

# VOTING INTEGRITY STUDY

League of Women Voters of Nashville  
December 4, 2006

## **Introduction/Executive Summary**

### Purpose

The LWV Nashville has conducted a Voting Integrity Study of the Nashville-Davidson County election system using the League of Women Voters of the United States' publication, "Helping America Vote: Safe Guarding the Vote," as the study guide. The study involved direct observation of many aspects of the election process as well as interviews with key election officials

The report is organized following the LWVUS publication, specifically, the report's "recommended practices for election officials":

- Voting System Security
  - Accountability, Openness and Transparency
  - Uniformity
  - Testing
  - Physical Protection of Voting Systems
  - Preparation Prior to Election day
  - On Election Day
  - After Election Day
  
- Voter Registration Systems

This study was conducted during the August 2006 County General Election and Statewide Primary Election. This election was the first federal election in which the Davidson County Election Commission used the new iVotronic electronic voting machines. Using the LWVUS publication as a study guide, the committee interviewed various Election Commission officials as well as observed many aspects of the election process including the testing of machines before Election Day as well as the voting process during Early Voting and on Election Day.

### Findings

The major findings and recommendations of the study are:

- The Nashville-Davidson County Election Commission is generally making a good faith effort to follow federal and state election laws and has a staff that is dedicated to ensuring as smooth an election as possible within the resources available. *The LWV commends the Davidson County Election*

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*Commission for mailing a sample ballot to every registered voter and strongly encourages that this become standard practice.*

- Procedures and protocols to ensure that the new electronic voting machines are functioning properly are not adequate. *The LWVN strongly recommends that the Tennessee Election Commission adopt and Metro Election Commission follow the practices set forth in the Voting Systems Performance and test Standards developed by the Federal Government. In addition, the Metro Election Commission should more fully develop staff capabilities to include staff with background in statistical analysis and polling and survey procedures to ensure adequate capability to develop effective and formalized testing procedures.*
- Physical protection of the voting machines needs to be enhanced. *The LWVN recommends enhancing security for the voting machines by at least adding video surveillance at the warehouse and a more formal check in/out process for the machines. The temperature in the warehouse should also be climate-controlled to protect the machines and ensure compliance with temperature related warranties.*
- The existence of dual state and Davidson County voter registration databases presents the possibility of confusion or error. *The LWVN recommends that issues inherent in maintaining dual databases be resolved. For example, which one prevails when there is a discrepancy?*
- Training of poll workers is a continually improving process. The limited audit of election results which showed that there were discrepancies in thirty precincts between the public vote count and the poll officer's report indicates a lack of understanding or training on Election Day procedures. Deficiencies were also noted in machine operator training, especially as related to accommodating voters with disabilities. *The LWVN recommends that training be enhanced; the report contains many suggestions.*

A more detailed discussion of the study findings, observations and recommendations follows.

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### **SECTION ONE: VOTING SYSTEM SECURITY**

#### **ACCOUNTABILITY, OPENNESS AND TRANSPARENCY**

##### **LWVUS Recommended Practice #1: Require bipartisan or third party monitoring of sensitive election procedures.**

Tennessee election law requires that the poll officers and workers are split between the Democrats and Republicans. However, given the reality of the difficulty in obtaining poll workers many poll workers may be asked to represent a party, even though they may not be active members of that party.

Candidates and third party organizations, such as the League of Women Voters, are also allowed to have observers at each precinct. The procedures for becoming a poll observer are reasonable, and in the course of this study, the poll officers were cooperative with requests to observe various procedures at the precincts. Attempts to observe the testing of the machines were more problematic – in part because the notification process had become lax.

While the law requires that any voter assistance be provided by a worker from each party, in practice this was often observed not to be the case. However, no instances were observed of a poll worker providing assistance that seemed to be partisan or steering the voter.

