illinois Election Code. Federal certification was announced only four days before the Primary, but not until after Early Voting in Illinois was completed, meaning that some Early Voting in both the City and County was conducted on uncertified equipment.

State Certification was Improper. Final State certification was granted by the Illinois State Board of Elections only two weeks before voting started and was only possible because the Board ignored its own certification rules which mandated the adoption of Federal Voting System Standards. The Board also dismissed a staff report that raised serious doubts about the touch-screen voting machine's compliance with the Help America Vote Act of 2002 (HAVA) mandating accessibility and independent voting for the disabled. Sequoia's AVC Edge DREs (touch-screens) were difficult to use and weren't equipped with the proper devices to accommodate the mobility-impaired. As the Board's Director of Voting Systems and Standards said, "Shortcuts are being taken that shouldn't be taken."

An Incompetent Vendor. When the City and County chose Sequoia Voting Systems to provide the new system and equipment, it was the largest contract ever for the Venezuelan-controlled Sequoia – three times the price Smartmatic Corporation paid to acquire the company in March, 2005. Sequoia's failures in other jurisdictions were magnified by the sheer size of the task and the company's inability to perform. Touch-screens failed to boot up, DRE printers jammed, Card Activators didn't work, optical scanners jammed and their printers didn't work. Voters and election judges were frustrated by equipment that failed, even by the low standards Sequoia set for itself.

Not Enough Election Judges. Once the contracts were signed, little effort was made by the City and County to recruit enough election judges. Both jurisdictions failed to change the method for compensating election judges, continuing to provide the bulk of payment for just showing up. Both the City and County were short thousands of judges which meant that some precincts had as few as two judges to handle the unfamiliar new equipment or implement new procedures.

Poor and Incomplete Training. Staff and pollworkers were hampered by poor planning and lack of coordination by County and City election officials. This led to duplication of effort and wasted resources that resulted in thousands of election judges receiving no training and others receiving sub-standard training despite $200,000 paid to Sequoia to provide 13 specific training modules that would ensure pollworkers who, in the company's words, would be "knowledgeable, confident and comfortable."

Inadequate Procedures. Poll closing was not well planned and the processing of Early Voting and Absentee ballots produced built-in delays which exacerbated the problems pollworkers had in combining results from two new voting machines by means of yet a third unfamiliar device. As a result, thousands of ballots went uncounted on election night and the next day election officials were still trying to find hundreds of "lost" Memory Packs and Results Cartridges.

A Bad Deal. Voters and pollworkers were unprepared for the massive failure of voting equipment made even worse by County and City officials who shortchanged City and County precincts with lease agreements that called for nearly 1,900 fewer voting terminals than they had agreed to purchase and Sequoia had agreed to supply. When hundreds of machines failed there were few replacements and some precincts did without, asking voters to mark ballots that couldn't be counted by malfunctioning machines.

More Empty Promises? We're told that one of the reasons voters did without enough voting machines on March 21st was that they will benefit from a "next generation" DRE (touch-screen) voting machine that has yet to see the light of day. Somehow we must suspend disbelief and accept that this new voting device will be designed, tested, certified, manufactured and delivered – all in time for the November 7th General Election. Early Voting for the General Election starts in less than six months. Who among us believes that the same company that failed so badly on March 21st will do an "about face" and suddenly be able to live up to its promises?

Why were we surprised? Given the history of voting machine malfunctions in jurisdictions across the United States, what happened in Chicago and Cook County was inevitable . Computer "glitches, bugs and anomalies" don't just happen. They're not the result of some cruel agency of fate. Computers are designed, built programmed and operated by humans – and humans make errors. Because computers are designed to repeat processes over and over – the same way every time – if they produce a bad result this time, unless something changes – they will produce the same bad result next time.

Summary and Forward to the Analysis

Throughout the balance of this document, we will support our conclusions and show that what occurred on election day was the result of a confluence of events that had been building for nearly two years, beginning with the decision of the City and County to entertain proposals to replace the voting equipment which they had purchased in 1999 and had served voters and officials well in the elections of 2002 and 2004.

We will show that the procurement process was deeply flawed and that the City and County departed dramatically from their own Request for Proposal to accommodate the needs of a vendor that couldn't meet the specifications. We'll show that in this effort they were aided by a compliant and complaisant State Board of Elections that bent over backwards, violating its own rules and State Law in certifying equipment and systems they knew or should have known would fail.

We briefly discuss the Help America Vote Act of 2002 (HAVA) and its K Street origins, examining how legislation ostensibly designed to help America vote turned out to be more akin to "no voting machine company left behind." When it rained chad in Florida the pot of gold at the end that rainbow was made for election officials. What better way to buy the toys they wanted than with $3.9 billion in federal funds (more than 20 times the aggregate net worth of the entire voting machine industry) county clerks, registrars and commissions didn't have to explain to local voters? As an example of corporate pork, HAVA makes the infamous "bridge to nowhere" seem like a mere appetizer.

We devote the last quarter of the document to applying the lessons learned during the procurement process, planning for the election and the experiences of Early Voting and Primary Day. The Illinois Ballot Integrity Project provides a list of short-term actions which we believe will assist in improving the November 7th results, but we also caution that unless other, more far reaching actions, like those which we have outlined above, are taken which address the basic causes of electronic voting machine failures, that history is most likely to be repeated – on a larger scale with potentially more harmful results, not the least of which will be the continuing erosion of our citizens' confidence that their elected officials have either the ability or the willingness to provide honest, fair, accurate and transparent elections in Chicago and Cook County.

CHICAGO, COOK COUNTY AND THE PRIMARY ELECTION OF 2006

A. INTRODUCTION

This document presents an overview of the Chicago and Cook County Primary Election of March 21, 2006. It is very much a work in progress as we have yet to determine all the various malfunctions, electronic, mechanical and human that occurred, nor are we yet able to determine in what proportion each might have been a contributing factor towards the eventual result, a deeply flawed primary election.

In this document we will attempt to follow the events leading up to March 21st, examining the procurement process and how decisions were made to acquire an entirely new voting system from a new vendor with whom the City and County had no experience. We will also examine the role of the Illinois State Board of Elections which certifies voting equipment for use in the State of Illinois. The role of federal testing and certification will be dealt with briefly along with the import of the Help America Vote Act of 2002 (HAVA) and last year's extensive changes to the Illinois Election Code brought about by the passage of HB 1968 by the Illinois General Assembly.

We will study in some detail the actions of election officials in both the City and Cook County, their relationship to the purchasing process and how their offices and departments performed in the months prior to the election with respect to the recruitment and training of election judges and other staff associated with the election process. Not least of all, we'll attempt to highlight what the vendor, Sequoia Voting Systems could have done differently in performing their duties under the contracts with the City and County and how the voting system they supplied performed during the primary.

For those who have closely studied elections over the past decade, the problems that occurred on March 21st in Chicago and Cook County were no surprise. The shortage of equipment, number and scope of voting machine malfunctions, lack of voter information, poor preparation by election officials and inadequate training for the insufficient number of workers manning the polls, leading to a near-complete meltdown was, however, a shock. Election day and night confusion, missing results, delayed reporting and post-election finger-pointing in the press should serve as a wake-up call to Sequoia and election officials alike.

On April 7th, the Chicago City Council Joint Committees on Finance, Budget and Government Operations, Committee on Committees, Rules and Ethics held a hearing to receive testimony on "A proposed resolution to hold hearings regarding the events and problems that occurred during vote tabulation for the City of Chicago Primary Election held on March 21, 2006." After hearing testimony from Jack A. Blaine, president of Sequoia Voting Systems, Inc.. Langdon Neal, Chairman of the Chicago Board of Election Commissioners, and brief public comments, the hearing was recessed with no action having been taken on the resolution.

While the Committees appeared to show a great deal of interest in the corporate structure of Sequoia Voting Systems and its parent, Smartmatic Corporation, little new information was gleaned from Smartmatic/Sequoia president, Jack Blaine, who demonstrated an unusual unfamiliarity with his company. Throughout, Blaine professed to have little knowledge of Smartmatic's Board of Directors or principal investors or stockholders, even though he serves as president of Smartmatic as well as Sequoia. Blaine even professed ignorance of the price Smartmatic paid to acquire an 85% interest in Sequoia from De La Rue Cash Systems 13 months ago, stating only that it "was less than $20 million." It was widely reported in the financial press at the time that the purchase price was £8.3 million. (approximately $16.6 million). [1]

1 News Release, De La Rue PLC, March 9, 2005: "The total cash consideration comprises an immediate payment of £7.3m (US$14m), and a further payment of £1.0m (US$2m) due on 30 June 2006. Archived: http://ballot-integrity.org/docs/de_la_rue_3-9-2005.pdf

At issue was a disclosure affidavit which Sequoia had completed on August 3, 2005, as a part of the procurement process [2] The form, which requires the disclosure of officers and directors of the corporation and anyone having a more than 7-1/2 percent interest in the company is silent as to Smartmatic's majority interest in Sequoia. The affidavit, signed by then Sequoia president, Tracy Graham, lists only herself as president and "J. Blaine" as secretary. Blaine consistently deflected questions about the contract between Sequoia and the Chicago Board of Election Commissioners, suggesting that Howard Cramer, vice president of sales, was responsible. At one point Blaine appeared to disassociate himself from the contract (actually a number of separate agreements) by indicating that Cramer might have been the signatory. However, some of the documents, signed only eight months ago, which Blaine claims he did not know about or did not remember, bear what purports to be his signature, but do not disclose his title. [3]

To those who have followed the Sequoia-Smartmatic-Dutch-Netherlands Antilles-Venezuelan connection, this was old news, even though the committees thought they were on to something. This had been previously reported some months ago. [4] No new information came out of the committees' probing of this area. The Illinois Ballot Integrity Project had submitted extensive written testimony to the Committees prior to the hearing but that document was largely ignored as the focus was on the so-called "Venezuelan Connection. [5]

Of greater importance was the admission by Blaine that British and Venezuelan nationals had access to the City's "counting room" and provided "supervision" according to Alderman Burke and "support" in Blaine's words. Worrisome though this might be, the Council ignored a key question we'd like answered: Why are ordinary citizens of the U.S., Illinois and Chicago, voters who have a significant stake in the outcome of elections, barred from even observing the tabulation process? This question continues to go unanswered and is one that has vexed election activists for years. Attempting to view the process of seeing your vote counted will get the ordinary citizen rudely escorted out by City police or County sheriff's deputies, while foreigners have unfettered access.

Chairman Langdon Neal of the Chicago Board of Election Commissioners testified for about 45 minutes and was relatively candid about the Board's failure to exercise due diligence regarding Sequoia's ownership and acknowledged some of the problems that did occur and promised to take appropriate steps to prevent a recurrence. Election judges came in for significant criticism and that appeared to deflect the inquiry away from Sequoia's performance. Chairman Neal reiterated several of the issues addressed in the Eleven Point Program announced by the Board on March 27, 2006. [6] Other issues, such as why didn't the City and County combine efforts in designing, producing and implementing train-the-trainer materials, manuals, handbooks and procedures; were there an adequate number of trained technicians; and why weren't there enough machines available to replace those that malfunctioned, were left unasked. The County contract specifies that Sequoia was responsible for training-the-trainer, including materials, manuals, etc. See Section III, 6.4]

All aspects of the process need to be improved substantially and quickly – Chicago and Cook County voters will go to the polls on November 7th. Early voting starts in October, barely more than six months from now. The Illinois Ballot Integrity Project would urge this Committee to ask some of those tough questions of Sequoia and our election officials, both local and state. The Illinois Ballot Integrity Project members served as election judges, pollwatchers and observers throughout training, Early Voting and Election Day. We also actively participated in the certification discussion throughout the fall and winter. Following are the results of our research and investigation, some conclusions we have been able to draw and some suggested actions that would improve the election process.

2 A copy of the Affidavit is archived here: www.ballot-integrity.org/docs/sequoia_affidavit01.pdf)

3 For an example: www.ballot-integrity.org/docs/Blaine_01.pdf)

4 "Twists and Turns – Who Owns Sequoia" by Robert Wilson, VoteTrustUSA.org, February 13, 2006, www.votetrustusa.org/index.php?option=com_content&task=view&id=919&Itemid=51

5 http://www.ballot-integrity.org/docs/Testimony_Apr-7-2006.pdf

6 "Chicago Announces Program For Ballot Improvements" – March 27, 2006 http://chicagoelections.com/BallotImprovements.htm

B. HOW THE PROCUREMENT PROCESS WENT ASTRAY

The seeds of the disaster which overcame Chicago and Cook County were sown in June, 2004, when the Chicago Board of Election Commissioners and the Cook County Clerk's Office combined to use the purchasing power of the State's two largest election jurisdictions, representing nearly 45% of Illinois voters to issue a request for proposal (RFP) for election voting equipment and systems for use in the 2006 primary elections.

1. Cook County and the City of Chicago Buy an Election System

Following the culmination of the proposal and bid process, the City and County chose to purchase some $50.2 million in voting systems from Sequoia Voting Systems, Inc. of Oakland, California. More than half of that amount, $25.5 million in taxpayer dollars financed largely from federal grants under the Help America Vote Act (HAVA), went toward the purchase of about 5,600 Sequoia Optech Insight precinct optical scanners. The balance went toward the purchase of nearly 6,000 Sequoia AVC Edge DRE (touch-screen) voting terminals, central ballot tabulators, election management software, disability kits, servers, workstations and other equipment and implementation costs. The touch-screens themselves, with their voting card activators, head phones and audio devices cost about $21 million.

But was this all necessary? Are the taxpayers getting their money's worth? In an article. "No more chads: City gears up for punch-free primary" which appeared on February 11, 2006 in the *Chicago Tribune*, staff writer, John McCormick, writes: "The new equipment will replace the notorious punch-card ballot--and its hanging, dimpled and pregnant chads. Voters in Chicago used the paper ballots since 1982, while those in suburban Cook County had punched choices since 1976."

He goes on to say, "The experience with punch-card ballots was less than stellar here and elsewhere. More than 120,000 Cook County voters in 2000 failed to register a choice for president or rendered their choice unusable by piercing holes next to names of two or more candidates." McCormick leaves one with the impression that Chicago and Cook County were using old, out-moded punch-card systems from 1976 and 1982 which he describes as "notorious," failing to give voters a '"second chance."

However, what McCormick fails to mention is that the City and County purchased the PBC-2100 Precinct Ballot Counter recently in 1999, from Election Systems & Software (ES&S), at a cost of nearly $9 million, specifically in preparation for the 2000 presidential election.

The November, 2000, problem was finally traced by the Illinois Institute of Technology (ITT) to a faulty template mold. Lance Gough, executive director of the Chicago Board of Election Commissioners said on June 3, 2005, "The Board ordered the remanufacture of all the templates, which was completed by the manufacturer at no cost to the City. IIT retested the new templates to ensure that they met the exacting specifications, and tens of thousand of punches were performed to ensure accuracy. These templates have been utilized successfully during the past four elections and have dramatically reduced the number of incomplete ballot punches." [7]

While the faulty mold may have contributed to the unusually high fall-off, the real reason the system under-performed was that the technology to detect overvotes and undervotes was available but simply wasn't turned on! Gough blamed the Illinois State Legislature for failing to pass appropriate legislation that would have allowed City and County election officials to implement the undervote and overvote features of the PBC-2100. According to Gough, " . . . the ballot screening enhancements should have been fully operational for the 2000 Presidential election, but the Illinois state legislature failed to act on several legislative attempts to modify the election code so that ballots could be screened through the PBC-2100. Following the 2000 election fiasco, the City and the County joined in the lawsuit that resulted in a Circuit Court Order allowing for the use of the voter protection features. These ballot screening procedures have been in place since, and have significantly improved voter accuracy and voter confidence." [8]

7 Statement By Lance Gough, Executive Director, Board Of Election Commissioners For The City Of Chicago, June 3, 2005, page 2 – June 3, 2005.

