U.S. Senate Committee on Rules and Administration
Hearing on "The Hazards of Electronic Voting: Focus on the Machinery of Democracy"

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Thank you for the invitation to appear before you today to share with you my comments on the use of technology in the voting process. My professional background is one of service in local government. Indeed, my passion comes from serving the public! I, like many other government employees at the federal, state, county, and local level, am committed to providing excellent customer service and a quality product, while always being mindful that the cost of providing these services is borne by all taxpayers…who are also our customers.

<u>Brief Background</u>

Prior to November 2000, the business of elections gained little attention at the national level. Local election administrators managed to provide service to their voters often operating on a shoestring budget. Indeed, innovations in the voting technology arena were basically non-existent due to the fact that election office budgets historically did not receive funding to purchase and deploy new systems. Without a market to sell to – vendors had no need to innovate new solutions.

Behind the scenes in election offices across the country, election administrators and their staff work tirelessly, enduring long hours and low pay, to prepare for and manage voting on Election Day. Trust me; if any one knows the strengths and weaknesses in the voting systems, it is these men and women who are responsible for managing and conducting elections in this country. Every election official in America wants the election to be successful for each and every voter. It is important to us that voters have a good experience while voting.

Election officials also know all too well that elections garner little attention, unless there is a close one. I have had losing candidates tell me, "I could not have lost the election in that precinct, because I went door to door and the people that I talked to told me that they were going to vote for me." As we all know, candidates lose control the moment that a voter steps in the voting booth to cast a secret ballot. At that point the voter is in control – the voter can choose which races to vote on or not vote on; or the voter can even choose not to vote for anyone on the ballot – again, the voter is in control – not the election official, the candidate, or the voting machine.

What Challenges Do Elections Face

One of the major issues facing elections nationwide is **"change"**. Over the past few years, there has been continual change - change in federal and state law; change in policies and procedures; and change in the use of technology to manage voter registration and vote collection and tabulation. The ability to manage this change differs across the country, based on the size of the jurisdiction, number and skill sets of existing staff, resources available to manage the change, and probably **the most important – the time to implement the change**.

Years ago, I was told by a mentor to always remember that, "Change = Stress". Those words have stayed with me and ring loud and clear as we step back and look at the impact of change on the business of elections. Nationwide, thousands of jurisdictions have changed voting systems, impacting approximately 200,000 polling places, which are staffed and managed by 1.4 million pollworkers.

When change happens too quickly, there are consequences. In the words of Franklin Roosevelt, "Change is like fire – if uncontrolled it will consume us." We have all read of pollworkers who have failed to properly open and close new voting equipment on Election Day. Indeed the business of elections has been in a mode of constant change since October 29, 2002, when the Help America Vote Act was signed into law. These changes have ranged from implementing provisional voting and voter identification policies and procedures…to developing and launching statewide voter registration databases…to deployment of new voting equipment. We must also be mindful of the fact that any change in the election business must be deployed in an environment where there are no second chances….no "do-overs"; and, the project due date is set in stone, because election dates are a matter of law. My point is simply this: we have changed and stressed the election process to the breaking point. Some recognition must occur that it is important to let all the changes get perfected before we continue to push massive additional changes.

We all recognize that elections are the "heart" of democracy. There is great emotion and passion in this business – from the first time that an 18 year old cast a ballot; to the first time that a blind voter votes unassisted; to informing a candidate that they did not win the election. We know that in any race, there is only one winner, and there is always a loser. Based on the energy of the race, the loser faces a different type of emotion, and the first phase is usually one of denial, quickly followed by disbelief, and then usually followed by action. Election procedures and laws are in place to manage that reaction, specifically allowing for losing candidates to request a recount of votes cast. In some instances the losing candidate looks to errors in the voting process, to challenge/contest the

election. Again, laws and procedures are in place to allow all candidates the right to validate that the election was conducted properly and all legitimate votes were counted accurately. But simply alleging that the process is "broken" doesn't make it so. While there indeed have been real problems in some elections, far less than 10 percent of the alleged problems ever can be shown to be actual problems. Partisans and candidates have a difficult time accepting that losses are not caused by the process itself. To be sure, there have been and are likely to be real situations from time-to-time but not as often as alleged.

Managing the Various Voting Systems

As noted above, historically voting systems in our country have rarely changed. An example, of course, is New York State, where lever machines have collected votes for more than 40 years; and for over 30 years punch card voting equipment was used at one time or another by well over half of the jurisdictions. Indeed, never before has change in voting systems happened nationwide. All of us - including the voters, media, candidates, elected officials, election officials, and pollworkers - are still experiencing the impact of this massive change.

We are here today to discuss the hazards of the voting equipment that is currently in use across the country. It may be helpful to step back briefly to review how things "used to be" before November 2000:

- o **Punch card systems** were easy for pollworkers to manage on Election Day. Punch card devices and booths were set up; punch cards were issued to voters; and voters deposited their voted punch card into a ballot box. The ballot boxes were transported back to election central where the punch cards were fed into scanners and tabulated by a computer software system.