##### **LWVUS Recommended Practice #2: Require tracking and documentation of all procedures, from the testing of machines to the handling of ballots.**

As discussed in later sections regarding the machine testing, at this point there are no logs established for the new machines to track testing, maintenance and other procedures. The older machines had a paper log attached to each machine to record all activities related to that machine. As yet, there is not such a paper log – or even better a computerized log – set up for the new machines. Perhaps bar code technology could be employed to track the use and maintenance on the machines. Maintaining logs is the most accurate and efficient way to identify a specific machine that is not working correctly over a period of time, and to ensure that any identified defect is corrected.

##### **LWVUS Recommended Practice #3: Require transparency in the operation and management of voting systems**

For this study, LWV observers were able to witness various aspects of the voting process. As noted elsewhere, arranging to view the machine testing was not as

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easy as it should have been. LWV observers were present at the opening of polling places, during the day, as well as at the closing of the polls.

After the votes are collected from each of the polling places, the data cartridges are taken to an Election Commission office where all are loaded into an Election Manager laptop computer. The Election Commission states that the public is informed and allowed to view results being calculated at this central location. Based upon their assertion that a wide range of public from media to candidates to interested public attend, it seems that whatever notice is given is effective.

### UNIFORMITY

#### **LWVUS Recommended Practice #4: Establish statewide practices for the management and operation of voting systems.**

As in many other states, in Tennessee primary responsibility for elections rests with the county election commissions. State law, the State Election Commission and the State Coordinator of Elections provide some framework and guidelines for the elections in Tennessee. Tennessee state law sets out a uniform closing time for polls: 8 p.m. eastern time and 7 p.m. central time. The law mandates that the polls must be open a minimum of ten hours and can be open for a maximum of 13 hours.

Currently there are no statewide practices or required procedures for the management and operation of the voting systems and neither federal nor state laws require that there be such. However, the Tennessee Coordinator of Elections reported that after the November elections, based on experience with the various new machines in use across the state, he expected existing state regulations designed to apply to the old machines to be revamped to reflect the new machines.

*Recommendation: The LVWN strongly recommends that the Tennessee Election Commission and the Tennessee Coordinator of Elections adopt the practices set forth in the Voting Systems Performance and Test Standards developed by the Federal Government.*

#### **LWVUS Recommended Practice #5: Require that all systems, at a minimum, have been state certified and meet all federal voting system standards.**

Voting machines in Tennessee have to be certified by both the State Election Commission (appointed by the General Assembly) and the State Coordinator of Elections (appointed by the Secretary of State). The policy in Tennessee has been and continues to be that all machines must meet federal standards. In

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addition, the State Election Commission has said that it would like to view the particular machine in operation. In practice, this means that the Election Commission observes machines – or new versions of voting machines – when the voter-interface with the machine is new or changed. They do not necessarily observe software or other internal changes in operation prior to certification.

As in the past, in the latest round of certification, for the new machines in use, Tennessee only evaluated machines submitted by vendors and did not actively solicit machines to be submitted for certification. Four companies submitted certified machines: Diebold (both touch screen and optical scanner), ES&S (touch screen and optical scanner), Hart Intercivic and Micro Vote, Direct Record Electronic (DRE) systems only.

Certification is an on-going process and additional machines can be submitted for certification at any time; however, there are no large voting machine purchases anticipated in Tennessee in the near future.

Only the optical scan systems certified would meet the LWVUS criteria that all electronic voting systems provide or use voter verified paper ballots. Any additions to provide a voter-verified paper ballot component to the touch screen voting machines currently in use was not evaluated during this study. At present, no such system is certified by the State Election Commission and State Coordinator of Elections.

### TESTING

#### **LWVUS Recommended Practice #6: Test every voting machine to ensure it is operating properly.**

Davidson County does not currently test every machine prior to elections. In the August 2006 election that was the subject of this study only slightly more than one quarter of the machines were tested, or one machine per precinct.

Observation of this testing indicated that it was cursory in nature, consisting of casting one vote for every candidate and then reviewing the results to ensure that those votes were recorded correctly. Experiences in other jurisdictions generally indicate that problems may occur when certain thresholds of votes cast are reached. By casting only one vote per candidate this defect could not be ruled out with the testing performed.