8 *Ibid*, page 3

In its June, 2004 Request for Proposal (RFP) for new voting technology, Chicago and Cook County said, "Unique among users of the PBC-2100, the Jurisdictions [Chicago and Cook County] use a system that scans a ballot for overvotes and undervotes, giving voters a "second chance" to insure their ballot reflects their intentions." [9]

Further, they stated in the specifications, "Notification of undervote. Any proposed system must include a mechanism for alerting a voter that he or she has failed to cast a vote for one or more offices or propositions before the vote is finally cast, and to provide an opportunity to correct the undervote." (Specification 3.5 – June, 2004) [10]

In fact, the undervote detection capability was so prized by Chicago and Cook County that they asked Sequoia to develop specifications for a "blended" system by which Chicago would continue to use the PBC-2100 to read ballots, and Sequoia proposed to reprogram the firmware for the PBC-2100 to accept the AVC Edge cartridges and combine the results, thus eliminating the need for the Optech Insight. As Sequoia's vice president of sales, Howard Cramer, wrote to Lance Gough on March 7, 2005: " . . . it seems clear that both jurisdictions have been pleased with the functionality of the PBC-2100, including the precinct ballot tally . . . and the undervote and overervote warnings incorporated into the system." [11]

In its response to the RFP, Cramer goes on to say, ". . . we would also welcome the opportunity to work with you on modifications to the PBC 2100 that would permit you to integrate that equipment with our AVC Edge touch screens equipped with VeriVote printers." The letter includes four pages of flow charts that describe two alternative blended systems while Cramer discusses reprogramming the PBC-2100 fimware (operating system) to accept input from the touch screens and interface with the company's tabulation software. In his cover e-mail to the letter, Cramer says, "The blended system concept that has really caught fire here is the use of the PBC 2100 to read the Edge cartridges. **This seems like the simplest and most cost effective way to accomplish our goals with the least procedural impact on the pollworkers."** (emphasis added) [12]

Any system should allow for the casting of ballots with intentional undervotes (City and County voters tend to ignore retention of judges, for example). However, the Sequoia Optech Insight precinct scanner doesn't have undervote screening capabilities and can't give the voter a warning for that "second chance" that seemed so important in the RFP. While it's certainly true that a paper ballot is easier to review than a punch card, it's still the case that the equipment doesn't help by warning the voter in the case of an undervote.. This means that the Insight optical scanner doesn't meet the RFP specifications and represents a giant step backwards from the punch-card system it's replacing which did have that capability and which Chicago and Cook County wanted to keep.

More importantly, the Sequoia Optech Insight precinct scanner does not comply with 2002 Voting Systems Standards/Guidelines which are given effect by Section 202(e) of HAVA. Specifically, Volume I, Section 2, "Functional Capabilities" provides in Section 2.4.3.2.2, "In addition to the above requirements, all paper-based precinct count systems shall:

(a) Provide feedback to the voter that identifies specific contests or ballot issues for which an overvote or undervote is detected;

(b) Allow the voter, at the voter's choice, to vote a new ballot or submit the ballot 'as is' without correction; and

(c) Allow an authorized election official to turn off the capabilities defined in 'a' and 'b' above."

Sequoia Optech Insight precinct scanner does not have the capability of turning the function on or off as in paragraph (c), since it doesn't comply with paragraph (a) and therefore, in its current configuration, the device cannot comply with 2002 HAVA standards.

[9] Joint RFP Cook County Clerk & Chicago Board of Election Commissioners, June, 2004, page 1

[10] *Ibid*, page 3

[11] Howard Cramer to Lance Gough – Letter, March 7, 2005, Sequoia RFP Response, Appendix B, 0525

[12] Howard Cramer to Lance Gough, e-mail, March 7, 2005, Sequoia RFP Response, Appendix B, 0524

This becomes even more important when viewed in the context of the contracts of Chicago and Cook County which provide that all equipment delivered by Sequoia "Contract[or] (sic) warrants that any election equipment furnished pursuant to this Contract shall meet the requirements of HAVA."

The Insight fails City and County voters in yet another way: The Illinois Election Code mandates that ballots and instructions must be in English, Spanish and Chinese. Sequoia says in their response to the RFP that they can't have Spanish available for the March 21st primary (but will for the November elections). But, the Optech Insight has a two-line ASCII (computer code) display for errors and instructions – Chinese isn't an ASCII language, so it appears that you might never see an error message in Chinese on this device. [13]

Contrary to what many have been led to believe by the media and eager salespersons, the Help America Vote Act (HAVA) does not outlaw punch-card systems. In fact, if a punch card system can meet the U.S. Election Assistance Commission (EAC) standards, like Section 2.4.3.2.2, above, it's perfectly useable for non-disabled voters. The Voting System Standards (VSS) specifically mention "punch or mark fields used for vote response fields." [14] It may be worthwhile to quote the VSS definition of paper-based systems:

> "A Paper-Based Voting System, (referred to in the initial Standards as a Punchcard and Marksense [P&M] Voting System) records votes, counts votes, and produces a tabulation of the vote count from votes cast on paper cards or sheets. A punchcard voting system allows a voter to record votes by means of holes punched in designated voting response locations. A marksense voting system allows a voter to record votes by means of marks made by the voter directly on the ballot, usually in voting response locations. Additionally, a paper based system may record votes using other approaches whereby the voter's selections are indicated by marks made on a paper ballot by an electronic input device, as long as such an input device does not independently record, store, or tabulate the voters selections." [15]

While the idea of a "blended system" may have "caught fire" in Oakland, it certainly seems to have cooled-down in Chicago and Cook County. The final RFP from Sequoia as well as the contracts signed last summer don't require the undervote warning and "second chance" for the voter. We must assume that if the chief salesman for Sequoia was willing to propose a blended system, then it was both feasible and potentially HAVA compliant.

Also, Cook County Clerk, David Orr, has made no secret of his endorsement of touch-screen voting and his desire to implement touch-screens for all voters when funds become available. So what's the point of spending $25.5 million to replace the PBC-2100s with Optech Insights that you plan to discard as soon as more taxpayer dollars can be funneled into this project?

City and County voters ought to be asking their election officials some hard questions about what's going on here. Why election official spent a huge chunk of money on non-VSS-compliant optical scanners that don't warn of undervotes like the system they replaced did? Granted, according to computer experts we've consulted, it might have cost a couple of hundred thousand dollars to reprogram the PBC-2100, but the City and County would have saved $25 million that might be better spent on the next generation of technology that doesn't saddle voters with the proposed unreliable, insecure and inaccurate systems or perhaps on voter education or election judge recruiting and training.

2. A Brief Tour of the Help America Vote Act (HAVA)

In the wake of the 2000 presidential election "hanging chad, pregnant chad" and "butterfly ballot" entered the American lexicon. Media reports abounded with apparently befuddled Florida election judges holding up punch-card ballots to the light in an effort to discern voter intent. Continuing publicity, fueled by voting machine company PR flacks demanded an end to hanging chad through a federal effort to replace obsolete punch-card and lever voting machines.

13 Sequoia/Chicago Contract – Appendix C – Statement of Work – August 11, 2005

14 EAC Voting System Standards, Volume II, Section 2.9.4.2 – Paper Based Systems

15 *Ibid*, Volume 1, Section 1.5.29

While the Sunshine State's many outmoded punch-card systems received well-deserved criticism, two important points got lost in the clamor for "reform":

- Most of Florida's punch-card systems were more than 20 years old and had been poorly maintained as ever cost-conscious voters turned down multiple initiatives to replace old equipment.
- The most egregious election failures in Florida came, not from punch-card systems, but from the state's newly privatized and automated voter registration base that disenfranchised tens of thousands of voters and Volusia County's Diebold's (Global Election Systems) AccuVote-OS optical scanners that registered a negative 16,022 votes for Al Gore. Analysts have contended that before this error was caught the Volusia County results were included in the early state-wide totals and were responsible for the networks changing their call of Florida from Gore to Bush. [16]

Sensing an opportunity for an influx of taxpayer dollars, voting machine companies turned to K Street for help in getting access to the public trough. Diebold was by far the largest contributor to the effort, paying convicted influence peddler Jack Abramoff's (now former) firm, Greenburg Traurig, $275,000 in lobbying fees. Sequoia Voting Systems, much smaller than Diebold, chipped in with $100,000 paid to another Washington group for "public relations," a contribution of about $1,000 per employee. ES&S contributed lesser amounts, presumably because they have their own Senator, Chuck Hagel (R-NE). [17]

Representative Bob Ney (R-Ohio) was one of the architects of HAVA. Ney worked with Sen. Christopher Dodd (D-CT) and others to "reform" election procedures that had arisen from the controversial 2000 election, including hanging chad and butterfly ballots. However, when the issue of electronic voting machines arose, the HAVA architects glossed over security concerns raised by voting activists and focused instead on other issues, in particular making it easier for the blind and disabled to vote and mandating centralized registration databases. Ney is tied to further lobbying efforts by his home-state company as his former chief of staff, David DiStefano, collected a further $180,000 from Diebold. Thus was born the Help America Vote Act of 2002. [18]

The major accomplishment of voting machine industry lobbyists was the creation of a $3.9 billion pot of gold for companies like Diebold, Sequoia, Election Systems and Software (ES&S), Hart InterCivic and others. HAVA (some have called it the "Help Automation Vendors Act") also placed time constraints on the federal money, giving states access to the billions of tax dollars only if most the money was spent before January 1, 2006, thus insuring that it would benefit current members of the industry in moving as yet unsold inventory by stampeding state election officials into action in 2004 and 2005.

16 Internal Diebold memos (leaked in 2003) show that the company officials knew about the 16,022 Gore votes that were subtracted, and they still don't have an explanation for what happened. The memos show that Diebold knew of a problem with the Florida 2000 election - where a memory card inexplicably subtracted 16,022 votes from a total previously recorded for Vice President Al Gore.

Tampering was one of four possible causes Diebold couldn't rule out at the time, the memos show. A year later, Diebold's latest official position on Florida's Volusia County vote count still does not rule out tampering. "The problem precinct had two memory cards uploaded," wrote Diebold tech Tab Iredale in one of the memos circulating among Diebold employees. "There is always the possibility that 'the second memory card' came from an unauthorized source." The second memory card has never been located; no one knows where it came from, nor where it went. As reported by votersunite.org – archived here: http://ballot-integrity.org/docs/Diebold_News.pdf

17 Senator Hagel was chairman of the election company that counted 80% of Nebraska's votes in 1996, which later became ES&S. Hagel upset Ben Nelson in the race in which his company counted the votes.

18 Abramoff's and Greenburg Traurig's ties to Representative Ney are only starting to be revealed as a part of Abramoff's testimony to federal authorities. Much of the information regarding the cozy triangle of Ney, Abramoff and Diebold has not appeared in the mainstream press, but rather on Internet sites: "It's been a long trek since Nov. 2, 2004 -- now getting shorter**"** by Robert Lockwood Mills*, The Free Press,* January 11, 2006 and "The Soon-to-be-Indicted Rep. Bob Ney of Ohio's Connection To Electoral Fraud" – By Brad Friedman, BradBlog, January 10, 2006. http://www.bradblog.com/archives/00002261.htm and http://www.freepress.org/departments/display/20/2006/1702

Aided by willing advocates for the blind and disabled, the voting machine industry sales people soon hit the road, selling their solution, paperless Direct Electronic Recording (DRE) touch-screen machines. Salesman's puffery was in full bloom, hawking such voting devices as a panacea for the blind and disabled. Diebold won the affection and support of the National Federation of the Blind (NFB) with more than $1 million in contributions. The NFB [Not to be confused with the American Foundation for the Blind] through its National Federation of the Blind in Computer Science "division" specifically endorsed Diebold voting equipment over all others, even applauding features of the AccuVote-TSX that had been severely criticized by blind voters. [19]

For example, just how well the AccuVote-TSX works for voters with disabilities compared to other devices might be inferred from this article, "Spencer Lane Report on Voting Technology Accessibility," [20] On June 7, 2005, Lane visited the Annual Conference of the Florida State Association of Supervisors of Elections at which voting machines were on display. The only three being represented as handicapped-friendly models were the Diebold Accuvote TSX system, The ES&S Automark and the AccuPoll AVS1000.

Lane says, "The first machine we evaluated was the Diebold Accuvote TSX assisted by Wes Krivanek who, most generously, gave us several hours of his time, and later Mark Earley. Two machines were used. S/N 202010, contained Georgia software and a disabled voter interface. After several unsuccessful attempts to boot the system, the disabled interface was moved to the second machine, S/N 201267 which we were told was programmed with Florida Certified Software." [Does this sound suspiciously like a 50% failure rate?]

"Paton¹s [Lane's spouse] vote using the handicapped audio interface to outline the ballot through headphones took 31 minutes, much longer than I had thought it would.. The handicap interface was a "telephone keypad" style with 12 keys to be selected than pressed. To select the appropriate key number required sightless touch-counting of the keys to locate the correct one before it could be pressed. (Think of placing a call on a telephone in the dark)"

Another disadvantage pointed out was: "In the audio review of her ballot after it was cast on the Diebold TSX Touchscreen unit with Florida approved software, the synthesized voice says, "Your choice has been selected" without specifying just what that choice was. Without audible verification in her headset she had no way of knowing if the votes she cast were recorded correctly."

The Sequoia AVC Edge DRE (touch-screen) was not available for the Florida test, but in a product evaluation conducted by the American Foundation for the Blind (AFB), the Sequoia AVC Edge was rated third out of four systems tested and reviewed. [21]

One problem that has surfaced in the various tests and evaluations of electronic voting machines, including touch-screen devices is the conflating of accessibility for visually impaired or blind voters with those who are mobility impaired or have other physical disabilities. Often the blind community in their natural advocacy has attempted to speak for all disabled voters, confusing the issues of accessibility and privacy. Section 301(a) of HAVA is clear that an all voters with disabilities of any type should be considered in the effort to provide voting equipment that ensures privacy and independence. The U.S. Election Assistance Commission (EAC) made this clear in issuing an Advisory on Section 301 on July 20, 2005, which said in part:

"Compliance with Section 301(a)(3) requires that the voting system is accessible to persons with disabilities as defined by the Americans with Disabilities Act, including physical, visual, and cognitive disabilities, such that the disabled individual can privately and independently receive instruction, make selections, and cast a ballot."

19 Letter from Curtis Chung, president, NFBCS, to Mark Radke, vp marketing, Diebold, April 28, 2005.

20 Archived by Verified Voting Foundation http://www.verifiedvotingfoundation.org/article.php?id=6135

21 "Cast a Vote by Yourself: A Review of Accessible Voting Machines" – By Darren Burton and Mark Uslan, *AFB Access World*, November, 2002. http://www.afb.org/afbpress/pub.asp?docid=aw030603

Even though voting machine companies and election officials alike have touted DREs (touch-screens) as the answer to the requirements of Section 301, a popular misconception has arisen (we suggest this is deliberate) that DREs are the only way that such requirements can be met. However, in this same Advisory, the EAC says: [22]

"This advisory should not be read to preclude the innovation and use of accessible voting systems other than DREs for purposes of meeting this requirement."

In fact, the Illinois State Board of Elections on September 13, 2005, granted two-year interim certification to the AutoMARK, an assistive device that marks a standard paper ballot and does not record the voter's choices electronically. [23] The ballot is then read by an optical scanner in the manner of standard paper ballots used in the March 21st Primary. The AutoMARK was used successfully in McLean and Will Counties on March 21, 2006.

In summary, state and local officials throughout America rushed to take advantage of what they viewed as "free money" in order to use federal funds to acquire electronic voting machines for use in 2006. Already, such machines have proven to be unreliable and we'll undoubtedly have more reports of machine malfunctions and failures as the primary season unfolds and we move on to the General Election on November 7th. Failure to exercise due diligence in the purchase of such machines has been endemic. Cook County and the City of Chicago were no exception as the events of March 21st were to prove.

Before we move to a discussion of election system performance, however, it will be instructive to examine the role of the Illinois State Board of Elections and their handling of the certification process on behalf of the voters of Illinois, including of course certification of Sequoia voting system components.

3. The Illinois State Board of Elections Improperly Certifies Sequoia

The Illinois Election Code (10 ILCS/5) is administered by the State Board of Elections (SBOE), an eight-member body appointed by the Governor. Under the Code, the Board is charged with the certification of election systems equipment (10 ILCS 5/1A-1). The Board also administers the distribution of funds received under HAVA by depositing such funds in the Help Illinois Vote Fund (10 ILCS 5/1A-20). Section 24A-1 general provides for the use of electronic voting machines of all types as well as their certification. It further provides that no vendor may lease, sell or loan an optical scan machine to any election authority unless such machine shall be approved by the SBOE (10 ILCS 5/24B-16) nor any DRE (10 ILCS 5/24C-16). Similar provisions prohibit the purchase, lease or other use of such machines by any election authority without approval of the SBOE (10 ILCS 5/24B-3 and 5/24C-3).