   Hazards of voting on punch cards: Election management concerns clearly revolved around the "chad" from each voter's punch card. Was it punched all of the way through? Did it become disconnected during transport?   Was it hanging by just one corner or two corners?   (In some jurisdictions which corners were connected determined whether or not to count that vote.)

- o **Lever machines** were easy for pollworkers to manage as well. The difficult part of managing lever machines involved the transportation of the actual equipment to polling places. Mechanical levers on the face of the machine triggered the increase of an "odometer-type" counter on the back of the machine. At the end of the day, the cumulative counter numbers for each race/question were recorded and taken back to election central to be combined with totals from all polling places. It should be noted

that there has never been an individual record of each person's vote on a lever machine, and the majority of voters in New York State to this day have expressed a strong desire to continue voting on the lever machines. And the fundamental faith in these systems by the voters has never been shaken by the lack of paper associated with the lever machines.

> **Hazards of voting on lever machines**: Lever machines are mechanical and have various failure points, i.e. levers and cumulative counters can stop working at any time. Since there is no individual record collected for each voter's ballot, there is no ability to recreate the individual voted ballots for the purposes of conducting a manual recount.

o Optical scan ballots were also easy for pollworkers to manage. Portable voting booths were set up and the correct ballot was issued to each voter. Voters used either a special pencil or pen to connect arrows or fill in ovals to mark their selections on the ballot. The ballots were deposited into a ballot box and transported back to election central where they were fed into scanners and tabulated by a computer software system. In some jurisdictions, precinct-count optical scanners were deployed to polling places and voters fed their ballots into the scanners which were attached to a ballot box. At the end of the day, the memory cartridges and ballot boxes from each of the scanners were delivered to election central where the memory cartridges were loaded into the computer software system.

> **Hazards of voting on optical scan ballots and scanners**: One of the major hazards of voting on optical scan ballots is the prevalence of marking errors by voters. Voters often circle the candidate name or "x" the oval instead of filling the oval in completely. Voters must use the correct marking instrument – a red ink pen will often not record when the ballot is read through the scanner. Scanners must be properly calibrated or the markings on the optical scan ballot will not be read correctly. The voter's ballots are stored sequentially in the ballot container. The first ballot in the ballot box is that of the first voter; and the last ballot belongs to the last voter who cast their ballot in that polling place on Election Day.

> There is no paper audit trail on precinct count optical scan equipment to confirm that the voter's choices were recorded correctly after the ballot is scanned. The scanner only notifies the voter of an under/over vote. Voters that cast

their ballots on optical scan equipment must trust that the equipment read their votes correctly and recorded them accurately on the internal memory cartridge.

NOTE: A statistical analysis of the manual audit for the May 2006 North Carolina primary revealed that discrepancies between the electronic and the manual count were even higher for optical scan ballots than for the DRE/VVPAT records.

o Direct Record Electronic (DRE) voting equipment was slightly more challenging for pollworkers to manage. This equipment required pollworkers to be thoroughly trained to understand how to properly open and close each machine for voting purposes. The voting equipment was activated by a pollworker enabling the voter to push buttons on the face of the machine to select their choices. DRE equipment eliminated the issues noted above relating to punch card and optical scan ballots as it relates to marking errors by voters. At the end of the day, the memory cartridges from each of the DRE machines were delivered to election central where they were loaded into the computer software system. It should be noted that the DRE equipment collected information about the votes cast which could be printed for manual recount purposes.

This equipment also reduced the nation's dependence on paper ballots, as each machine issued electronic ballots, as needed based on the number of voters choosing to vote in each election. The latest model DRE machine can present any ballot style, in any language, including an audio ballot for visually impaired voters – for the entire jurisdiction. This model has allowed election officials across the country to consolidate polling places and implement vote centers.

Hazards of voting on direct record electronic (DRE) voting equipment: DRE equipment also has mechanical parts, which can fail. Each vote is stored within the internal memory of each machine as well as on the memory cartridge. Until recently, there has been no paper audit trail on DRE voting equipment to confirm that the voter's choices were recorded correctly.

Each ballot is randomized when the "cast vote button" is pressed, ensuring that the order of the ballots cannot be matched to any voter.

The hazards of punch card voting are gone. The majority of the existing systems used throughout the nation is either optical scan or touch screen. Both contain

some type of memory cartridge which is used to capture the votes cast. After the polls are closed, these memory cartridges are returned to election central and loaded into the computer software system – the same process that was done in many jurisdictions prior to November 2000.

The difference today is that the entire country is using one of the above methods, and jurisdictions that moved from a paper based system (punch card) to a touchscreen have experienced the greatest change in how elections are managed and votes are cast. One example is the City of Chicago and Cook County, Illinois. We have all read of their recent challenges in managing the change from punch cards to voting machines deployed in polling places on Election Day. It should also be noted that jurisdictions that were accustomed to managing voting equipment in the polling places were able to more easily and successfully transition to a different type of equipment. Again, the key word is "change" and how the change is managed and orchestrated.