The Davidson County machines also utilize two different types of removable memory: a flash memory card and a cartridge type device. The testing only involved one cartridge per precinct, or the same ratio as the machines tested.

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The flash memory card used in addition to cartridges on these new machines was not tested separately on any of the machines.

These machines were newly purchased and most had never been used before. (Some were used in a small election in a Davidson County satellite city and some were borrowed from the vendor after having been used in another state.) As part of the receiving procedure, each machine was inspected according to a check list of 16 procedures. These procedures ranged from voting one demo ballot to shaking the machine to listen for loose parts to checking battery voltage.

Because the receiving tests did not include logic and accuracy testing it was especially important to perform exhaustive testing prior to the August election. An outside accounting firm was contracted to perform tests as specified by the Election Commission. These tests included a range of functions including verification that the starting count was zero, anti-tamper controls were intact, and technicians were correctly recording counter numbers. No tests specifically designed for logic and accuracy were performed by the accounting firm. Other functions performed by the accounting firm involved observations on Election Day and recalculation of votes after polls closed. Also, not all machines were tested or evaluated by the accounting firm. Some polling places with heavy turnout were given additional machines throughout the voting period and the additional machines were not evaluated by either the accounting firm or the Commission.

Prior to the election there were no formal or written testing procedures for employees to follow, leaving it up to employees who will be doing the testing to develop their own. This placed responsibility on those who may not have the appropriate backgrounds to develop such procedures. This was reflected in the fact that there was significant confusion over what logic and accuracy testing meant. The employees routinely refer to "zeroing out" of the machines as "testing." After the election a testing procedure listing was prepared by the Commission staff and provided to LWV committee members. This list included the same tests and zeroing out procedures observed by LWV representatives.

Additionally, the Election Results Manager laptop computer where the votes are gathered and analyzed was tested by voting two districts and then loading that data into the computer.

Documentation was not provided showing that volume testing, required to comply with the HAVA error rate provisions, was ever done. Persons who were present during evaluation of machines being considered for the recent purchase indicated that some test votes were cast, but the number of votes cast was not sufficient to establish an error rate of less than 1 in 500,000 per HAVA standards.

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Documentation from the vendor or the State of Tennessee to support this facet of certification was also not provided.

*Recommendation: It is strongly recommended that the Tennessee Election Commission and Tennessee Coordinator of Elections adopt and the Davidson County Election Commission follow the practices set forth in the Voting Systems Performance and Test Standards developed by the Federal Government.*

*Further comments or recommendations include the following:*

- *Specific procedures based on the Testing Standards should be developed. All procedures associated with the maintenance and testing of voting machines should be developed by appropriate committees of the public and Davidson County employees and then formalized. Then the execution of these formal procedures should be carefully documented. The documentation should be maintained for an appropriate period of time to allow for proof of valid elections and for proof that testing was uniformly conducted by all employees on all equipment.*
- *There are no procedures to effectively track repairs or maintenance on each of the machines. This practice leaves Davidson County vulnerable to having no recourse for defective equipment, as no effective documentation will exist to exercise any warranty or claim to breach of contract with the manufacturer. Testing procedures are inadequate to detect all but the most glaring defects in the new equipment. Since these machines are brand new and unproven, the lack of such records could become a significant problem.*
- *The Davidson County Election Commission does not appear to have sufficient qualified employees dedicated to maintaining voting machines which are increasingly technical in nature. It would be advisable for the Election Commission to dedicate a fully qualified staff member who is responsible only for the programming and technical upkeep of the voting machines. Staff capabilities should include a good background in statistical analysis and polling / survey procedures to fully enable this person to understand and develop effective and formalized testing procedures.*

### **LWVUS Recommended Practice #7: Perform uniform, public testing of voting systems**

As an initial matter, the testing was not effectively open to the public. When LWV Nashville representatives first inquired about observing the testing there was some resistance from staff. Employees ultimately agreed to the observation

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of testing but the scheduling made it unlikely that any other member of the public could attend.