Pursuant to its statutory authority, the Board met on September 19, 2005, to consider the interim certification of the "Sequoia AVC Edge Product." One might assume this terminology to refer to the Sequoia AVC Edge DRE with VeriVote printer, however, that is not certain.

The staff report of September 11, 2005 found a number of deficiencies:

- The summary screen showed undervoted contests in red while voted candidates were in black. However, on a multiple "vote for"; if the voter selected one candidate of the multiple choice option, the print was red. The candidate selected should have been in black. This was described by the testers as "confusing."

22 EAC Advisory 2005-004: How to determine if a voting system is compliant with Section 301(a) – a gap analysis between 2002 Voting System Standards and the requirements of Section 301(a)

23 Status of Certification Process – As of 12/30/2005 - Illinois State Board of Elections – http://www.elections.il.gov/Downloads/VotingInformation/PDF/VotingEquipCert.pdf [Interestingly enough, this document link has been changed to an older version – previously the Board has displayed the Status of Certification through February 10, 2006.]

- Of the five machines tested , two encountered paper jams, a failure rate of 40%, even though the VVPAT was not used during volume testing. Both jams required Sequoia to replace the printer. The report stated, "Changing paper rolls on this system would be too cumbersome for an election judge. Any jurisdiction using the system would need to supply extra paper trail machine attachments to the polling places."

- Two program cards were corrupted; the data on the screens was missing headings etc.

The staff evaluation of the disabled accessibility features of the AVC Edge are worth quoting at length:

> "Our staff also tested some of the accessibility features and found the audio and navigator board very hard to use and frustrating. In fact when a staffer (sic) talked to the National Institute of the Blind, its tester also expressed concerns with navigating through the ballot along with audio quality.
>
> We found the feature of the screen being blank while using the headset not always feasible or functional. The keypad and headset must be used together and the screen is always blank when they are used. What if you had partial vision and are hard of hearing? You would not have the option of looking at the screen and using the headset? You would have to choose one or the other.
>
> We understood that the feature for a visually impaired person was, as it should be, to protect the privacy of the voter since he/she would not want someone to see how they voted but, for some voters it would be easier for them to see the screen while voting and they obviously would prefer to see the screen while using the keypad. This feature needs to be optional for the voter. It is our understanding that this will take place in the next year.
>
> Another problem with the board/pad was that the same button for vote selecting also had another function in taking the voter in and out of the contests. The vote selection button should only have one function not dual. This must change." [24]

The report concludes:

> ". . . staff found the AVC Edge to tabulate accurately but does not have the best usability functions for the disabled community. It will be very important for the jurisdictions that use this system to provide ample instructions to disabled voters prior to an election. Many will need to practice on this system several times prior to an actual election." [25]

In addition to its own testing procedures, the Board relies heavily on the reports of so-called Independent Testing Authorities (ITAs) which are private firms which have done testing of voting machine equipment under direction of the National Association of State Election Directors (NASED). Whatever federal testing and certification as to HAVA or earlier Federal Election Commission (FEC) standards was done by the ITAs. In this case, the Sequoia AVC Edge report prepared by Wyle Laboratories had been received by the SBOE, but no staff member or member of the Board read the report prior to granting certification of the "Sequoia AVC Edge Product." [26]

The vague descriptions of voting machine components employed by the State Board or Elections which appear in the contracts of both the City and County with Sequoia Voting Systems is disconcerting at best. At worst, it prevents oversight of the regulatory process and enforcement of contract provisions through the legal process. The downside is that little information about what the Board has approved or precisely what election officials have purchased effectively removes citizens from the process by promoting opacity rather than transparency.

24 Dianne Felts, Director of Voting Systems and Standards (VOSS) to Dan White, Executive Director, SBOE, September 11, 2005.

25 Ibid.

26 Transcript of SBOE meeting of September 19, 2005, page 27

Further, this practice, while not unique to Illinois, stands in stark contrast to other states and jurisdictions where information of this type is readily available. [27] This veil of secrecy over the certification process is actively defended by the SBOE which refuses to divulge information and documents, even going so far as to violate the Illinois Election Code in doing so. [28] For example, the Board has repeatedly refused to release the Wyle Labs report on the Sequoia AVC Edge or the model number of the machines certified, or the firmware and software versions of Sequoia and other equipment despite several requests under the Illinois Freedom of Information Act (FOIA) despite explicit requirements in the Illinois Election code that all such data are to be made public. [29]

Even more interesting is the Board's removal from its site a list of certified voting machine components that was posted in mid-February after Board actions on January 27, February 6 and February 10, 2006, certifying various components of systems submitted by Diebold, Sequoia and Hart InterCivic. The Board has substituted an earlier version of this report which does not reflect any of the above actions taken since December 30, 2005, nor does the current version reflect any of the last-minute certifications granted Sequoia on February 27, 2006, nor does it reflect the ill-fated attempt of Diebold to circumvent the requirements of HAVA by attempting to have the Board "waive" the 2002 requirements, an effort that was cut short on advice from the Department of Justice that the SBOE did not have the authority to waive requirements of Federal Law. [30]

In addition to the staff report enumerating the shortcomings of the Sequoia AVC Edge with respect to compliance with HAVA Section 301(a) and its ability to accommodate visually-impaired or non-sighted voters, we believe the Board should have taken into consideration the review of the Sequoia features prepared by Kelly Pierce of the Cook County State's Attorney's Office which provides a more comprehensive evaluation, including 37 specific recommendations for changes to the AVC Edge to make it more accessible for visually-impaired or non-sighted voters. [31]

With the exception of a reference to hearing-impaired voters within the context of visually-impaired voters, the SBOE staff report is silent as to whether-or-not the testing performed by the Voting Systems and Standards (VOSS) department of the SBOE performed any other tests for Section 301(a) compliance with respect the Sequoia AVC Edge DRE. Nor is there any reference to EAC Advisory 2005-004, "How to determine if a voting system is compliant with Section 301(a)" previously discussed (see page 9). Specifically, we refer to the EAC's interpretation of Section 301(a)(3) which states, "Compliance with Section 301(a)(3) requires that the voting system is accessible to persons with disabilities as defined by the Americans with Disabilities Act, including physical, visual, and cognitive disabilities . . ." [32] The AVC Edge as tested and configured for use in Chicago and Cook County does not meet these standards.

For example, the SBOE staff tested the audio interface, but apparently no testing was done with any other assistive devices for which the AVC Edge might be equipped, such as sip-puff. While the sip-puff feature which allows access for severely physically disabled voters has been made available in other jurisdictions, it was not tested in Illinois, nor were the AVC Edge DREs used in Chicago and Cook County during Early Voting and on March 21, 2006, so equipped.

27 Compare the website: California Secretary of State, http://www.ss.ca.gov/elections/elections_vs.htm where information regarding ITA reports, staff reports, technical reports, etc. are easy accessed.

28 "All test plans, test results, documentation, and other records used to plan, execute, and record the results of the testing and verification, including all material prepared or used by independent testing authorities or other third parties, shall be made part of the public record and shall be freely available via the Internet and paper copy to anyone." IL Election Code, Section 24C-2 (10 ILCS 5/24C-2)

29 Both the Board's failure to comply with the Code and refusal to respond to IBIP's FOIA are currently under review by the office of the Illinois Attorney General.

30 State Board of Elections - Minutes - February 21 and 24, 2006, SBOE website: http://www.elections.il.gov/AboutTheBoard/MeetingMinutes.aspx

31 "Evaluation of Audio Interface - Sequoia Voting Systems AVC Edge" Kelly Pierce Cook County State's Attorney's Office, June 30, 2005. Archived: http://ballot-integrity.org/docs/KellyPierceReviewofSequoia-2005.pdf

32 *Ibid* – Note 22

One final consideration with respect to Section 301(a)(3) compliance requires mentioning and that is accessibility for those voters who require wheelchairs. Although the AVC Edge design incorporates a "wide-leg" design, almost all voters using wheelchairs are unable to reach the top displays on the touch-screen. While theoretically, one might consider using the keypad provided for non-sighted voters, this option is precluded because once the keypad is connected, the screen goes blank. Therefore, those sighted voters using wheelchairs would be forced to use the audio-prompt system which requires a substantially greater amount of time and would be both inconvenient and confusing.

We have provided a significant commentary on the Section 301(a) compliance features of the AVC Edge because it's this aspect that provides voting machine manufacturers and election officials with the strongest rationale for selling and purchasing these machines. Approximately $21 million are to be spent by the City and County for the purchase of DRE equipment. We must ask, was that equipment properly tested and certified by the State Board of Elections for the primary purpose for which it was intended? The absence of such testing and the SBOE (or the City or County) failing to require sip-puff features suggest that it was not. One might even speculate that actual compliance was less on the mind of the Illinois State Board of Elections than placing responsibility for compliance elsewhere:

> "I want somebody to say today they're taking that responsibility [for disabled accessibility] and that it's not ours, because I don't want us being liable and that [disabled] community, you know, blaming us for allowing this to be out there. And you know, as I said, I'm just wanting to protect this Board from some things that we can't necessarily control that you [Sequoia] will be. [32]

The Illinois Election Code mandates a verifiable paper record of the voter's choices: "This permanent paper record shall be printed in a clear, readily readable format that can be easily reviewed by the voter for completeness and accuracy." [33] This is the Verified Paper Audit Trail (VVPAT). In a addition to the voter's choices being printed in human language format, the paper record printed by the Sequoia AVC Edge VeriVote printer includes a barcode which purports to represent the voter's choices and is used for tallying those choices in the mandatory 5% redundant audit required by the Code. [34]

The contract between Cook County and Sequoia provides, "The System shall have a scanner which shall be able to read the bar code printed on the [DRE] paper record . . . and tally those votes by candidate and proposition." [35] Obviously, none of us can "easily review a barcode for completeness and accuracy" especially in the confines of a voting booth.

Further, the program module that produces the barcode is not the same one that prints the "voter-verifiable record." Thus, there's no true relationship between what's printed on the paper roll and the invisible electronic ballot that's recorded by the machine. Thus, the barcode cannot be assumed to unfailingly reflect the human-readable, voter-verified data on the ballot.

The VeriVote printer also uses a continuous roll of thermal paper to print the so-called voter-verified paper record. While there have been improvements in thermal paper from the type used in the past (remember that faded FAX you couldn't read), the thermal paper used in the VeriVote printer doesn't reach the level of the newest technology, and even if it did, might still not constitute a "permanent record." We therefor conclude that the VVPAT record produced by the Sequoia AVC Edge and VeriVote printer is not compliant with the provisions of the Illinois Election Code.

Despite two out of five DREs experiencing paper jams, significant shortcomings in the audio-assist component raised by both the disabled community and its own Director of Voting Systems Standards, having had no reference to the ITA report, non-compliance with Section 301(a)(3) and questions about compliance with Section 24C-2 of the Illinois Election Code, the Board granted interim certification to the "Sequoia AVC Edge Product" by unanimous vote. Due diligence or rush to judgment?

32 Chairman Jesse R. Smart, SBOE, September 19, 2005- Meeting transcript, page 18

33 Section 24C-2 (10 ILCS 5/24C-2)

34 Section 24C-15 (10 ILCS 5/24C-15)

35 Cook County/Sequoia Contract - Part III, Sec. 2.27

Some time after noon on February 8, 2006, less than 48 hours before the February 10th meeting, the State Board caused, at its website a notice to be posted, entitled "PUBLIC NOTICE OF SPECIAL BOARD MEETING," which notice stated in pertinent part:

> The Illinois State Board of Elections will conduct a special Board meeting on Friday, February 10, 2006.

Subsequently, the State Board also posted a further notice, - AMENDED -PUBLIC NOTICE OF SPECIAL BOARD MEETING," which stated in pertinent part:

> The Board will reconvene as the State Board of Elections to consider any pending withdrawals and consider certification of the Sequoia's 400-C Central Count Scan, Insight Scan, HAAT, AVC Edge 5.0.23 modification and WinEDS 3.1.0.12.

As a public body, the Illinois State Board of Elections is subject to the provisions of the Illinois Open Meetings Act, (5 ILCS 120/1, *et seq*.) and the Illinois Election Code (10 ILCS 5/1, *et seq*.) The State Board of Elections is clearly a "public body" within the meaning of the act as set forth in ¶ 1.02 [36]

It is also abundantly clear that the statute is applicable to the meetings, including special meetings of the Board at set forth in § 1.02, which defines "meeting" as "any gathering of a majority of a quorum of the members of a public body held for the purpose of discussing public business." Forty-eight hour notice of such meetings is provided in § 2.02(a) of the Act. This notice requirement was not met with respect to the meetings of either February 6 or 10, 2006.

At the meeting of February 10, 2006, the SBOE granted interim certification to Sequoia's 400-C Central Count Scan, Insight Optical Scan, HAAT, a modification to the AVC Edge (5.0.23) and a version of WinEDS (3.1.0.12). This certification was granted at a meeting which clearly violated the Illinois Open Meetings Act. This example is set forth merely to demonstrate the lengths to which the Board was willing to go to certify Sequoia and other electronic voting equipment. Why was this so important? Simply because the Board had to act before February 15, 2006 in order not to jeopardize the contracts between the City, County and Sequoia. Each contract provided an "escape clause" for both parties, by which they mutually agreed that if SBOE certification was not granted by February 15th, the parties mutually agreed that it was too late to implement such equipment and systems in the March Primary. [37]

At this point, we have relatively little documentation on the approval process for the Insight-OS optical scanner or the C-400 central scanning device other than that the latter was tested on February 7, 2006, in the offices of the Chicago Board of Election Commissioners. Of the two C-400s available, one failed when the first deck of simulated ballots was processed and the test proceeded with the other unit. Never-the-less, the Board approved the C-400 for certification.

The Insight-OS optical scanner was also approved, despite the fact that it is not compliant with the Election Assistance Commission's 2002 Voting Systems Standards as discussed previously. (See pg. 5)

At the present time, the role of 2002 EAC Voting Systems Standards (VSS) with respect to granting of certification by the Illinois State Board of Elections is unclear. The Board says that it has "adopted the 2002 HAVA standards." The action was taken at the Board's regular meeting on November 17, 2003. [38] The Board has used these standards in the testing of voting equipment, specifically with regard to error rates as the 2002 standards impose lower error rates than the previous 1990 standards. It is not clear, however, that the Board has applied the functional standards to the certification of voting equipment. If

36 "Public body" includes all legislative, executive, administrative or advisory bodies of the State, counties, townships, cities, villages, incorporated towns, school districts and all other municipal corporations, boards, bureaus, committees or commissions of this State, and any subsidiary bodies of any of the foregoing including but not limited to committees and subcommittees which are supported in whole or in part by tax revenue . . ."

37 Sequoia/County contract – Part III, Special Conditions, Section 1. Certification

38 Board Minutes: http://www.elections.il.gov/Downloads/AboutTheBoard/PDF/11_17_03Minutes.pdf

that were the case, then the Sequoia Insight-OS in-precinct optical scanner in not compliant with Volume I, Section 2, “Functional Capabilities” provides in Section 2.4.3.2.2 (c), “In addition to the above requirements, all paper-based precinct count systems shall: Provide feedback to the voter that identifies specific contests or ballot issues for which an overvote or undervote is detected.

If in fact the Board adopted the 2002 VSS in their entirety, then the Board improperly granted interim certification to the Sequoia Insight-OS optical scanner and the C-400 central absentee ballot tabulator on February 10, 2006. It follows then that the City and County purchased $21.5 million of improperly certified optical scan equipment and accessories that were not compliant with 2002 Voting System Standards as required by the State Board of Elections’ own rules for certification. [39] The day after interim certification was granted to the Sequoia components, Dianne Felts was quoted as saying, "Shortcuts are being taken that shouldn't be taken," she wasn’t kidding! [40]

In addition, the approval of the Board in granting certification to a voting system that doesn’t detect and warn of undervotes and overvotes for Cook County voters while other systems in other counties in Illinois provide such protection violates Cook County voters’ rights. Recently, the United States Court of Appeals for the Sixth Circuit found that Plaintiffs were deprived of their rights under the Equal Protection Clause of the Constitution and the Voting Rights Act when they used voting machines without undervote and overvote protection when those in other Ohio counties could. [40a]

The State Board of Elections has become a rubber stamp for local election officials who, anxious to get their "share" of the $100 million pot of federal tax dollars, want to pass the money on to vendors who are providing insecure, unreliable and inaccurate electronic voting machines. Local officials have demanded touch-screens, citing HAVA (incorrectly) as justification, and the Board has caved in to the pressure. The Board has failed to exercise due diligence in the certification process, a duty that they owe to Illinois voters. One of our most precious rights: free, fair, honest and transparent elections is being bartered away to private corporations in the name of expediency.

