TESTIMONY OF ROBERT A. WILSON

Mr. Chairman, members of the Committee: My name is Robert A. Wilson and I am a resident of Evanston, Cook County, Illinois. I represent the Illinois Ballot Integrity Project, a not-for-profit, non-partisan civic organization dedicated to the correction of election system deficiencies and ensuring fair, accurate, and completely transparent elections. The Mission of the Illinois Ballot Integrity Project is to inform and educate the public, media and government officials about important election integrity issues and to promote the adoption of legislation and policies designed to secure the democratic process. I serve as chairperson of the Suburban Cook County chapter.

I am the managing partner of Wilson & Associates, an Evanston-based strategic consulting firm specializing in providing strategic direction for not-for-profit and small business organizations. My undergraduate studies led to a degree in political science from Washington University in St. Louis. My postgraduate work in econometrics was at the London School of Economics and my terminal degree in law was granted by Laclede School of Law in St. Louis. I am a member of the California State Bar and have practiced in state and federal courts and before a number of federal agencies. Prior to becoming a consultant some 14 years ago, I had a 30-year successful business career with my last corporate position as president of the largest international subsidiary of a major transportation services provider.

I have been involved in the political process since I campaigned for Adlai Stevenson in 1952. The widespread media coverage involving the election problems in 2000 and 2002 spurred my interest in the election process and over the past four years, I have invested significant time in conducting research relating to voting systems and the conduct of elections.

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 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. The election day and night confusion, missing results, delayed reporting and post-election finger-pointing in the press has, I hope served as a wake-up call to vendors and election officials alike.

Based on reports that the Illinois Ballot Integrity Project has received and my personal experience, I would like to briefly review the pre -election process; what happened during the time the polls were open; what happened when they closed; and suggest some significant changes that would lead to a better experience and outcome for voters, candidates, election officials, election judges, pollworkers and suppliers. 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, 213 days from now. Early voting starts in October, barely more than six months from now.

A. Pre-Election Issues

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.

Buying a Voting 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."

Sounds awful, doesn't it? Mr. 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 millions, 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." [1]

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." [2]

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." [3]

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) [4]

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

[2] *Ibid*, page 3

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

[4] *Ibid*, page 3

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." [5]

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) [6]

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.

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.

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

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

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." [7] 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." [8]

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 that he would like 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 toss 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.

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. Yet, it would appear that it may not have been necessary to implement two new systems. And, certainly if they did, why weren't election officials better prepared to train City and County workers as well as election judges and pollworkers? 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."

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

8 Ibid, Volume 1, Section 1.5.29

"'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." [9]

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. [10] 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 [11] 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. [12] 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 and 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 all scheduled to be delivered in training-sufficient quantities by the week of December 5, 2005 [13]

Election Judge/Pollworker Manuals/Handbooks

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 resulted in somewhat different procedures and instructions for election judges and pollworkers.   A few examples should suffice to demonstrate this point:

- The Cook County "Election judge manual" contains some 131 pages whereas the Chicago "Judge of Elections Handbook" is but 72 pages long. It would appear at first glance that the County "manual" is substantially more detailed than the City's "handbook," but it should be noted that the County manual uses larger type, a distinct advantage for the average election judge who tends to be older than the average voter and thus potentially having less acute vision.

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

[10]   We spoke with a person who identified herself as Shelly Quinn

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

[12]   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

[13]   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 this format, as well as an apparent effort to reduce printing costs by reducing the number of pages, a 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," and the City chose to mount it separately on top of a fold-out cardboard ballot box. [14] The County design was markedly superior and required less set-up time and provided a more stable platform. [15]

- 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 [16] and form 300 in the County, [17] 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.

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14 See City Handbook, page 17.

15 See County Manual, page 26.

16 See City Handbook, page 35

17 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.

Training of 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. With two new systems, which no judge or pollworker had ever had any experienced with, 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 what-so-ever on the new election equipment or procedures. [18]

- 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. [19]

- 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. [20]

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

19 *Ibid*

20 "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.

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 on election day.

Recruitment of 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.

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?

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.

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.

Procedures

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)

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.

B. Election Day

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, [21] whereas in the County the designated "Supply Judge" received the key to the VSC at a central location. [22]

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.

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.

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[21] See City Handbook, page 10

[22] See County Manual, page 15

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

When the Polls Were Open

Reports that the Illinois Ballot Integrity Project has received 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

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: [23]

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

23   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

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

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. [24]

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. This leads to the following possibilities:

- Sequoia substantially under-delivered and thus didn't perform under its contract(s).

- The permanent failure rate of scanners and DREs was massive.

- The City and County failed to prepare sufficient replacements for deployment on election day.

- There were an insufficient number of City and County employees available to prepare and deliver replacement units.

- All of the above or some combination of the above.

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 . . . " [25]

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

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

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.

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 and 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.

Why are We Surprised?

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. [26]

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." [27]

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. [28]

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

[26] "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

[27] "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

[28] "County Certifies Vote Tally" *Albuquerque Journal*, November 19, 2002;

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. [29]

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. [30]

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. [31] 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. [32]

June, 2004, Dona Ana County, New Mexico: Insight optical scanners failed the pre-election testing and 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. [33]

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." [34]

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

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

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

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

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

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

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

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. [35]

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. [36]

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." [37]

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.

Public trust in 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.

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[35] "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.

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

[37] "Glitches, lines hamper early voting," *Palm Beach Post* October 19, 2004. By John Murawski, Palm Beach Post Staff Writer.

Summary and Conclusions

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 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 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.

- 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 this clean slate which 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 significantly increased the costs of administering the election while compressing training time and squandered 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 best be 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 what-so-ever 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.

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 dealing with the problems 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 ensure voters that the problems are being looked at objectively and that election officials and Sequoia must honestly admit what went wrong and make a real effort to improve the situation.

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 is at stake.

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