Testing began only two days before early voting commenced. League members were notified the evening before of the test plans, and were then subsequently phoned one hour before the scheduled test and informed that the test schedule was being changed to later in the day. Although a representative of the Davidson County Election Commission stated that letters were mailed to candidates and political parties informing them of the testing, the only letter sent was mailed in January, 2006 providing dates for inspection of machines associated with a primary election that took place in May. That election did not use the new machines. No evidence was provided that public observation was ever provided for the August election or for the new machines. The negative response of the election commission employees to inquiries about testing combined with the floating nature of the test schedule made it unlikely that any member of the public other than League representatives were truly notified of the testing.

Testing procedures were evaluated against the LWVUS guidelines. These three main guidelines are reviewed below:

1. Testing should include at a minimum (1) logic and accuracy testing for electronic systems, (2) testing to ensure that proper ballots have been loaded into the systems, (3) checking to see that all voting systems have been properly delivered to polling places

As discussed above, logic and accuracy testing was not adequately performed. Testing to ensure that proper ballots were loaded into the systems was limited to a fraction of the machines.

League representatives were told of reports that a small number of voters were disenfranchised by not finding the correct ballots on the machines on which they voted. However, the reports could not be substantiated later because no verification of their complaint was available to voters after their vote was cast. This issue was further complicated by the fact that the subject election included primary elections in which the voter was required to select a party before having the appropriate ballot pulled up by an election worker.

2. On Election Day (and during early voting) verify that the number of voters entering the polling place is equal to the number of votes cast in the voting place.

Poll workers were trained to perform appropriate reconciliation procedures to ensure that the number of votes cast was equal to the number of voters. Each voter signed a poll book, and in turn, each signature is compared with

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the voter's signature recorded electronically in a master database of voters. There was a log kept indicating the number of votes at the end of each day and procedures were established to compare those numbers against the number of voters.

Audit results indicated one precinct with a deviation of more than 100% from the public count reported by the Poll Officer. This deviation was an under vote, in which approximately 600 voters cast ballots but only approximately 300 votes were counted. Three other precincts had small discrepancies. Discrepancy verification was hampered, however, because among those precincts checked by auditors, 26 had no public count number provided by the Poll Officer. Especially with the audit work of the accounting firm, there appeared to be adequate procedures in place for poll workers to verify that the voting machines were properly delivered, not tampered with, to the polling places and that they remained tamper free throughout early voting and election day. Except for the 30 precincts referred to above, the auditors reconciled the public count with the vote count perfectly for the remaining 142 precincts.

3. Perform Parallel Monitoring on Election Day and During Early Voting – Randomly Pulling Voting Machines From the Voting Place on Election Day and Testing Them to Ensure Accurate Recording and Tallying of Votes  
This was not done during the August 2006 election.

*Recommendation: Following the practices set forth in the Voting Systems Performance and Test Standards developed by the Federal Government as recommended above would also address the above noted deficiencies.*

### **LWVUS Recommended Practice #8: Verify that the electronic and optical scan machines used are the same as the systems that were certified.**

To ensure meaningful compliance with federal and state standards, there should be procedures to confirm that the machines and software received and in use are the ones that have been certified.

In response to requests for documentation of certification test plans and results, the Election Commission provided an excerpt from a sales proposal by the vendor ES&S stating that "iVotronic" machines were certified as compliant with all federal requirements. Additionally, the Commission provided an excerpt from a 2003 document, stating that voting machines would be "recertified" at an unidentified point in time. However, this document did not appear to have any bearing on the certification of the new iVotronic voting machines since it was

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written several years before the new machines were purchased and does not discuss the initial certification of these machines.