In a classic demonstration of "haste makes waste," the Board has ignored the hundreds of documented reports of electronic voting system failures, including the U.S. Government General Accountability Office (GAO) report highly critical of Electronic voting machines and systems released on October 21, 2005. The report, entitled "Federal Efforts to Improve Security and Reliability of Electronic Voting Systems Are Under Way, but Key Activities Need to Be Completed" (GAO-05-956) was undertaken by the GAO at the request of members of the House Government Reform Committee, House Judiciary Committee and the House Science Committee.

Ranking Member of the Government Reform Committee, Henry A. Waxman (D-CA), said, "The GAO report indicates that we need to get serious and act quickly to improve the security of electronic voting machines. The report makes clear that there is a lack of transparency and accountability in electronic voting systems - from the day that contracts are signed with manufacturers to the counting of electronic votes on Election Day. State and local officials are spending a great deal of money on machines without concrete proof that they are secure and reliable. American voters deserve better." [41]

C. POOR PLANNING ENSURES AN ELECTION DISASTER

1. Lack of Election Judge/Pollworker Training Preparation

Prior to the primary election, both David Orr and Langdon Neal were quoted in the press as to the difficulties in implementing two new voting systems in the City and County. While it may not have been necessary to implement two new systems, certainly if they did, why weren’t election officials better prepared to train City and County workers, election judges and pollworkers?

39 City/Sequoia Contract – Appendix D and County/Sequoia Contract – Schedule F2

40 "No more chads: City gears up for punch-free primary" - By John McCormick, *Chicago Tribune*, February 11, 2006.

40a *Stewart v. Blackwell* [C.A.6 (Ohio)], 2006 Fed.App. 0143P. April 21, 2006.

41 Joint Congressional News Release, Washington DC -October 21, 2005

An attempt to deflect some of the blame was seen in a post election article which said:

> "The supplier's voting system has had technical glitches elsewhere, ranging from hard-drive crashes in Florida to a single precinct holding up Nevada's primary election results."
>
> "On Feb. 10, the Illinois State Board of Elections approved the equipment anyway, as concerns mounted that Cook County would not be able to implement an even more complicated and untested version of the system within six weeks."
>
> "'It was not helpful that the certification process took so long to get done,' said Paul DeGregorio, chairman of the federal Election Assistance Commission, formed after the controversial 2000 presidential election to promote new voting technology." "'You want more time to introduce this equipment to your own staff and to the poll workers,' he said." [42]

This explanation, however, ignores the fact that the delivery schedule called for the first optical scanners to begin arriving in late October. A call to the Cook County Clerk's office on October 27, 2005 confirmed that the first deliveries had been made. [43] According to the contract implementation schedule, Sequoia was to submit a final pollworker training plan to the City and County on September 19, 2005. Sign-off on the voter outreach program was scheduled for October 13, 2005. If program schedules were met along with hardware delivery, as it appears they were, then the City and County should have been able to begin drafting of election judge manuals, training of key personnel and "train the trainer" materials in late October with actual equipment on hand later in the fourth quarter of 2005. Inasmuch as the City and County were willing to take delivery of the equipment and make the initial payments of over $20 million [44] to Sequoia "on the come," they certainly could have done the same with training. State Board of Elections approval didn't seem to matter much in the fall of 2005, when delivery of the machines was taking place along with the training modules.

Further, the Sequoia AVC Edge DRE (touch-screen) was given two-year interim certification by the Illinois State Board of Elections (SBOE) at its regular meeting on September 19, 2005, five and one-half months before the implementation of early voting on February 27, 2006. The late certification excuse certainly doesn't apply to this particular component of the new voting system. [45] In addition, it seems unclear as to why delay in Board's certification process occurred, though as we have noted above, it did not appear to delay the delivery process. What's more, the first several hundred units delivered, beginning in late October, 2005, were not the AVC Edge touch-screens but rather the Sequoia Insight optical scanners. According to the delivery schedules for the City and Cook County, all major components (the AVC Edge DRE, Insight optical scanner, audio units and Card Activators) were scheduled to be delivered in training-sufficient quantities by the week of December 5, 2005 [46]

2. Election Judge/Pollworker Manuals/Handbooks Aren't Consistent

Inasmuch as the City and County were using identical equipment and preparing to conduct elections under provisions of the Illinois Election Code which had been substantially revised by HB 1968 in mid-2005, we question why election officials in these two jurisdictions did not choose to engage in a fully collaborative effort to develop forms, procedures, training materials and election judge manuals. It would appear that the decision to develop separate materials - primarily forms and manuals resulted in duplicative efforts and somewhat different procedures and instructions for election judges and pollworkers. A few examples should suffice to demonstrate this point:

42 "Poll workers needed voting system training," By James Janega, John McCormick and David Kidwell, *Chicago Tribune*, March 22, 2006

43 We spoke with a person who identified herself as Kelly Quinn

44 Sequoia contracts with the City of Chicago and Cook County, Appendix H, payment schedule.

45 See minutes of the Illinois State Board of Elections for September 19, 2005 as posted on the Board's website: http://www.elections.il.gov/Downloads/AboutTheBoard/PDF/9_19_05Minutes.pdf

46 See Contracts between Sequoia and Cook County/Chicago, Delivery Schedule, Schedule D, page 1

- The City chose to print the handbook in "landscape" (11 X 8.5) format rather than the standard "portrait" (8.5 X 11) format, necessarily restricting the amount of information displayed on each page. Our experience, in more than three decades of producing procedures and training materials has shown that the standard portrait orientation is more familiar to readers and is easier to read and handle by the user.

- The City handbook often uses relatively small type to overcome the limitations of the landscape format, as well as an apparent effort to reduce printing costs by reducing the number of pages. This decision that probably contributed to the lack of preparation of election judges and increased the difficulty of referring to the handbook during the set-up, voting and closing times when procedures were unclear or trouble-shooting was required.

Why were different election judge manuals needed? The answer is that certain methods of deploying equipment and form design and numbering contributed to the need for separate manuals:

- Both the City and County chose to consolidate the delivery of election equipment and supplies in a large carrier, called the Voting Supply Carrier (VSC) in the County and the Election Supply Carrier (ESC) in the City. The design and purpose of these large metal cabinets was similar with the key difference that the County chose to integrate a sliding metal shelf to mount the optical scanner on the "Big Blue Box," The key difference was the City chose to mount it separately on top of a fold-out cardboard ballot box. [47] The County design was markedly superior and required less set-up time and provided a more stable platform. [48]

- While virtually the same forms are used, with often the same or similar nomenclature and content (Application for Ballot; consolidated voter's affidavit, universal voter's affidavit) forms have different numbers and colors for City and County use. For example, the Application for Ballot is form 14 in the City [49] and form 300 in the County, [50] yet these forms contain almost identical information (albeit in different layouts) and are handled procedurally in a similar manner.

We suggest that substantial economies of scale could have been achieved had the City and County worked together to consolidate the design of equipment deployment and forms:

- The ESC and VSC could have been identical and the City and County could have purchased the units together under one RFP.

- Forms could have been designed to have the same content and numbering and could have been printed together at a substantial cost savings.

- The City Judge's Handbook and County Judge's Manual could have then been combined into a single publication.

- Development of training procedures and content could have been consolidated and further savings could have been realized through the development of cost-intensive materials such as videos and other audio/visual content.

In addition to the obvious cost savings, the timeline for training module preparation could have been substantially shortened and the effectiveness of training increased. The failure of the City and County to adopt this approach was a fatal flaw in the planning process.

47 See City Handbook, page 17.

48 See County Manual, page 26.

49 See City Handbook, page 35

50 See County Manual, page 59

It appears that the Chicago Judge's Handbook had not been completed by the time that many election judges were trained. Our information is that procedures for consolidation and printing of additional official results tapes were mailed to judges after training, but prior to election day.

3. Lack of Training and Sub-standard Training for Election Judges/Pollworkers

Based on the personal experiences of members of the Illinois Ballot Integrity Project who served as election judges in both the City and County as well as reports received from other individuals, we have compiled a short list of problems that were associated with the training of judges and pollworkers:

Election Judges and pollworkers in both the City and County should have been required to attend training sessions prior to election day. Given two new voting systems, which no judge or pollworker had ever encountered before, this appears to have been an essential requirement that was not met. Media and other reports immediately after the election indicated:

- At least 4,000 of the City's 14,000 election judges (almost a third) received no training whatsoever on the new election equipment or procedures. [51]

- None of the 9,600 election judges in suburban Cook County received any hands-on training with the optical scanners used to process the majority of votes in the County. [52]

- Training classes were too large, in excess of 200 attendees in some instances. This created breakout sessions where equipment was demonstrated to "small" groups of 30 or more, preventing many judges and pollworkers from receiving any hands-on training on the touch-screen devices or the card activators/consolidators.

- Some training sessions were observed where "trainers" were unfamiliar with either equipment or procedures. In some training sessions "trainers" merely read from photocopied pages of the manual and were unable to offer any information other than by rote repetition.

- Training materials were often not available. When one trainer was instructing judges to put certain materials "in this envelope," the envelope could not be found.

- Training sessions were too short to allow full participation by trainees.

- Even when judges attended multiple sessions, for example the additional session required for technical judges, training was duplicative - the additional three-hour session was largely wasted.

- Training on forms was virtually non-existent. Much of the training revolved around setting up the touch-screen devices and activating voter cards. Training relative to processing of early and absentee ballots was minimal at best.

- Little or no simulation of the voting process was done. As a consequence, election judges complained that the reality of election day was very unlike the training that took place and many felt they were woefully unprepared. [53]

In addition to the apparent failures of the City and County to provide adequate training for staff and pollworkers, we suggest that there's ample reason to fully investigate Sequoia's role in the failure of

51 "Poll workers needed voting system training" By James Janega, John McCormick and David Kidwell *Tribune* staff reporters, *Chicago Tribune*, March 22, 2006.

52 *Ibid*

53 "New machines, poor training slowed count, Precincts uncounted even after Wednesday," By James Janega, John McCormick and David Kidwell, *Tribune* staff reporters. Tribune staff reporters Josh Noel, Carlos Sadovi, Courtney Flynn, Charles Sheehan, Hal Dardick, Tonya Maxwell, David Mendell, *Chicago Tribune,* March 23, 2006.

staff and election judges to be prepared to deal with new equipment and procedures. The vendor was explicit in promising the City and County full support, "Sequoia will provide Edge® and Insight® voting systems training to City staff. The training programs provided by Sequoia shall include complete, thorough and extensive training for authorized staff in the administration of the system as noted in the table below." [54] (The table includes 12 sessions indicating approximately 27 days of training)

Sequoia lists 13 separate training modules for which they will be responsible including, Edge® Operations and General Maintenance, Technician Training, Card Activator Operations, Rover Technician Training, and perhaps most importantly:

> Pollworker Train the Trainer – Course participants will learn how to effectively present and facilitate pollworker training sessions, including Edge® and Insight® voting unit setup, Card Activator setup processing votes, closing polls, precinct transmission on Card Activator, voting unit disassembly, and troubleshooting. [55]

Sequoia also had this to say about their training offerings:

> Strong and comprehensive training is essential in a successful voting system implementation . . . We will assist in the development of training materials and will train the trainers. . . In addition, we provide standard pollworker lesson plans and a pollworker manual for customization by the jurisdiction. We also assist with designing needed training materials, forms, quick-step instructions and lists as well as pollworker video films. Our pollworker class approach, employing hands-on training and an effective pollworker/training ratio is (sic) proven successful. Pollworkers come away knowledgeable, confident and comfortable. [56]

And this training didn't come without a significant cost to the City and County. Each has paid Sequoia $50,000 for staff training and another $50,000 for pollworker training, a total of $200,000. [57]

In summary, it has been said many times that election judges and pollworkers can "make or break" an election. Nowhere has that statement been more dramatically proven than in the City of Chicago and Cook County on March 21, 2006. Election officials in the City and County failed to adequately plan the process of deployment of equipment and training of judges and pollworkers. This failure directly contributed to the manifest failure of judges and pollworkers to perform adequately on election day.

4. Failure to Recruit Enough Election Judges

With over 5,100 precincts to staff, the City and County needed more than 25,500 election judges. Recruiting of judges was largely passive with little effort made to attract qualified applicants for the position. As a result, precinct staffing levels were some ten percent short, about 2,500 judges. Some precincts staggered through the election with as few as two judges.

In addition to more aggressive recruiting, the City and County must provide financial incentives to insure that judges not only show up, but are properly trained. The current compensation is $100 for working on election day with $50 for attending a three or three and one-half hour training session. Technical judges attended another three hour training session in the County and were paid an additional $50. Election day itself is a long and grueling experience stretching from 5:00 am to about 9 pm, at least 16 hours, often more. That's $6.25/hr, about minimum wage. Add 3-½ hours for training and that makes $150 for 19 - ½ hours, barely $7.70/hr, not including travel time to a training site and the polls. It's fair to say that most election judges are essentially volunteers.

54 City/Sequoia Contract – Appendix C – page 0021

55 City/Sequoia Contract – Appendix B – page 0043

56 City/Sequoia Contract – Appendix C – page 0023

57 City/Sequoia Contract – Appendix D and County/Sequoia Contract – Schedule F2

While "base pay" for election day needs to be increased, we strongly suggest that the greatest incentives be offered for training sessions. It is imperative that every judge receive at least six hours of training prior to the General Election on November 7th. While it's true that adding $100 to the compensation of 25,000 election judges would cost $2.5 million, would we not have gladly spent that amount to avoid the meltdown that occurred on March 21st? How much would it have been worth to avoid the adverse national publicity that the City of Chicago received? How much would you have paid to have had positive stories about the March primary instead of hundreds of negative ones? Would you not have gladly written a check for $2.5 million to the PR agency that could have accomplished that?

Here again, Sequoia promised to assist the City and County:

> Sequoia will work with the Jurisdiction to recruit pollworkers and members of the various jurisdiction League of Women Voters organizations to participate in the voter/public education program through telephone calls, a special mail piece, press releases, public service announcements and special media reports. The media blitz will also serve to alert the general public and the voters of the advent of a new voting system and the opportunity to vote on the new machines at public demonstrations. [58]

Better planning, better procedures, better use of resources, more judges, more qualified judges, better trained and prepared judges - all would have gone a long way toward preventing the debacle that ensued.

5. Lack of Community Outreach and Voter Education

Voter education was less than adequate for the March primary, despite the substantial efforts that were made. Voter outreach needs to be better planned and executed. Internet education could be significantly improved with video and step-by-step instructions. Media needs to make a real contribution in terms of Public Service Announcements (PSAs). Voters need to know what to expect and how to improve their own experience at the polls.

Here again, we suggest that a thorough investigation of the efforts of Sequoia should ensue. Here's what they have to say about their capabilities:

> Sequoia has an extraordinary public relations and voter education team, whose individual experience is unmatched anywhere in the industry. [59]

> Sequoia will assist in developing press releases, to uncover and pitch human interest stories to reporters, assemble press packets and organize press conferences, to include a cross section of representatives from the community. Our expertise with similar installations in Riverside Jurisdiction, California, the Florida counties of Palm Beach, Hillsborough . . . and Clark County, Nevada have provided our public relations team with a portfolio of media materials that can be quickly fine-tuned to the specific needs of the Jurisdiction with very little creative development time and expertise. [60]

And all this for only $100,000.

6. Poor Procedures for Early and Absentee Voting

Early Voting

The procedures for Early voting ballots are prescribed by statute (10 ILCS 5/19A) and significant differences exist for processing Early votes, depending on whether they are cast on paper ballots or by Direct Recording Electronic device (DRE). Ballots cast by DRE are treated as Absentee Ballots and are not processed or counted in the precinct. (10 ILCS 5/19A-75)

58 Chicago/Sequoia Contract – Appendix B – page 0044

59 *Ibid*

60 *Ibid*, page 0045

Early Voting ballots completed on paper are required to be delivered to the precinct and processed and counted after the polls close (10 ILCS 5/19A-55). The process is time consuming and involves comparison of signatures on the early ballot application with the signature on the ballot application in the poll book, handling of challenges and occupies at least two judges for approximately two minutes per ballot.