Election officials nationwide know that one of the key ingredients to successful elections lies in the hands of our nation's pollworkers. The new voting equipment has increased the responsibilities of the polling place workforce. As a result, training of pollworkers has become the most critical component leading to their success on Election Day. A second component is adequate Election Day support systems in place to deal with any repairs needed because of mechanical breakdowns, i.e. printers and paper issues.

These "gatekeepers of democracy" have faced the greatest change with additional hardships: long hours and low pay. They also are faced with the burden of implementing this change on a job where they often work only one or two days a year. Needless to say, the impact has been the greatest on these individuals. I respectfully urge that you keep them in mind as we continue the dialogue on how to manage the voting systems in this country.

Software and Hardware Components of the "System"

I must admit that my experience as an election official that has managed optical scan, DRE, and touchscreen equipment, is that it is the hardware component that often creates the issues on Election Day. Scanners jam and printers jam and fail. These are the issues that cause stress for pollworkers, voters, and election officials.

Many of you probably have stood in line at a grocery store when the cash register tape ran out or the printer malfunctioned. At that moment, everything stops until the machine is repaired and/or the paper is replaced. The clerk often is not successful in replacing the paper roll, and often has to call for store manager assistance. Please stop for a moment and remember how you felt in the line waiting for the cash register to be repaired. Now, multiply that times the number of polling places and pieces of voting equipment in this country. At some

point, some where, a voting machine will be out of use while the paper is replaced or the machine repaired. Those of us with experience managing voting equipment in the field on Election Day know that this is a fact. It is important to remember that paper has created more problems in elections and for voters than all other voting systems problems combined. Whether paper or electronic voting, this still comes down to people and processes in order to assure the voters of a positive experience and that voter's have the best opportunity to have their vote counted.

My experience and that of my county in Kansas where our voters have voted on DREs in polling places since 1988 is that these voters made far fewer errors – and therefore more correct votes got counted – than our voters who vote absentee by mail using paper ballots.

SUMMARY:

I know that we find ourselves at a crossroads – whether to move forward and continue to invest in innovative technology solutions for elections; or stop and stay the course by relying on a paper printout to confirm the voter's choices.

Again, election officials know the strengths and weaknesses in the voting systems. Those who are currently managing touchscreen voting equipment with paper trails will tell you that the printers malfunction and jam throughout the day. **If this paper record is declared to be the "official ballot", we will have truly stepped backwards and will be disenfranchising voters whose ballot was cast when the machine jammed, ran out of toner, or failed to print. *NOTE:* ** *In November, 2006, Guilford County, North Carolina's mandatory manual audit of VVPAT records in 1% of the precincts (2 of 159) revealed that slightly more than 1.5% of the VVPAT records were missing due to printer jams that had occurred during voting. Countywide 9% of all voting machines had printer problems reported with an estimated 40% to 50% of those involving paper jams that destroyed voter records. Statewide in North Carolina the VVPAT printer problem rate averaged 11% of the 5,246 voting machines used in the election.*

If a paper printout is mandated for all voting systems, please allow sufficient product development time to ensure that the end product is one that can sustain the rigors of voting continuously on Election Day. If the printer fails, the voting stops. Just like purchasing inferior quality tires for an automobile will cause the tires to go flat when you are least expecting it – the same analogy is true with printers on a voting machine. If the product is inferior, the machine will stop when you are least expecting it.

Whatever your decision, I urge you to go slowly. Any additional massive change requires time to implement….time for vendors to develop a quality product…time for the hardware to be thoroughly and rigorously tested…time for vendors to

manufacture new systems and components…and most importantly, time for election officials to properly train pollworkers on the use of the new system.

Anything less, will further stress the face of elections in this country and will impact our voters trust in democracy.

*Biographical Sketch – Connie Schmidt, CERA

Connie Schmidt retired as Election Commissioner for Johnson County, Kansas in December 2004, after serving local government for 31 years. During her tenure as Election Commissioner, her office introduced many new voter outreach and education programs. In 1996, the Johnson County Election Office was one of the first election agencies to launch a web site for voter information, including posting election results on the web and providing voters the opportunity to log on to the Internet to view their sample ballot and find their voting location.

Under her leadership, the Johnson County Kansas Election Office received numerous awards, including (1) 1997 NACo (National Association of Counties) Achievement Award for its civic education and public information program entitled "Promoting Voting – Student and Community Outreach"; (2) "Best of the Web" in the January 1998 issue of Government Technology magazine; (3) "Digital Government Award of Excellence" July 1998; (4) 1999 NACo Achievement Award for its bi-state public/private partnership program to recruit election workers, entitled "Making Voting Popular"; (5) 2001 NACo Achievement Award, for implementation of the Celebration of Patriotism Foundation; and (6) 2002 NACRC Best Practices Award for the "Celebrate the Vote" program.

At the national level, she served as the chair of the Professional Education Program Certification Board for The Election Center, and as a member of the NASED Voting Systems Standards Board. At the state level, she served as a member of the State of Kansas HAVA Implementation Committee. In December 2004 she received the National Association of Secretaries of State (NASS) Medallion Award for outstanding service to American democracy.

She currently owns an election consulting business and has provided services to local, state and federal government agencies, including the U.S. Election Assistance Commission.