Documentation from the State identifying the specific hardware and software certified was not provided either. Davidson County Commission staff stated that they had received such a letter during the purchase process that did identify the machines more precisely, but copies of this letter were not provided, so exact machine and software certification was not available to League members. Thus, the processes used to certify the machines were not provided to League Members by the Vendor, the State, or the Election Commission.

In response to a request for the official listing of certified machines for Tennessee the State Coordinator of Elections sent a partial listing of "qualified machines", apparently published by the National Association of State Election Directors (NASSED), with certain machines marked with a highlighting pen. The word "Tennessee" does not appear on the document anywhere. The significance of this document, if any, could not be determined because we did not receive the documentation of the certification process that was requested. The NASSED listing does include several versions of the iVotronic machines but there was not sufficient documentation provided to members of the committee to verify that all parts of the machines in use in Davidson County, or the software that is utilized by these machines, were among those that have been tested and qualified by the NASSED.

During receipt of the new machines, each serial number was recorded and the software version was also recorded. Although no hash code testing was performed to validate that the software on each machine was the same as displayed during start up on the voting screen, the intake procedure performed by the Commission did provide auditable records showing that the software version on each machine was the same as that purchased. There was no place to record the machine version for auditable verification that each machine was the same model either purchased or certified.

*Recommendation: The Tennessee Election Commission and/or Tennessee Coordinator of Elections should provide validation procedure for use by the county Election Commissions. Following the practices set forth in the Voting Systems Performance and Test Standards developed by the Federal Government as recommended above would also address the above noted deficiencies.*

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### PHYSICAL PROTECTION OF VOTING SYSTEMS

#### **LWVUS Recommended Practice #9: Restrict physical access to all components of voting systems.**

The Davidson County Election Commission voting machines are stored at an unmarked warehouse. The warehouse is often open and there is no video camera surveillance system. LWV Nashville observers noted that the warehouse was not climate-controlled. The noted temperatures were very warm, although in a report from the Commission to the Committee, the Commission stated that the temperature range in the warehouse is "well within the range of acceptable conditions specified by ES&S".

Voter registration records are maintained on the Metro Government computer system and as such are subject to the security features of the Metro computer system. The paper records are kept in a file room. While the file room is not locked, it is in a location which would make it difficult to access unnoticed. In addition, the records are so tightly packed that any removal would be physically obvious.

*Recommendation: Consider enhancing the security for the voting machines by at least adding video surveillance at the warehouse and a more formal check in/out process for the machines so that missing machines or the last known location of a given machine can be quickly identified. The temperature in the warehouse should also be climate-controlled.*

#### **LWVUS Recommended Practice #10: Maintain and operate voting systems in isolation from networks and the Internet.**

The ES&S iVotronic machines used by the Metro Election Commission have no ability to connect to the internet or other network. The only physical connection between machines is for power cords. The counting of votes requires that a supervisor cartridge be inserted into each machine.

### PREPARATION PRIOR TO ELECTION DAY

#### **LWVUS Recommended Practice #11: Educate voters in the use of all voting equipment both in advance of the election and in the poll place on Election Day.**

To help the public become acquainted with the new iVotronic electronic voting machines, the Election Commission and the staff arranged many public demonstrations of the equipment all over town. Such demonstrations were staffed by regular staff and by others arranged for by the Commission. These demonstrations were held in super markets, malls, other places where public

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traffic was heavy, and a demonstration was given to any group that requested one.

For the first time with the August elections, the Davidson County Election Commission mailed a sample ballot to each voter. The sample ballot mailed to every registered voter included instructions on how to vote using these new machines. Many voters were observed with marked up sample ballots when they came to vote.

The Election Commission website also contained a continuously running explanation of how to vote on the new machines. Every polling place displayed on the wall the same instructions shown as the first screen which appeared to the voter.

There were plans to have "streaming" video about how to use the voting machines in as many precincts as possible. The constraint was purchasing the TV's. In practice this was used only during early voting.