In addition, a list of Early Voters is delivered to the precinct prior to the opening of the polls and the physical ballots delivered prior to the closing of the polls. Election judges must first reconcile the list of early voters with the physical ballots and they often do not match. Instances have occurred where the list of Early Voters was incomplete. In addition, to prevent duplicate voting, the list also includes Early voters who have voted on DRE devices so that their Application for Ballot can be noted as "Early Voter."

As Early Voting increases in popularity and the number of voters increases in the upcoming November election, we estimate that the average precinct will require approximately 30 minutes to process Early Voting ballots. Because this processing must occur (for paper ballots) prior to scanning, it will require that the scanner cannot be closed out and the scanner results tape printed until after this occurs. This could delay consolidation of scanner and DRE results, transmission and printing of the Official Results Tape.

It is recommended that appropriate changes be made to the language of the relevant sections of the Illinois Election Code (10 ILCS 5/19A) to allow Early Votes to be processed centrally and that a method be instituted whereby an accurate list of Early Voters be provided to individual precincts to prevent duplicate ballots being cast by individuals who have voted early. Inasmuch as the in-precinct counting of cast ballots does not include those cast on DREs, there's no logical reason why it should include those cast on paper. In the event that any Early Votes are cast on DREs, the "Official Results Tape" will not provide a final precinct count in any event.

Write-in Votes

Each precinct receives a list of officially registered write-in candidates used to process write-in votes. This, too, is a time-consuming effort as most voters are not aware that a write-in vote for someone not on the official list is invalid. Thus, votes for "Donald Duck" and "anyone but" and other fanciful write-in "candidates" must be separated from valid write-ins for both paper ballots and those cast on the DRE. It would appear that the list of valid write-in candidates could be programmed as a part of the ballot style used on the DRE and the voter could be advised of "invalid write-in candidate" during the review process in the same manner as he or she is warned of an overvote or undervote.

The Sequoia Insight optical scanner uses obsolete technology and could be replaced with a more modern optical scanner with Optical Character Reading (OCR) capabilities that could reject ballots with invalid write-in candidates.

D. AN OVERVIEW OF ELECTION DAY

1. Setting Up the Polls

Both the ESC and the VSC cabinets appeared to have been sufficient to provide a means to deliver equipment and supplies to the polling place. Procedures differed between the City and County with respect to access to the cabinets. In the City, one judge received the key to the ESC by mail, [61] whereas in the County the designated "Supply Judge" received the key to the VSC at a central location. [62]

Both the City Handbook and the County Manual contain adequate instructions on checking supplies and set up of scanners, touch-screen devices, Card Activators, voting booths and signage, marking of "electioneering free zones" and other pertinent instructions.

61 See City Handbook, page 10

62 See County Manual, page 15

Problems in setting in the polls fell into the broad categories of missing supplies and voting machine malfunctions. City and County workers who load voting system components into either the ESC or VSC should pretest the machines to determine that they function properly. Power cords should be checked as well as printers. The Sequoia Insight optical scanner and the Card Activator both have design defects with respect to paper guides on the printers which in a significant number of cases delayed or prevented the printing of AM Zero tapes.

The Sequoia AVC Edge DRE, like most computers, either boots or it doesn't. When it does not, there's little an election judge can do about it other than call for a technician.

2. When the Polls Were Open

Reports received by the Illinois Ballot Integrity Project appear to indicate that during the time the polls were open that procedures for serving voters seemed to work much as they have in years past. Some new procedures, primarily those associated with provisional ballots could and should have received greater attention during training. As long as voting machines functioned properly, lines were at a minimum. As mentioned above, many voters were unfamiliar with the new paper ballots and the touch-screen voting machines so that some additional time was spent explaining these.

Several members of our organization were election judges and others pollwatchers. However, we are not a large organization and thus reports of voting machine malfunctions we have gathered are anecdotal rather than quantitative. We would urge the Committee to probe deeply into the quantitative aspects to determine the scope and frequency of problems encountered. It would appear that little definitive information as to the number and type of machine malfunctions exists outside 69 West Washington. We can only draw some broad inferences based on experience and reports received from voters, pollwatchers and election judges.

Problems with the AVC Edge DRE (touch-screen):

DRE refused to boot (9 separate precincts in Chicago – 5 in County)

DRE refused to accept Voter Cards (4 reports in City – 2 in County)

Paper jams on DRE printer (3 reports in City – one in County)

Problems with the Insight Optical Scanner:

Printer tape wrapped around spindle – unable to print AM Zero tape (3 City – 2 County)

Scanner cord installed improperly, blocked ballot slots causing jam – (4 reports – County)

Ballots rejected as "Defective" for no apparent reason (more than 50 reports, City and County)

Physical ballot jams ["Scanner ate the ballot"] (3 reports City – 5 reports County)

Loose power cord (4 reports City – 1 County)

Problems with the Card Activator (during voting hours):

Would not activate card with Green Party ballot style (1 report – City)

Card rejected by DRE but status showed OK by Activator – reactivated (12 reports City – 9 County)

Printer jammed during printing of AM Zero tape

City and County officials might well have anticipated these problems as Sequoia's Insight Optical Scanners had significant problems just a few weeks ago in tests conducted at Sequoia's corporate headquarters by representatives of the California Secretary of State's office: [63]

CALIFORNIA VOLUME TESTING - SEQUOIA VOTING SYSTEMS										
Test Date	**Vendor**	**Model**	**No. Tested**	**Errors**	**Failure Rate**	**Test Hours**	**Total Hours**	**MTBF**	**Votes (est)**	**MVBF**
14-Feb-06	Sequoia	Edge I	100	6	6.0%	5.50	550.00	91.67	11000	1833
14-Feb-06	Sequoia	Edge II	100	2	2.0%	5.50	550.00	275.00	11000	5500
15-Feb-06	Sequoia	Insight	50	29	58.0%	5.50	275.00	9.48	5500	190
15-Feb-06	Sequoia	Insight Plus	50	28	56.0%	5.50	275.00	9.82	5500	196

Sequoia testing estimated 5.5 hours per test: 9-4 w/1.0 lunch & 0 .5 breaks (from test worksheets)
MTBF is the average number of hours before machine failure
MVBF is the average number of votes processed before machine failure

3. Why Weren't Replacement Units Available?

We have received numerous reports of precincts which were without either a functioning touch-screen (DRE) or optical scanner for significant parts of the day and a significant number of precincts that did not have functioning equipment during the entire election day. Election officials announced that the general deployment plan was to have one optical scanner and one touch-screen device per precinct. The following chart shows the number of DREs, optical scanners and Card Activators which should have been delivered under terms of Sequoia's contract with the Chicago Board of Election Commissioners and the Cook County Clerk's Office. [64]

CONTRACTED EQUIPMENT FOR CHICAGO AND COOK COUNTY				
	Precincts 2004	Edge DRE	Insight Scanner	Card Activator
City of Chicago	2,709	2959	2859	2759
Excess of 1/Precinct		250	150	50
Est Admin Use		25	25	25
Est Avail Replacements		225	125	25
Cook County	2,408	3000	2650	2452
Excess of 1/Precinct		592	242	44
Est Admin Use		25	25	25
Est Avail Replacements		567	217	19

If the delivery schedules were met, even assuming that 25 DREs and 25 scanners were committed to "administrative use" (training, headquarters use, etc), the City should have had approximately 225 DREs and 125 scanners available to replace out-of-service units. Similarly 567 DREs and 217 scanners should have been available in the County. However, this proved not to be the case.

On January 3, 2006, the City and County entered into a lease agreement with Sequoia which substantially reduced the number of AVC Edge DREs (touch-screens which would be available to the City and County. Gone was the plan to provide one DRE per precinct. We were unable to obtain exact information from the County on the number of touch-screens delivered under the lease agreement, but

63 Staff Review and Analysis Secretary of State Office of Voting Systems Technology Assessment. February 22, 2006, http://www.ss.ca.gov/elections/voting_systems/sequoia_staff_report.pdf

64 City of Chicago Contract, Appendix D, Price Sheet and List of Equipment and Software; and Cook County Contract, Schedule F1, Equipment and Price List.

were told that it was "about" 2,000 [65] Chairman Langdon Neal testified on April 7th before the Chicago City Council that the number available to the City was approximately 2,075. Freedom of information requests have been submitted to both the City and County for copies of the relevant lease agreements to determine the precise arrangements under which they agreed to accept used equipment (primarily from Clark County, Nevada), for use in the March 21, 2006 Primary Elections.

Instead of delivering the machines called for in the purchase agreement, Sequoia gave the City 684 fewer DREs than specified in the sale contract which called for 2,959 to be delivered, one for each precinct and 355 extras. With 2,604 precincts, the plan of one DRE per precinct couldn't be executed as the City was 529 machines short of that plan. The City had barely enough to cover one per polling place (about 1,975). This means that there weren't enough to provide sufficient replacement units when machines malfunctioned.

Assuming the 2,000 figure to be accurate, the County had 1,000 fewer machines delivered under the lease than called for in the purchase agreement and 408 fewer touch-screen machines than precincts, but 500 more than polling place (1,479). Yet, there were multiple reports of DRE malfunctions early in the day with no replacements available. This leads us to suspect one or more of the following:

- The number of machines delivered under the lease agreement was something less than 2,000
- There were massive failures of DREs in the County
- There were insufficient back-up machines or technicians to deliver them

Yet, prior to the election, Sequoia announced that it would have additional personnel available to assist the City and County, Sequoia's largest customer. The result, however was, "Chicago election chairman Langdon Neal said it is 'embarrassing' that hundreds of machines failed to properly produce votes . . . " [66]

It's obvious that we don't have the full story. And, it's equally obvious that these numbers just don't add up. We urge the Committee to pursue this line of inquiry vigorously.

4. Closing and Reporting

After the polls closed, election judges were again placed in the position of dealing with unfamiliar equipment and procedures. We've previously discussed the handling of Early Voting ballots; from the limited reports available, it's obvious that hundreds of precincts in the City and County were unable to successfully consolidate and transmit results.

Certainly human error was in substantial evidence as with the 414 Memory Packs and Results Cartridges that went missing, 252 in the City and another 162 in the County. More than 24 hours after the polls closed, about 500 precincts remained uncounted and the final counting wasn't finished until the weekend, days after the election was "over." Exactly what happened in those uncounted precincts has yet to be unraveled.

65 According to Scott Burnham on April 14, 2006.

66 "City, county rip voting machine firm," By Steve Patterson, Staff Reporter, *Chicago Sun-Times*, March 24, 2006.

E. THE AFTERMATH

In the wake of what Chairman Langdon Neal described quite accurately as an "embarrassment, the media, local, national and international, had a field day with reports of what happened in both the City and the County. Here is a sampling:

"A Week Later - Almost All Votes Counted" *Chicago Tribune* - www.chicagotribune.com/news/local/chicago/chi-0603280234mar28,1,4097657.story?coll=chi-newslocalchicago-hed

"Aldermen: Withhold Payments" *Chicago Sun-Times* -http://www.suntimes.com/output/elect/cst-nws-vote28.html

"Election Commission May Withhold Payments" – *WQAD Radio* www.wqad.com/Global/story.asp?S=4689869&nav=1sW7

"Aldermen Mad About Election" – *Daily Southtown* www.dailysouthtown.com/southtown/dsnews/281abn6.htm

"Election Commission May Withhold Payments" - *WBBM Radio* – wbbm780.com/pages/19171.php?

"Chicago Ballot Chaos" - *American Free Press* www.americanfreepress.net/html/chicago_ballot_chaos.html

Voting Machine Maker Blasted" – *Chicago Tribune* - www.chicagotribune.com/news/local/west/chi-0603240240mar24,1,858735.story?coll=chi-newslocalwest-hed

"Chicago, County Rip Sequoia" – *Chicago Sun-Times* - www.suntimes.com/output/news/cst-nws-vote24.html

"Ballot Madness" – *Chicago Tribune* - www.chicagotribune.com/technology/chi-0603230066mar23,1,3171935.story?coll=chi-techtopheds-hed

"Ballot Chaos" – *Chicago Sun-Times* - www.suntimes.com/output/news/cst-nws-prez221.html

"Chaos at the Polls" – Opinion – *Chicago Sun-Times* www.suntimes.com/output/otherviews/cst-nws-judge26.html

"Officials Blame Sequoia" – *Associated Press* www.thestate.com/mld/thestate/news/special_packages/election2004/14171240.htm (via *The State*)

"Vote Snafu" -*Chicago Sun-Times* - www.suntimes.com/output/elect/cst-nws-machine23.html

"New Machines, Poor Training Slowed Count" – *Chicago Tribune* www.chicagotribune.com/technology/chi-0603230212mar23,1,353880.story?coll=chi-technology-hed

"MWRD Candidate Says 50,000 Votes Disappeared" *WBBM* - www.wbbm780.com/pages/18294.php?

"Machine Woes Slow Illinois Count" - *Washington Post* -www.washingtonpost.com/wp-dyn/content/article/2006/03/22/AR2006032202171.html

"Vote Count Incomplete, Process Questioned" – *NBC* - www.nbc5.com/news/8177235/detail.html

"This Is An Advancement In Technology?" *SW News Herald* - www.swnewsherald.com/online_content/2006/03/032206rh_voting.php

"Voting machine woes force ballot backup" *Chicago Tribune* http://www.chicagotribune.com/news/nationworld/chi-0603220085mar22,1,3756192.story?coll=chi-newsnationworld-hed

"Poll Workers Concerned About Accuracy" - *CBS* - cbs2chicago.com/politics/local_story_081222708.html

Subsequently, both Cook County Clerk, David Orr and Chicago Board of Election Commissioners Chairman, Langdon Neal announced "10 point" and "11 Point" programs to correct the problems that were experienced in the primaries. Only time will tell if enough improvements can be made in procedures, training, and voting machine reliability to resolve the situation prior to November 7th.

Sequoia Failure to Perform Was No Surprise

Sequoia spokesperson Michelle Shafer was quoted as saying that the problems experienced in the City and County made for a "very typical Election Day in a jurisdiction where they are changing voting technology." Or perhaps she meant, typical for jurisdictions using Sequoia voting systems.

Both the Sequoia Insight Optical Scanner and the Sequoia AVC Edge DRE have many documented failures. Here are a few examples:

March, 2002. Palm Beach County, Florida: Councilman Al Paglia lost his seat by four votes to Lizbeth Benacquisto during a runoff contest held March 26th in Wellington, a town of 42,000 in central Palm Beach County. Although Paglia and Benacquisto were the only candidates on the ballot, 78 so-called undervotes were registered, meaning 78 voters used the machine but did not cast a ballot. That struck Paglia as odd because he'd garnered 45 percent of the votes during the primary run against three challengers. And then, he too began hearing stories from voters that the Sequoia touch screens had acted erratically. [67]

April, 2002. Hillsborough County, Florida: Vote data could not be transferred from 24 of the 26 data cartridges to the readers that would transmit the totals to the central office to be tallied. Precinct totals were faxed over and entered by hand. "As of today, we still have not pinpointed the problem," Elections Supervisor Pam Iorio said Friday. "We have had three Sequoia employees looking at it, but they have not gotten to the bottom of it." [68]

Ten days after the November 2002 election, Richard Romero, a Bernalillo County, New Mexico, Democrat, noticed that 48,000 people had voted early on unauditable Sequoia touch-screen computers, but only 36,000 votes had been tallied — a 25 percent error. Sequoia vice president Howard Cramer apologized for not mentioning that the same problem had happened before in Clark County, Nevada. A "software patch" was installed and Sequoia technicians in Denver *e-mailed* the "correct" results. [69]

Not only did Cramer fail to mention to Bernalillo County that the problem had happened before in Nevada. Just three months later, Sequoia salespersons also failed to mention it while making a sales presentation to Santa Clara County, California. A Santa Clara official tried to jog their memory. According to the minutes of this meeting, Notes on "Workshop" on Voting Machine Security for Santa Clara County Supervisors, February 11, 2003. Supervisor McHugh asked one of the vendors about a statistic saying there was a 25 percent error rate. No one knew where this number came from and Sequoia said it was incorrect. But, 20 days before, in Snohomish County, Washington, at a meeting called because Sequoia optical-scan machines had failed to record 21 percent of the absentee votes, when asked about the 25 percent error in Bernalillo County., the Sequoia representative was well aware of the problem, replying quickly that *that* 25 percent error was caused by something quite different from *this* 21 percent problem. [70]

January 2003, Everett, Washington: If there was any doubt that Republicans were right to ask for a recount of some Snohomish County absentee ballots from November's general election, it was erased by one sobering number: 21.5 percent of the ballots cast in 28 selected precincts were not counted. The Snohomish County Auditor's Office recounted 116,837 absentee ballots after county officials discovered that the optical-scan ballot-counting machines had miscounted. The problem was attributed to a faulty "read head" on each of two optical scanners; the heads failed to read ballots with blue ink. The machines had passed the test on blue ink before the election. [71]

67 "Out of Touch: You press the screen. The machine tells you that your vote has been counted. But how can you be sure?" By Wyatt Olson, *New Times*; April 24, 2003

68 "Officials still searching for election glitch: The new system could not send the tabulations to the elections office." By Jeff Testerman, Times Staff Writer, *St. Petersburg Times*; April 6, 2002

69"County Certifies Vote Tally" *Albuquerque Journal*, November 19, 2002;

70 "County to Discuss Ballot-Counting Foul-up" *The Everett Herald,* January 20, 2003;

71 "County's voting troubles spur changes nationwide." *Seattle Times*. January 29, 2003 by Emily Heffter, Times Snohomish County Bureau.