*Recommendation: Having the streaming video being shown at the precincts with long lines might have reduced the voting time per voter as the workers would not need to spend 1-2 minutes per voter to explain the machine.*

*LWV Nashville commends the Election Commission for mailing the sample ballot to voters and strongly encourages that this be made standard practice.*

### **LWVUS Recommended Practice #12: Provide adequate training for all Election Day workers.**

The Election Commission held three separate types of training: poll officers and fail safe officers, precinct registrars and assistant precinct registrars, and machine operators. In general, the training for the first two groups was well organized and professionally run. The training for the machines operators was less structured.

Members of the study committee attended at least one session of each type of training. (See the complete sub committee report for more details of the training.) Based on their observations and experiences, the following suggestions/recommendations are offered:

- *Security of equipment and systems* Machine Operators and Poll officers need more complete instructions on keeping the machines and Personal Election Ballot cartridges secure at all times. In addition, there should be a simple procedure for securing the precinct cell phone and lap top computer issued to each Poll Officer. Because we don't know what data

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*the laptop computer contains, we could not evaluate the security of its electronic information.*

- *Protection of voter privacy There are no standards for the placement of the machines which resulted in some precincts having the screen to the wall and some with the screen to the room. There should also be a standard that loose cords are secured to the floor to prevent tripping.*
- *Training for assistant registrars and registrars Training may need modification to insure paper records are accurate because in practice, these tasks were performed with significant variability. For example, there was a variation in the length of line allowed for voters with completed applications but who had not voted – resulting in some voters leaving because the wait after receiving the application was too long. In addition, there was variability in comparing the number of applications issued to the public count on the machines.*
- *Assisting voters with disabilities Training of machine operators was brief and in some sessions, limited to audio headsets for the visually impaired. On Election Day there was confusion about how to adapt the voting machines for voters in wheelchairs. The training materials did not have reference material to refresh the operators about how to accommodate voters with various types of disabilities.*
- *Improving training methods Suggestions include the following: a) identify critical functions for all poll work categories to emphasize in training sessions and materials; create "reminder cards" that workers could have at their stations that prompt for correct critical functions; b) have trainees demonstrate correct critical skills and c) request and review learner feedback after all training sessions.*
- *Improving machine operator training Suggestions include the following: a) change the location to a comfortable setting with AV equipment; b) prepare additional trainers; c) convert the content to Power Point presentation and use ES&S machine training videos; d) incorporate deliberate, thorough demonstrations of all voting equipment and mandate "hands on" learning for all trainees; e) do not verbally provide information that is not included in the handout -- this will avoid the confusion about whether machines had to be closed down in the order opened and the use of the master PEB during Election Day; and f) prepare higher quality paper handouts.*

*Set up a mentoring or "Buddy System" A mentor system would pair a new officer with an experienced officer for his/her first election, and ensure that every*

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*polling place has at least one experienced machine operator to mentor new operators.*

### **ON ELECTION DAY**

#### **LWVUS Recommended Practice #13: Ensure adequate technical support to poll workers on Election Day.**

On Election Day, the Election Commission maintained a "hot line" for poll officers to call for technical questions or with technical problems. In addition, roving inspectors visited precincts to observe operations and report problems. Based on LWV poll observations, this system seemed to be adequate.

*Recommendation: Build on the Election Day "roving" poll officers to have "roving" evaluators drop in to precincts for staff support and to verify that functions are being carried out correctly. This same inspector could spot test machines as suggested elsewhere.*

#### **LWVUS Recommended Practice #14: Provide a back-up plan in the event of machine failure.**

The plan in case of machine failure is to call technical support. The malfunctioning voting machine is to be taken out of service until it is fixed. This practice seemed to work well on Election Day.

### **AFTER ELECTION DAY**

#### **LWVUS Recommended Practice #15: Design a routine process that checks for problems that may have occurred but may not have been visible on Election Day.**

The Metro Election Commission engages an outside firm to produce a performance audit of selected procedures for each election. The one performed for the August 2006 election indicated discrepancies in 30 precincts between the public count and the poll officer's report. In most cases the poll officer's report did not have the data reported, though in one case there was a very significant difference in the two numbers. In addition, because of missing information relating to the absentee/early voting paper ballots, the audit was not able to determine the total number of voters.

*Suggestion: After each election invite all workers to make suggestions for improvements. This could be done by mailing out a survey or setting up a page on the Commission website, or both.*

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### SECTION TWO: VOTER REGISTRATION SYSTEMS

*The committee is still researching some issues in this area – particularly around the role of the statewide voter registration database versus the database at the county elections commissions. Two versions of the same data is inherently a problem --it seems that the county level database governs although HAVA requires a statewide database.*

**LWVUS Recommended Practice #16: Establish electronic transmission of voter information to the election authority from motor vehicle and other agencies offering voter registration.**

In Tennessee the Departments of Safety, Health, Human Services and Veteran's Affairs, and Mental Health/Developmental Disabilities and Mental Retardation Services are required to provide voter registration. These agencies transmit hard copies of voter registration documents to the respective county election commissions.

In addition, there is regular electronic transmission of voter registrations received from the Department of Safety and Human Services, the largest voter registration agencies. In Davidson County the information is entered into the data base by the staff who have regular assignments to specific categories e.g., DHS, Motor-Voter, new voters, changes etc.

**LWVUS Recommended Practice #17: Ensure that the registration process enfranchises all eligible citizens.**

The State of Tennessee maintains a statewide voter registration database, though the counties are responsible for the editing and purging of voter registration records. Counties inform the state of new registrations which the state adds to the statewide database. New registrations are checked with the Department of Safety to determine if they have valid or known social security numbers. If the data is not matched, a registration is "flagged" and the information communicated back to the counties so that appropriate identification is required at the time of voting.

The state also identifies duplicate registrations and alerts the county of the earliest registration that the voter has subsequently registered somewhere else in Tennessee. In the future, the state hopes to be able to compare voter registration rolls with at least neighboring state to identify dual registrations.

Tennessee does not require photo identification, but persons must be 18 years old or older, a United States citizen, legal resident of the county, have not been convicted of a felony or have had voting rights restored after such a conviction,

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and have submitted a completed registration form at least 30 days before an election.

Two forms of identification are acceptable in Tennessee: photo and non-photo documents. Photo identification can include the following: Tennessee driver's license, US passport, student identification, military identification, employee identification, valid commercial pilot's license; all with a signature required. Non-photo identification can include: Tennessee voter registration card, valid identification card issued by state or US authorities, valid hunting or fishing license, or valid license to carry a handgun. HAVA requirements are met with a photo identification or a non-photo identification that contains name and address.

### **LWVUS Recommended Practice #18: Protect voter privacy and database security.**

Tennessee voter registration records are public information except for the social security number. The state sells the information in electronic form, though a signed statement that the information will only be used for political purposes is required.

The Metro Election Commission uses ES&S voter registration software. The system is on the Metro government computer system and as a result is protected by the Metro government computer security features. In addition, access to the components of the voter registration software is password protected and limited to employees whose functions require access to the registration modules. Once logged in, which requires a password, the employee can access those voter registration modules necessary for their jobs. Passwords are changed every thirty days and computer stations "log out" after a period of inactivity so that reentering the password is necessary to continue use of the software.

The original voter registration cards are now maintained in boxes housed in the Election Commission offices area. The cards are densely packed in boxes, which are either on top or in file cabinets. It would be extremely difficult to find a particular card without being noticed. No special guard is immediately present, but the nature of the material and the presence of monitors at the door and at the entrance to the voter information unit appear adequate. This system is in process and will change when all data are on-line.

The Election Commission is working to get all the old data and the incoming data into the database. This will permit more accurate and easier methods of keeping data current as well as provide a means of tracking.

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### **LWVUS Recommended Practice #19: Require transparency in the administration as well as in the creation of statewide voter registration systems.**

The voter registration software in use by the Davidson County Election Commission has been in use for several years. As mentioned elsewhere, the state maintains a statewide list, but the counties have the responsibility for editing records including adding or deleting.