March, 2004, Napa County, California: Insight optical scanners failed to record votes marked with dye-based ink. The error was found during a manual recount used to verify accuracy. After counting 60 ballots, officials discovered that the number of votes didn't match the votes recorded by the machines. Prior to the election, a Sequoia technician ran test ballots through the machine to calibrate its reading sensitivity, but failed to test for gel ink. [72] Napa Registrar of Voters John Tuteur said the machine dropped 6,692 votes out of a total of 468,001 votes cast on the more than 13,000 absentee ballots. He added that there was no pattern to the dropped votes: They spanned federal, state and county races and affected various candidates and ballot measures. [73]

June, 2004, Dona Ana County, New Mexico: Insight optical scanners failed the pre-election testing and nonetheless were used in early voting. In pre-election testing, counters that track the total number of ballots passed through the machine showed incorrect numbers. The counters in four out of five machines were incorrect, showing as many as 20 or 30 votes more than the actual number of ballots tested. Chief Deputy Clerk Coni Jo Lyman said officials at Ink Impressions, the Rio Rancho-based company that provided the Insight machines, told her the machines were capable of counting both ways [by precinct and canvassed]. But when county personnel attempted to get the super-precinct totals from the machines, the numbers were wrong. Election workers wound up counting the vote by precinct, which took extra time and labor. Ink Impressions president Terry Rainey denied Wednesday there is any problem with the machines or the process. [74]

June, 2004- Morris County, New Jersey: Morris County's computerized voting tabulation system malfunctioned last night, forcing elections officials and computer experts to work feverishly late into the night to correct the problems. "Nothing has ever happened like this," said County Clerk Joan Bramhall. "There's data on the (computer) cartridge, but it's just not reading it. It shows zeroes." [75]

August, 2004. Sacramento, California: In a demonstration of its Direct Recording Electronic voting machine with a paper trail, Sequoia demonstrated that its machine failed to report four votes in Spanish. Last week, Sequoia vice president and former California assistant secretary of state Alfie Charles was showing off the new Veri- Vote printer that his firm is supplying to Nevada when an astute legislative aide in Johnson's office noticed two votes were missing. Charles tried again to vote in Spanish with the same result: He cast votes on two mock ballot initiatives, but they were absent from the electronic summary screen and the paper trail. Charles said his company's touch-screen actually did record the electronic votes in its memory but through an oversight failed to reflect the votes on its electronic display and printout. [76]

September, 2004, Snohomish County, Washington. As yet unexplained problems caused sixty-five touch screen voting machines to crash and smart cards to jam in the primary election. The biggest problem the county encountered was the disabling of 65 of 860 e-voting machines because of a software crash and jamming of the smart cards. Although affected voters managed to use alternate machines and no previously tallied votes were lost, "we can't afford to have a repeat" of the breakdown during the November election, [County Auditor Robert] Terwilliger said. [77]

72" Lost E-Votes Could Flip Napa Race," *Wired News*; March 15, 2004; By Kim Zetter.

73 "E-Vote Snafu in California County." *Wired News*; March 18, 2004; By Kim Zetter.

74 "Company denies problem with voting program," *Clovis News Journal*. June 3, 2004. By Jack King: CNJ Staff Writer

75 "Montville and Chatham mayors ousted," *Star-Ledger*. June 9, 2004. By Lawrence Ragonese and Kristen Alloway.

76 "Lawmakers cut e-voting's paper trail: Manufacturers demonstrating new printers in Nevada were embarrassed when machine failed to recognize votes," *Tri-Valley Herald*. August 13, 2004. By Ian Hoffman, Staff Writer.

77 "E-voting vent: You can't tell if it worked," *Seattle Times*. September 20, 2004. By Paul Andrews.

October, 2004, Palm Beach County, Florida: 2004: In the second day of early voting, touch screen machines failed and had to be replaced. Voters quickly lost confidence in the election process. At Palm Beach County's West Boca branch library, voters were turned away Tuesday morning after touch-screen voting machines failed to work properly. Voting finally got underway at midday, after five new units were delivered. Lines snaked out from the library's small windowless conference room, which doubled as a makeshift precinct. Waits of two or three hours were not uncommon at many of the county's eight early voting sites. Seeing all this, Jane Weidman of Boca Raton said she had lost confidence in the system. "We are all here because we're afraid our vote is not going to count on Nov. 2," she said. "We can't vote. It's like Afghanistan. We're all in a long line. What's going on here?"

And the failure to boot up wasn't the only problem. Morris Jay of Boca Raton came Monday but left without voting. He was one of the first in line Tuesday and was not inspired by his voting experience. "I voted, but my machine froze," he said. "They fiddled around with it, then they closed it up. They gave me another card and I went to another machine." [78]

This list is by no means exhaustive. Voters Unite (www.votersunite.org) from which these examples are taken, has collected 23 pages of similar occurrences involving Sequoia voting systems components, DREs, optical scanners and Card Activators. Some of these echo the dozens of news reports relating similar voting experiences in Chicago and Cook County on March 21st. Machines failing to boot, ballots unread, screens freezing, ballot jams and unreadable Memory packs and Results Cartridges are nothing new.

The trustworthiness of electronic voting is a major issue. Electronic voting systems have proven to be an unmitigated disaster for voters and election officials alike. Touch-screen voting systems have a long history of multiple failures, both mechanical and electronic. Even though DREs have been used in elections for more than a decade, they have demonstrated a wide variety of undesirable features and performance patterns arising from a variety of malfunctions of hardware, software and communications, both at the precinct and central tabulation locations. Touch-screens have added an unnecessary layer of complexity to voting systems which contributes to breakdowns and results in unacceptable results. This primary election has been no exception.

Summary

It is difficult, if not impossible, to assert that the myriad of problems experienced during the election and its aftermath were the result of mere equipment “glitches” and human error. While no one expected an error-free election process, the significant number of breakdowns in so many areas of the election process was shocking. When days after the election thousands of votes remain uncounted with some races and propositions still in doubt, success is not a term that can be attached to any aspect of the Primary Election of 2006.

March 21st was nothing less than a disastrous confluence of events that began in June, 2004, when the City and County began the process of purchasing new voting equipment and systems that ultimately resulted in the expenditure of more than $50 million of taxpayer dollars.

- During this process, election authorities abandoned key portions of their specifications and settled for a system that seems to have offered little technical improvement over the one they abandoned.

- The choice was made to expend $25.5 million to introduce optical scanners that replaced an advanced punch-card system that had performed well in the elections of 2002 and 2004, despite the fact that the new system was missing the ability to detect undervotes, a feature election officials deemed of significant importance – and one that is recommended under the U.S. Election Assistance Commission Voting System Standards.

78 ”Glitches, lines hamper early voting,” *Palm Beach Post* October 19, 2004. By John Murawski, Palm Beach Post Staff Writer.

- City and County officials chose to introduce three new equipment components, DREs, Optical Scanners with new paper ballots and Card Activators/Consolidators in a single election in an environment that also required substantial changes in voting procedures mandated by significant changes in the Illinois Election Code introduced by HB 1968, including Early Voting and in-precinct vote counting.

- The added complexity of introducing optical scanners and a new style of marksense ballot was chosen even though the vendor appeared to endorse the feasibility of a "blended system" that would be "the simplest and most cost effective way to accomplish our goals with the least procedural impact on the pollworkers."

- Despite recognizing a clean slate was available, City and County officials appeared to have chosen to go their separate ways in designing and implementing procedures, election judge manuals, forms, training materials and even the cabinets to store equipment and supplies. This decision was a critical mistake that led to duplication of effort and higher administrative costs, less time for training, and waste of scarce resources.

- Inadequate efforts to recruit a sufficient number of election judges and pollworkers left the City and County short thousands of needed workers to administrate the election and assist voters who were also unfamiliar with the new equipment and procedures.

- Voter education efforts can be charitably characterized as simply less than adequate.

- Training of election judges and pollworkers was poorly designed with improper focus, inadequately prepared trainers, overly large classes and an incomplete curriculum. Thousands of election judges received no training whatsoever on new equipment and procedures.

- Hundreds of electronic voting machines malfunctioned on election day substantially disrupting the voting process when the polls were open and hundreds more failed after the polls closed, delaying the reporting of results and casting doubt on their accuracy.

Throughout the prelude to this debacle, City and County officials were aided and abetted by a State Board of Elections that also disregarded its statutory responsibilities and gave approval to a voting system that failed to meet the standards the Board had adopted. When the SBOE disregarded the Voting System Standards it had adopted, it failed to abide by its own rules and gave the green light to City and County officials to implement as system that was bound to fail.

Every step of the way, when confronted with a choice between simplicity and complexity, City and County officials chose complexity, adding layers of confusion to the process.

On March 21st, with only about a 25% turnout, election officials, judges and the vendor were fortunate that circumstances were not substantially worse. Based on the turnout for the 2002 Gubernatorial election, we can reasonably the number of voters on November 7th to double. That means that about 50% of voters will be seeing new equipment and experiencing new procedures for the first time.

Both City and County officials now clearly recognize that much needs to be done to improve the process and you will undoubtedly hear about many initiatives over the next few months. We can only hope that better decisions will be made and substantial improvements implemented. Chicago and Cook County cannot afford a repeat performance in November.

Further, there needs to be significant transparency in the process of a post-mortem of the March primary. The reputations of election officials and the vendor have been substantially damaged. There is a real danger that the negative results of this election may substantially depress turnout in November. Election officials need to mount a sustained and realistic campaign to assure voters that the problems are being looked at objectively and that election officials and Sequoia will honestly admit what went wrong and make a real effort to improve the situation.

The hearings held by the joint committees of the Chicago City Council did little to shed light on the substantive issues of what went wrong on March 21st and the long train of events that seemed to lead almost inevitably to the meltdown that characterized the primaries. The Cook County Board of Commissioners has an opportunity to rectify this situation by holding hearings that will look at the process and events which determined the outcome of March 21st, from the procurement process, the pre-election planning (or lack thereof) and the events of election day. Much is riding on the outcome of any hearings – the Board of Commissioners will be challenged to provide an outcome significantly different than the City Council – we trust they will be equal to the task.

There can be no more "business as usual." It is imperative that the public understand and believe that real substantive efforts are being made to prevent a recurrence of the problems with voting equipment, training and procedures. You cannot, you must not, sweep this one under the rug. No less than the future of the electoral process in Cook County is at stake.

F. POTENTIAL SOLUTIONS – FUTURE CONSIDERATIONS

We've previously mentioned the programs for improvement announced by both the Chicago Board of Election Commissioners [79] and the Cook County Clerk. [80] These short-term programs are triage attempts to stop the bleeding. While they show some promise, both fail to address the root cause of the problem: Neither the City nor the County was ultimately capable of implementing a complex new voting system that required election judges and pollworkers to become familiar with three new voting machines, a new type of ballot, new procedures, In-person Absentee Voting, new or modified forms, revised procedures during hours when the polls were open and a complex new closing procedure.

Many of the actions suggested in both plans, insofar as they address recruitment and training of election judges and pollworkers, improved and increased training, special judges with improved skill sets, improving technical assistance and response, reviewing and upgrading manuals and other materials, increasing and improving voter education and community outreach and improving post-election procedures all have merit and should be implemented immediately.

None of these, however, address the key issue of electronic voting systems. They are inherently unreliable. To make matters even more complex, the City and County plan to introduce yet another new voting device: the so-called "second-generation" DRE (touch-screen). [81] Frankly, we have our doubts as to whether this new voting device even exists. Given that Sequoia was unable to supply a sufficient number of AVC Edge Model II DREs for the March 21st election, the prospect of manufacturing a sufficient number of new machines and delivering them before Early Voting begins in October seems unlikely at best. Sequoia has yet to announce any specifications or particulars about the "next generation" DRE.

Further, no new Sequoia equipment has been submitted for certification by the U.S. Election Assistance Commission (EAC). In fact, the Sequoia voting systems components (DREs, optical scanners, HAAT devices, WinEDS software, C-400 ballot tabulators, etc. only received federal certification and their NASED certification numbers four days before the Illinois Primary, even though these components had been on the market in their present form for almost two years. [82] Certification by both the EAC and the Illinois State Board of Elections in the next six months would require an effort that seems beyond Sequoia's capabilities.

79 "Chicago Announces Program For Ballot Improvements" – March 27, 2006
http://chicagoelections.com/BallotImprovements.htm

80 "Orr vows to make voting improvements" – April 12, 2006
http://www.voterinfonet.com/sub/news_view.asp?NEWS_ID=153

81 Testimony of Langdon Neal and Jack Blaine before the Chicago City Council, April 7, 2006

82 NASED Certification numbers N-1-07-22-22-001and N-1-07-22-22-002 were granted on March 17, 2006 - http://www.nased.org/

In addition, we have conclusively demonstrated that the Sequoia Insight-OS optical scanner and the C-400 Absentee Ballot Tabulator were improperly certified by the Illinois State Board of Elections on February 10, 2006 (See discussion, *supra*, at pp 5-6). Decertification of these devices seems likely, either on the Board's own initiative or through litigation. Recertification would entail at the very least new firmware and probably other technical modifications. Again, the federal and state certification process would apply, making the availability of optical scan units that are compliant with Voting System Standards (VSS) Section 2.4.3.2.2. (able to detect and warn of both undervotes and overvotes) unlikely for the November 7th General Election.

From the foregoing, we conclude that Sequoia Voting Systems is not capable of providing voting machines that are either compliant with the Help America Vote Act of 2002 (HAVA), the Illinois Election Code or able to be properly certified by the SBOE. The obvious solution to this serious situation is for the City and County to immediately abandon their contracts with Sequoia for the purchase of voting equipment and systems, withhold any further payments to Sequoia and attempt to reclaim those funds already expended for non-compliant optical scan equipment. [Sequoia has yet to deliver any DRE (touch-screen) equipment under the purchase agreement. The DREs leased and used in the primary are to be returned to Nevada from whence they came.] The City and County should immediately commence negotiations to resolve this issue with the vendor and resort to litigation if necessary.

1. Near Term Options

Consideration of replacement equipment for the November General Election is necessarily limited by both time constraints (system procurement and implementation within six months) and the availability of equipment. In addition, the procurement process must comply with the Illinois Election Code with respect to choices which have been approved by the State Board of Elections. Further, any system implemented for the 2006 General Election must comply with Section 301(a) with respect to providing appropriate access for disabled voters.

A survey of the available literature suggests that an optimal voting system would have five attributes: 1) Privacy, the ability for each voter to cast a secret ballot; 2) Anonymity, the ability of voters to protect their choices; 3) Accuracy, a direct and verifiable tracking from voter intent to final tally. 4) Scalability, the ability to adapt to small and large voter groups; and 5) Speed, for an early tabulation and announcement.

The Illinois Ballot Integrity Project has made an extensive study of currently available voting technology. Our research has shown that currently available DREs (touch-screens) do not offer election officials and voters sufficient reliability, security and accuracy to justify a recommendation for use in elections in the City and County.

Handmarked paper ballots and precinct based optical scanners provide voters with essential advantages over expensive and unverifiable electronic "Touch Screen" (DRE) technology. Ballot marking technology allows a paper ballot based system to provide accessible, private and independent voting for voters with disabilities. Optical scan systems have been used in elections around the United States for over 20 years.