### **LWVUS Recommended Practice #20: Require tracking and documentation of all changes to the database.**

The Davidson County Election Commission software provides for a history of changes made to the record: what change was made, when it was made and who made it. In addition, all related paperwork is scanned and attached to the history. At the time of this writing not all old data for Davidson County had been transferred to the electronic data base, but the goal was to get both new and old data in the database as quickly as possible. When the database is up to date, tracking will be more manageable and possibly available online for individuals to check their registration status.

### **LWVUS Recommended Practice #21: Conduct accurate voter registration list maintenance.**

State practice is that the counties are the entities that edit and purge voter registration records. Reasons for removal (purging) from the state registration rolls include the following:

- When a person has voted in another county.
- When the request to do so has been made.
- Upon the death of the voter.
- After receiving written confirmation that the voter has moved outside of the county.
- After learning the voter has had a name change for 90 days (other than marriage) and has failed to notify the election office.
- After receiving official confirmation that the voter has committed a felony.

First time voters who registered to vote by mail are required to vote in person and must provide proof of eligibility. These can include a current registration card, a current Tennessee drivers license or a photo identification including name and voter's signature. (If the voter has none of the above, several other documents are considered proof of eligibility.)

A LWV study committee member observed the procedures that are in place for checking voter lists. The installation of a relatively new computer system and the

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designation of persons or small groups of persons are responsible for specific categories of data are attempts to develop and maintain an accurate and up-to-date list of eligible voters.

### **LWVUS Recommended Practice #22: Give voters access to review and check their voter record.**

Citizens may review their information at the Election Commission during regular office hours. There is no state-wide ability for a voter to check online to determine registration status at this time. The State Coordinator of Elections hopes to have such a system in place before the 2008 presidential election.

*Recommendation: The State Coordinator of Elections and State Election Commission should clarify responsibilities for the voter registration data base, particularly as to which data base prevails in the case of discrepancies. There should be a plan developed and implemented to phase into a single statewide voter registration database.*

### **Glossary of Terms**

Hash Code Testing – A digital algorithm that verifies that the software is the same as that which was certified as compliant with State and Federal standards and the same as listed in the National Institute of Standard Technology library.

Logic and Accuracy Testing – A comprehensive uniform test that is planned, documented, and uniformly carried out to determine that computer software accurately performs all functions that it is supposed to perform with no unintended results. Appropriate logic and accuracy testing requires thorough testing of all possible scenarios, and some level of volume testing.

Undervote – A condition in which the number of voters who signed in to vote is greater than the number of ballots cast. This term is also sometimes used to refer to any specific category on a ballot in which a vote was not recorded, where the ballot was otherwise counted.

Overvote – A condition in which the number of voters who signed in to vote is less than the number of ballots cast.

PEB cartridge – The acronym used by some Davidson County employees and others to refer to a proprietary cartridge like device that is used to activate and manage the iVotronic voting machines. Some employees and others simply refer to this device as a "cartridge" and it has been used both ways in this report.

**VOTING INTEGRITY STUDY**

**Nashville League of Women Voters  
Observers for State Primary and Davidson County General Election**

**Early Vote July 14- July 29, 2006  
Election Day - August 3, 2006**

**Credentialed volunteer reporters:**

**Lynn Williams:** Howard School  
Julia Green School

**Rhonda Usner:** Christ the King School  
St. Bernard Academy

**Judy Williams:** Green Hills Library  
YWCA-Woodmont

**Connie Harvey:** Centennial Park Arts Activity Center  
Sevier Park

**Carrie Hudson:** Northwest YMCA  
Bordeaux Library

**Mary Stone:** HERMITAGE LIBRARY

**Miriam Perry Mimms :** MADISON LIBRARY

**Debra Narrigan:** Bordeaux Library  
Hadley Park Community Center

**Marian Ott:** Madison Library  
Neely's Bend Middle, Cleveland St. Park Community Center

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