The accuracy of a voting system is often assessed by what is called the "residual vote". This is the difference between the number of voters who turn up at polling stations and the total number of votes allocated to the candidates. Though voters can choose to intentionally undervote, they generally do so in lesser races (for example, judicial retention). If one system regularly produces a higher residual vote than another its accuracy may be questioned.

If we accept this criterion, the most accurate way to record votes is to use optical scanning machines. These work in a similar way to photocopiers, and register a voter's pencil mark on the ballot by the amount of light it absorbs. These systems produced an average residual vote of around 2.1% during presidential elections from 1988 to 2000, according to a study which appeared in the Journal of Politics by Stephen Ansolabehere and Charles Stewart of the Caltech-Massachusetts Institute of Technology Voting Technology Project. [83]

83 "Residual Votes Attributable to Technology, Ansolabehere & Stewart, *Journal of Politics*, May, 2005 http://journalofpolitics.org/Contents/Vol67/arts672/stewart.pdf

a. The Case Against DREs

On the other hand, touch-screen voting machines have a far higher residual vote of 3.0%. These machines register a residual vote when a voter activates the machine but then fails to cast a vote. Experts attribute the high residual vote on these machines to their sometimes confusing or annoying interface, which require voters to navigate a menu and touch the screen to register their vote for their preferred candidate. Punched cards have a residual vote of 2.8%. Therefore, based on residual votes, voter-verified paper ballots read by optical scanners show a clear advantage.

The residual vote is not the only measure of the success of a voting technology. Of equal concern is whether voting machines can allocate votes to the wrong candidate or facilitate election fraud. This is where new voting technologies have attracted most criticism. Multiple independent studies in the past two years have identified problems with voting machines that could lead to vote tallies being mistakenly altered or deliberately tampered with. The flaws affect both the hardware and software of machines made by all major companies, but especially: Diebold Election Systems, Sequoia Voting Systems and Election Systems & Software (ES&S). Concerns have also been raised about machines made by other manufacturers.

While many people are advocating the use of a voter-verified paper audit trail (VVPAT) on DREs, VVPAT wouldn't have been sufficient to fix many of the problems that counties have encountered using DRE systems. This fact causes many people to question the wisdom of using DREs at all, even if they have a printer attached.

Many different types of e-voting problems have occurred in recent years. Hundreds of elections have been impacted by malfunctions which have disenfranchised voters and called the results of elections into question. In some cases, paper backup was available, and election officials were able to determine the voters' intent. In other cases, there was no paper backup, and localities have either certified the elections anyway or conducted a second election to replace the first.

Hundreds of electronic voting machine malfunctions have been reported in newspapers in recent years, more than 125 of them from the 2004 general election alone. Here are a few brief examples of common problems serious enough to be reported in the news.

1) Electronic Voting Machines Lose Ballots: Carteret County, North Carolina. November, 2004. Unilect Patriot DRE A memory limitation on the DRE caused 4,438 votes to be permanently lost. "Computer loses more than 4,000 early votes in Carteret." **-** *Charlotte Observer*. November 4, 2004, Associated Press. www.charlotte.com/mld/observer/news/local/10099907.htm

2) Electronic Election Equipment Inexplicably Adds Ballots: Bernalillo County, New Mexico. November, 2004 Over 8,000 phantom votes appear in the canvass report. The New Mexico certified election results reported 2,087 phantom votes (more votes than ballots cast) for president statewide. These phantom votes were concentrated in Bernalillo County. The official canvass report shows 187 precincts in Bernalillo County reporting presidential phantom votes — a total of 1,239 votes. *Bernalillo County Canvass of Returns of General Election Held on November 2, 2004***.** State of New Mexico. http://www.sos.state.nm.us/PDF/Bernalillo.pdf

3) Tabulation Software Reaches 32,767 Votes and Counts Backwards: Orange County, Florida. November, 2004. ES&S Optical Scan System Vote tabulating software omits counting 8,400 votes. The precinct results posted on the Orange County elections office Web site showed that Democrat John Kerry beat Republican President Bush by 9,227 votes in Orange County, but the posted results were off by 8,400 votes. The margin was actually only 827 votes. The cause of the error, Orange officials said Thursday, was a software program that could not tabulate more than 32,767 votes in a single precinct. A similar discrepancy affected vote totals posted online for the U.S. Senate race between Republican Mel Martinez and Democrat Betty Castor. "Distrust fuels doubts on votes: Orange's Web site posted wrong totals" **-** *Orlando Sentinel*. November 12, 2004. By David Damron, Sentinel Staff Writer. http://www.votersunite.org/article.asp?id=3803

4) Votes Jump to the Opponent on the Screen: Snohomish County, Washington. November, 2004. Sequoia DRE - Voters find vote-jumping difficult to correct. Voters in at least four polling precincts in Snohomish County said they encountered problems with the electronic voting machines. When they touched the screen to vote for a candidate, voters said an indicator showed they had selected the opposing candidate. Those voters told KING5 News it took at least four attempts before the indicator showed the correct candidate. "Scattered reports of voters being blocked and machine malfunctions" **-** November 2, 2004. KING5 News.
http://www.king5.com/topstories/stories/NW_110204ELBelectronicvotingproblemsLJ.1aac5fda.html

5) DREs Provide Incorrect Ballots: Maryland. March 2004. The U.S. Senate contest was omitted from ballots in three counties. Jeffrey Liss had finished making his selections on Maryland's Democratic-primary ballot and strolled out of the polling place at Chevy Chase Elementary School on the morning of March 2, Super Tuesday. On the sidewalk, he spied a campaign posted for Senator Barbara Mikulski, who is running for her fourth term. Funny, he thought, he didn't remember voting in the Senate race. Liss went back inside to talk to an election official. And another, and another. He was told he must have overlooked the Senate race on the electronic touch-screen voting machine. But Liss, a lawyer, finally persuaded a technician to check the apparatus. Sure enough, it wasn't displaying the whole ballot. According to voter complaints collected by Mikulski, who won in the primary, her race didn't appear on ballots in at least three Maryland counties**. "**The Vexations of Voting Machines" - *Time Magazine*. May 3, 2004. By Viveca Novak. http://www.time.com/time/archive/preview/from_redirect/0,10987,1101040503-629410,00.html

6) DREs Break Down During the Election: Mahoning County, Ohio. November, 2004 **-** ES&S DRE - Machines broke down in 16 precincts; others needed calibration. Many problems plagued the ES&S iVotronic touch screen voting machines in 16 of the 312 Mahoning County precincts. Some of the machines malfunctioned. Others had problems with the personal electronic ballot cartridge placed into the machines before each vote to count the ballots ... Also, there were 20 to 30 machines that needed to be recalibrated during the voting process because some votes for a candidate were being counted for that candidate's opponent. About a dozen machines needed to be reset because they essentially froze. "Errors plague voting process in Ohio, Pa**."** *Vindicator.* November 3, 2004. Vindicator staff. http://www.vindy.com/basic/news/281829446390855.php

7) Electronic Voting Machines Fail to Start Up: Bexar County, Texas. October, 2004. ES&S DRE - Uncharged batteries in several ES&S touch-screen voting machines hampered early morning voting at a southeast Bexar County precinct for about two hours today, officials said. Poll workers at Sinclair Elementary School realized just before 7 a.m. that the voting machines were dead. By 9 a.m., county technicians had powered up the machines, but not before dozens of people had left, either in frustration or because they were late for work. "Voting problems minor, but frustrating**. "** San Antonio Express. November 11, 2004. By Tracy Idell Hamilton, Staff Writer. Reproduced at:
http://www.votersunite.org/article.asp?id=3650

8) Memory Cards and Smart Card Encoders Fail: San Diego County, California. March 2004 Diebold Precinct Control Module - Encoders allow multiple votes ... or none. At least one voter was able to vote twice on her "smart card," and at least 250 polls opened late because poll workers were unable to start up the encoders. Hundreds, perhaps thousands, of people were turned away – many of them disenfranchised because they were unable to return to the polls at a later time that day. "Poll workers, voters cite tied-up hotline, poor training, confusion*." Union Tribune*; March 7, 2004; By Jeff McDonald and Luis Monteagudo Jr. http://www.signonsandiego.com/news/politics/20040307-9999-1n7vote.html

Later reports estimated that this problem delayed the voting at 40% of the polls and may have occurred at as many as 80% of the polling places. *Correspondence, written report regarding Touchscreen voting system used for the first time March 2, 2004 by the County of San Diego***.** From: Walter F. Ekard; Chief Administrative Officer http://www.signonsandiego.com/news/politics/county/20040310-1315-report.html

While these problems were originally blamed on poll workers, a report released on April 12, 2004 by Diebold Election Systems shows that 186 of 763 encoders failed on election day because of hardware or software problems or both, with only a minority of problems attributable to poll workers.

Diebold also admitted that tabulation errors during the October recall election were due to software bugs. *Diebold reports multiple problems: "*Registrar wants reason for e-voting**."** *Tri-Valley Herald*; April 13, 2004; By Ian Hoffman, Staff Writer. http://www.verifiedvoting.org/article.asp?id=1839

The above list is by no means exhaustive, it does, however, impart the flavor of both how widespread and serious the problems have become. For a report which more fully addresses the issue of touch-screen voting, we recommend "The Case Against DREs" – IBIP, January 23, 2006 - http://www.ballot-integrity.org/Case_Against_DREs_1-23-2006.pdf

b) The Best Alternative – Paper Ballots

Three serious problems concerning DREs surfaced during the March 21st Primary: 1) DREs failed to start up and were unusable, 2) Some DREs had to be shut down because the Verified Paper Audit Trail VVPAT, produced in a "sealed" printer cartridge jammed, potentially losing a record of votes, and 3) Election judges experienced significant difficulties combining results from the DREs with those of the optical scanner. Nearly 15% of the precincts in the City of Chicago were unable to report results and thousands of votes had to be counted by hand. [84]

If all voters voted by marking the same type of ballot, the need for combining results would disappear. If all voters voted by marking a paper ballot, the permanent paper record required for an accurate audit or recount would be available; there would be no need for a VVPAT, which adds another layer of technology – something else to malfunction during the election. If DREs were really accurate (and they aren't) theoretically we wouldn't need a paper trail. If the paper trail really worked, vendors wouldn't refer to the VVPAT printer as a "thousand dollar placebo." [85]

But if everyone were to vote by marking the same paper ballot, how would the voting system be able to meet the requirements of Section 301(a) of HAVA and provide independent accessible voting for the disabled? One answer: On September 13, 2005, the Board certified the AutoMARK The AutoMARK is a ballot marking system provides privacy and accessibility to voters who are blind, vision-impaired, or have a disability or condition that would make it difficult or impossible to mark a ballot in the usual way. In addition, it provides language assistance to voters who are more comfortable speaking an alternative language or who have reading difficulties. The AutoMARK voter assist terminal has been developed with input from election authorities and disability organizations, and meets all the requirements of HAVA.

Voters insert their standard optically scanned ballot-punch-card width or standard page width-into the slot, and the AutoMARK reads the ballot style. There's no need for a special ballot. Voters can use the touch screen to scroll through the options and make their selections. Then the device prints the selections and the ballot is returned to the voter to be cast in the regular fashion.

Disabilities which might prevent a voter from marking a ballot range from blindness or impaired vision, to an age-related condition such as arthritis or Parkinson's disease. In addition, a temporary condition such as a broken arm could make it difficult for a person to mark his or her vote. The terminal displays each race on screen in a variety of magnifications, and the voter uses the touch screen to make a selection. Blind voters or those with impaired vision can choose to listen to the choices through headphones.

The AutoMARK provides Alternative Language Accessibility: Assuring that all citizens in a diverse population can exercise their privilege to vote, visual and audible ballots in multiple languages can be stored on a single machine.

84 "Voting machine woes force ballot backup" *Chicago Tribune* http://www.chicagotribune.com/news/nationworld/chi-0603220085mar22,1,3756192.story?coll=chi-newsnationworld-hed

85 Statement of election company representative at the SBOE meeting, January 27, 2006.

The AutoMARK provides Alternative Language Accessibility: Assuring that all citizens in a diverse population can exercise their privilege to vote, visual and audible ballots in multiple languages can be stored on a single machine. Voters with disabilities and those requiring language assistance use the same ballot as any other voter. The device scans the ballot to determine the appropriate ballot style, and presents the choices for each race in sequence. Once the voter has made his or her selections, the AutoMARK fills in the ovals or squares and prints the write-ins as entered by the voter. The voter then takes the marked ballot to the tabulation equipment, just like any other voter. There is no need to print special ballots, and voters with disabilities get the same privacy and confidentiality as other voters.

Overvoting cannot occur when a voter uses the AutoMARK to mark his or her ballot. Software has been developed to ensure that no more than the proper number of candidates can be chosen for each race. The AutoMARK minimizes undervoting by providing voters with a summary page of their selections. Voters are able to notice any skipped races and are free to change their selections prior to printing.

Using a ballot-marking device allows voters with disabilities to use the same ballot as non-disabled voters and eliminates the need for DREs and devices to combine results. Total precinct results can be printed on a single report from the optical scanner unit, eliminating two superfluous printers. The result is a permanent paper ballot for each and every voter. A much simpler and more straight-forward approach than the triple system adopted by the City and County for the March Primary. Election judges are now familiar with paper ballots and optical scanners. The AutoMARK would be a new piece of equipment, but the City and County are planning on introducing a new touch-screen device in any event. The net result requires less training in that the functions of the HAAT in combining results would be eliminated.

Smaller jurisdictions in Illinois have already had experience with using this device; the AutoMARK was used successfully in McLean and Will Counties on March 21, 2006. City and County officials ought to be in contact with their counterparts downstate and have an opportunity to benefit from their experience.

c. Advantages of Paper Ballots with Optical Scanners

- **All voters use an identical ballot and the same system.** Absentee, disabled, military, and provisional voters use the same ballot; and the voter can immediately verify that the right ballot has been issued.

- **Paper ballots are easily understood by voters and are inherently voter verified.** All of us have had experience with pencils & paper; most of us have taken tests or filled out lottery tickets to be read by an optical scanner.

- **Paper ballots allow each voter to vote only once.** Each voter is given a single ballot when signing in at the polling place. Some DREs require “smart cards” to be inserted in the computer to allow voting. These could be compromised and used to vote several times.

- **Precinct-based optical scanners allow voters to correct mistakes and detect over-votes and under-votes**. Incorrectly completed ballots (e.g., overvoted ballots, smudged ballots, etc.) will be rejected by the scanner. Voters can then exchange the spoiled ballot for a new blank ballot and correct their mistakes. In the case of undervotes, they have the option of completing the same ballot or having the scanner accept it as is.

- **The paper ballot is the official record of the vote.** Since the vote is recorded by the voter on the paper rather than electronically, the scanner only counts the votes into memory and then deposits the ballot into a locked ballot box. The paper ballot marked by each voter is the official record of the vote and is used in recounts.

- **Paper ballots for optical scanners are easy to recount by hand.** Layout is clear and on quality paper, whereas DRE paper records are light, quickly-fading print on thermal, ATM-type paper; recounts are difficult.

- **Paper ballot systems easily accommodate additional voters at low cost.** If a precinct has an unexpectedly large turn-out, only additional privacy booths must be provided, since a single scanner can handle voters from multiple privacy booths and election districts.

- **Voters can continue to vote on paper ballots in the event of equipment failure.** Both DREs and optical scanners have back-up batteries; but in the event of a prolonged power failure or other type of equipment failure, voting can continue on paper ballots that later are either fed into the scanner or hand-counted.

- **Voting will take less time and lines will move fast with paper ballots.** Some people, particularly the elderly, find computers unfamiliar and will find the marking of a paper ballot more comfortable than using DREs. Separate ballot marking devices will enable other voters to continue voting even when it takes longer for a disabled person, an elderly person, or someone needing to use the multi-lingual features of the marking device to vote. Optical scanners take just seconds to read and verify a ballot, and no problems with lines are experienced in states using precinct based scanners**.**

- **Only one optical scanner and one small marking-device are required for each precinct and these will require less storage between elections.** Optical scanners and ballot markers are much smaller than DREs and can be stacked in storage, requiring far less storage space and cost during the year than DRE systems. They are also small, and easy to transport to and from polling places during elections and do not require professional movers to handle them.

- **The scanner only counts votes;** therefore, it is much less complex and will require much less maintenance and upgrading over the years than DREs which are a newer, unproven technology. Although the data is not yet complete, preliminary surveys indicate that DREs increase the per voter cost of elections by more than 50 percent.

- **Optical scanners are a reliable, mature technology that has been used successfully in U.S. elections for 20 years.** About 30% of precincts in the United States use paper ballots and precinct based optical scan systems (PBOS). Many states are now adopting PBOS systems to meet HAVA compliance.

The Illinois Ballot Integrity Project strongly endorses paper ballots as a permanent paper record as specified in the Illinois Election Code, Section 24C-2:

> "Permanent paper record" means a paper record upon which shall be printed in human readable form the votes cast for each candidate and for or against each public question on each ballot recorded in the voting system. (10 ILCS 5/24C-2)

Fundamental to election integrity is the inscribing of all votes (whether by hand or by machine) on durable paper ballots which are easily handled and verified by the individual voter. The voter's paper ballot must be the only **official** ballot for purposes of casting, tallying, counting, audit and recount.

Direct Recording Electronic voting machines (DREs or touch-screens) typically use two or three memory modules (primarily EEPROM) that produce variously: 1) An electronic vote that is directly captured and often combined with other electronic votes in central counting, 2) A narrow thermal paper "record" or log that supposedly displays the voter's choices in "human readable format," and 3) A barcode used for redundant audits (in Illinois) and/or recounts.

One problem with the VVPAT is that and distinct software modules create, respectively, the ballot's human-readable data, the ballot's barcode, and the data stored electronically. Consequently, it's entirely possible that there be a mismatch between two or more of those items, and that it go unnoticed. Dr. Rebecca Mercuri, of Harvard University's Radcliffe Institute for Advanced Study says, "Any programmer can write code that displays one thing on a screen, records something else, and prints yet another result. There is no known way to ensure that this is not happening inside of a voting system."

This chart, developed by IBIP demonstrates the superiority of paper ballots over the Verified Voter Paper Audit Trail (VVPAT):

A QUICK COMPARISON OF PAPER BALLOTS v. VVPAT PAPER RECEIPTS

Basic Ballot Terminology	
"Paper Ballot"	A paper record of a voter's choices that is used for the original vote count.
"Paper Receipt"	A paper record of a voter's choices that is used, if at all, only for passive voter verification with audits and recounts based on barcodes • Often denoted only generically, as "paper trail." • Often confused and conflated with "paper ballot."
"Paper Trail"	Refers collectively to both "paper ballots" and "paper receipts." Also refers to paper records that have even less value for a vote audit or recount. *e.g.* Printouts of machine vote totals.

Comparison and Advantages: Paper Ballot v. Paper Receipt	
Paper Ballot	**Paper Receipt**
The sole official and authoritative record of the voter's choices.	Of uncertain authority: In one court case, the judge disqualified the paper receipts.
A true official ballot: Serves as the original source for the vote count and for any audits or recounts. Constitutes a “permanent paper record” as specified by statute in Illinois and other states	Not a true “official” ballot: Does not serve as the source for a vote count unless and until an audit or recount occurs. But recounts are unlikely: • Most elections are not deemed "close" enough to merit a recount. • Recounts are troublesome and costly. Courts can deny a recount even when a recount is warranted. • Recounts are likely to be stonewalled once the nominal winner takes office.
Printed on durable paper or card stock.	Printed on a slip of thin thermal paper that may not constitute a permanent paper record
Reviewed carefully by the voter, who is aware it is the actual ballot and may be used for audit or recounting.	May be ignored or only skimmed, much like the cash-register receipt it resembles. (One study found only 10% get reviewed.)
Easily examined and verified by the voter.	• Behind protective glass with small type – voter cannot handle. • Actual audits use the printed barcode which the voter cannot verify
If the ballot gets damaged, the voter is savvy enough to ask for a replacement.	If damaged, may be ignored, because the voter believes the "real" vote is in the machine.
When deposited, is tangible proof that the ballot has been properly cast.	When printed, does not prove that the ballot has been properly cast by the machine.
Easy to handle original permanent paper record is intact for purposes of an audit or recount	• Fragile, difficult to handle during recounts. • Tests demonstrate that printers which produce VVPAT records often jam losing the VVPAT record of votes – up to 1.7% in one test.

The Illinois State Board of Elections has already given interim certification to a ballot marking device which can be used in conjunction with optical scan devices. An appropriate and feasible system for accommodating voters with disabilities currently exits obviating the need for additional complex, expensive, fragile, unreliable and insecure electronic devices such as DRE touch-screen terminals. The people of Chicago and Cook County expect and deserve voting systems which inspire confidence that every vote counts and that every vote will be counted. The Illinois Ballot Integrity Project urges the City and County to adopt a more reasonable approach to guaranteeing the integrity of the vote for its citizens.

d. A Word of Caution on Replacing the Current System

Easier said than done. Evaluation, review, selection and contract negotiation all take time. Faced with a 180-day time frame, City and County election officials will have to move with uncharacteristic speed to acquire and implement a new system for the November General Election. Availability of equipment may be an issue. The AutoMARK is marketed by Election Systems and Software (ES&S), a company that's having considerable difficulty in meeting its delivery obligations for the 2006 primaries in many jurisdictions.

In addition, considerable care and precise cost-benefit analysis must be done to ensure the best decision-making with respect whether to lease or purchase equipment. This is especially important because on December 13, 2005, the U.S Election Assistance Commission (EAC) adopted the 2005 Voluntary Voting System Guidelines (VVSG), which significantly increase security requirements for voting systems and expand access, including opportunities to vote privately and independently, for individuals with disabilities.

The guidelines will take effect in December 2007, at which time voting systems will no longer be tested against the 2002 Voting System Standards (VSS) developed by the Federal Election Commission. All previous versions of national standards will become obsolete at that time.
The voluntary guidelines provide a set of specifications and requirements against which voting systems can be tested to determine if the systems provide all of the basic functionality, accessibility and security capabilities required of these systems. In addition, the guidelines establish evaluation criteria for the national certification of voting systems.

The guidelines update and augment the 2002 VSS, as required by HAVA, to address advancements in election practices and computer technologies. These guidelines are voluntary. States may decide to adopt them entirely or in part prior to the effective date. Currently, about 39 states use the national guidelines in their voting system certification process.

It's important that the 2005 VVSG be taken into account in any system acquired for use in 2006. Failure to do so may result in a huge expenditure for a one-election system, thereby increasing costs again. Events could conspire to make the adoption of new systems for 2006 and 2008 a $100 million proposition in Chicago and Cook County – Where will the money come from. Indications are that another massive infusion of federal funds may be necessary as many jurisdictions may be faced with costs to upgrade or replace 2006 equipment – costs that could approach or even exceed the original acquisition costs.

e. A Few Immediate Suggestions

1) Super Judges. Both Langdon Neal and David Orr have suggested a new classification of election judge. The City describes its plan: "The appointment of an administrative judge in every precinct who would receive extensive training and extra pay to ensure that the proper procedures are followed on election day. This person would be a temporary Board employee, such as those hired for the early voting program." Orr envisions the position similarly, "Create New Election Judge Post. The Clerk's office plans to assign one election judge per polling place to serve as its 'equipment manager.' This judge will undergo extensive training focused solely on the set up of the voting equipment, trouble shooting to fix any equipment malfunctions, and overseeing the accumulation and transmission of election results." This is an extension of the "Technical Judges" used in the primary who received an extra 3-½ hours of training.

2) Provide Incentives for Pollworker Training. More than 4,000 judges in the City received no formal classroom training an the new equipment and procedures and about 2,500 County judges were similarly unprepared. Both the City and County allocate vast majority of election judge compensation ($100) for "warm body" pay with judges receiving that amount for just showing up. While overall pay needs to be increased in the hope of attracting more computer literate judges, base pay should be lowered to $50 and at least one mandatory session required to receive the additional $50. Additional training sessions should carry larger bonuses so that an election judge who attends 9-12 hours of extra training should earn at least $300 for the day. 15 hours of training and a 15-hour election day stint ought to earn at least a little more than minimum wage. Admittedly, this would double the budget amount for election judges in the City and County and cost about $3.8 million more than today's rates – worth every penny!

3) Process Absentee and In-Person Absentee (Early Voting) Ballots Centrally. With the 25% turnout in the Primary, Early votes totaled fewer than 30,000 in the City and County. That number is likely to double in the General Election. Current procedures require that these ballots must be processed after the polls close and require two judges to verify signatures and handle challenges. This creates a built-in delay, likely to be 40-60 minutes before totals can be run from the optical scan equipment. This means that 10,000 election judges are involved in his procedure which could be handled by many fewer at a central location and would speed reporting of in-precinct vote totals.

4) Clarify Write-in Procedures. An element of voter education ought to be an explanation that only registered write-in candidates are valid. A list of registered write-in candidates should be posted in each voting booth with these instructions. While some voters will still insist on writing in "Donald Duck" or similar humorous choices, the number should be reduced. Fewer ballots with invalid write-in candidates will reduce the time needed after the polls close to process write-ins, shortening the time to close out the optical scanner.

5) Modify the City ESC. The City Election Supply Carrier (ESC) is somewhat different than the County Voting Supply Carrier (VSC) in that the County VSC has a built-in shelf to hold the optical scanner. The City ESC should be retrofitted to match and the names made identical. This would prevent one problem that occurred in the City of jammed ballots resulting from then cardboard ballot box being installed backwards. By making the VSC and ESC nearly identical, manuals and training material could be designed to be the same, reducing duplication of effort and training costs.

6) City and County Forms Should be Identically Numbered and Color-coded. Again, these forms are nearly identical and serve the same purpose as mandated by statute. Eliminating differences would simplify training procedures and manuals. Printing costs could be reduced by combining the press runs for the City and County.

7) Manuals, Training Materials and Train-the-Trainer Efforts Should be Combined. Duplication of effort would be eliminated, production costs reduced and significant printing cost reductions realized. For example, customizing the cover and introduction would allow election judge manuals to be identical for interior content and reduce production costs while allowing for a single press run with custom binding options.

8) Ballots Should Not be Padded and Perforated. Voter frustration was increased as was pollworker workload by the choice to pad ballots. Ragged edges and inability to follow the perforations caused a large number of ballots to be torn in such a way that the beginning or ending (depending on how inserted) registration marks were damaged, resulting in a ballot rejected by the optical scanner as "defective" even though the voter made no errors. Ballots should be loose and paper banded (like currency bands banks use). Judges would need less time to stamp and initial ballots and the number of spoiled ballots would be greatly reduced.

9) Minor Conveniences. Extension cords should be equipped with triple taps to improve flexibility. A roll of duct tape (preferably orange) should be included to tape down power cords on floors/carpets to improve voter safety. Masking tape is inadequate for exterior signs and the plasticized surface of the voting booths – better tape is needed. Include 3-4 plastic wire ties (like automotive ties) to better secure the flag. Six archival pens are needed (alert/train judges to retain caps when giving pens to voters –

significantly increases the chance of getting the pen back). Scanner power cord (VSC) should be secured to back of tray to prevent blocking of ballot slots which create jams and damage ballots.

Most of the above suggestions are relatively easy to implement with coordination and cooperation between City and County elections staff. Every effort should be made to standardize procedures, forms, manuals, training materials and supplies (including the carriers). Resources and person power are scarce and should be employed in the most efficient manner possible. Duplication of effort should be avoided in every way possible and economies of scale introduced to reduce costs.

2. Looking Toward Elections in 2007 and Beyond

Choosing the best voting system for the City and County is a first priority. Security, reliability and accuracy are of paramount importance and of course compliance with applicable federal standards and the Illinois Election Code as discussed I some detail *supra*. Care must be taken, however, not to overestimate the capabilities of private voting machine companies. None is particularly large in terms of business organizations. Remember that less than 14 months ago Sequoia, with about 100 employees, changed hands for less than $20 million. Hart InterCivic is smaller still and Diebold and ES&S are only somewhat larger. The industry has developed at an especially slow pace due to lack of capital and expertise. Other technology (personal computers come to mind) have acquired considerably more sophistication and operating capabilities in the last two decades, far outstripping any functionality improvements in voting systems. In short, don't expect any dramatic improvements before 2008.

Legislative Action

On March 21st we saw the natural results of a procurement process that went astray when City and County officials abandoned their own requirements as expressed in the June, 2004 Request for Proposal, subsequently contracting for voting equipment and systems that did not meet those standards. The inadequacy of federal standards, primarily depending on "Independent" Testing Authorities, largely financed by voting machine companies has been amply demonstrated. Our State Board of Elections, pressured by vendors and local election officials alike failed to properly apply the certification procedures they themselves adopted, resulting in the improper certification of Sequoia's central tabulators and in-precinct scanners. Staff and pollworker training failed to provide the "knowledgeable, confident and comfortable" election judges Sequoia promised.

These circumstances led to a situation wherein federal, state, local and local officials proved to be ineffective and resulted in the voters of the City and County were provided with an election system that failed to perform on election day. What little protection and assurance that the voters of Cook County and the City of Chicago was provided by the Illinois Election Code and the revisions to that Code that were proved by the amendments enacted in 2005 as HB 1968. While HB 1968 was a good first step toward providing election integrity in Illinois, it was only that – a first step. Executive agencies like the State Board of Elections and local jurisdictional authorities like the Cook County Clerk and the Board of Election Commissioners have shown little propensity to do anything more than the minimum requirements under the statute. Apparently the remaining recourse for Illinois voters remains in either the Illinois General Assembly or the courts.

If the events of March 21st are not to be repeated in the Primaries and General Election of 2008, real election reform in Illinois rests with our State Legislature – A revised Election Code that adequately mandates the will of the people of Illinois must be enacted, and enacted soon. But that's only half the battle: new and stronger laws that deal with the complexities of voting systems will have to be vigorously enforced and voters will have to demand that enforcement.

The certification of voting systems and the conduct of elections can longer be allowed to be for, by and to the benefit of politicians, willingly funneling our tax dollars to vendors who produce insecure, unreliable and inaccurate electronic voting machines.

Let us not mistake what is happening: Democracy in America is under attack. This threat does not originate in far-off lands we only visit through television and travel magazines; nor is it being perpetrated by fanatics whose ideology we can barely comprehend. Rather, this attack is being mounted right here at home, by corporations that want to control our votes, aided and abetted by a compliant media and by

politicians beholden to those same corporate interests. The privatizing of elections, which is nearing completion, threatens to disenfranchise millions of Americans.

Privatizing the vote does not merely open the door to potential election fraud, it is, in and of itself, an egregious abuse of power, a transfer of another precious public resource—in this case the franchise—into the hands of powerful, entirely self-interested corporations. Unfortunately, our elected representatives and election officials haven't proven to be effective guardians of voter rights. Officials like Katherine Harris of Florida and Ken Blackwell in Ohio have made whole *careers* out of purge lists, voter intimidation, and aggressive partisanship in the administration of elections.

Privatized voting is a near-perfect example of how the undermining of government regulatory mechanisms leads to one-party rule and further deregulation in a self-perpetuating cycle. We see the same thing with the highly-concentrated corporate media. No conspiracy required for corporate entities to act in concert. Combinations are in their best interests, and successful corporations are all about finding and pursuing their own best interests.

It is time that the best interests of voters be served – not those of politicians and private corporations. The Illinois Ballot Integrity Project supports these principles:

Every Vote Counts – Count Every Vote

We support the proposition that every qualified voter must be assured a reasonable opportunity to cast his or her vote in every election in which he or she is legally entitled to participate.

Trust . . . But Verify

We support same-day in-precinct counting and tabulation of ballots, with multi-partisan supervision, public oversight and immediate public posting of the results.

We support independent multi-partisan audits consisting of a complete hand-count of the ballots in at least five percent (5%) of randomly selected precincts for all National, State, County and City elections.

We support publicly funded non-partisan exit polling.

We support safe and secure storage of all election records and ballots for a minimum of two (2) years.

We support multi-partisan election boards.

Equal Voting Opportunity

We support the establishment and enforcement of uniform voting standards, procedures, and methods applicable to all elections and all polling places.

We support independent, private, and convenient casting of ballots by all voters, regardless of physical capabilities.

We support the establishment of election day as a national holiday.

"Business as usual" has failed. The time has come for our elected and appointed officials to meet the challenges of the 21st century and their responsibilities to provide Illinois voters with fair, accurate, and transparent elections which preserve the integrity of the ballot and our American democracy.

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