City of San Antonio May 7, 2005 General Election Report:

An Analysis of Election Problems

**Presented by Coalition for Election Integrity
and VotersUnite.Org**

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The Coalition for Election Integrity was organized by candidates and concerned citizens following the May 7, 2005 City of San Antonio General Election. It is a non-partisan group which seeks to raise public awareness about paperless direct record electronic voting machines, candidate conduct, and election process transparency.

Fred Rangel, Chairman

VotersUnite.Org was founded in April of 2004. It is a national non-partisan organization dedicated to fair and accurate elections. It focuses on distributing well-researched information to elections officials, elected officials, the media, and the public; as well as providing activists with information they need to work toward transparent elections in their communities. Documents written by VotersUnite.Org have been included in the amicus briefs of three lawsuits on voting issues; included in the Congressional letter to the Government Accountability Office requesting an investigation into the 2004 General Election; used by the GAO in their investigation; and submitted as testimony to the U.S. Senate Rules and Administration Committee.

Ellen Theisen, Executive Director

Introduction

The purpose of this report is to recount problems with the May 7, 2005 City of San Antonio election, as well as to analyze where breakdowns in the election process occurred. Our report focuses on District 7 as that is where the investigation began. We acknowledge that there may be many more instances of voting problems that we have not compiled, and we welcome any additional information from voters. Due to the fact that the Bexar County Elections Department did not provide all of the data we requested, our findings may be amended in the near future should the Texas Attorney General determine the data to be public information. This report will identify problems and discuss why those problems arose. We will then propose a course of action to identify and correct problems in future elections.

Background

Bexar County, Texas switched from an Optical Scan voting system to paperless Direct Record Electronic voting machines (DREs) in 2003. The model used is the iVotronic, manufactured by Election Support & Services (ES&S). The first time iVotronics were used in an election was in September 2003. Problems with the DREs were reported in the elections of March and November of 2004.[1]

The City contracted with the Bexar County Elections Department to conduct the May 7, 2005 General Election using electronic voting. Under Texas state law, the municipality chooses the method of voting (paper or electronic). San Antonio is governed by an eleven member city council. Council places for districts one through ten are elected by single member districts and the eleventh place is the mayor, who is elected at-large. Council members may serve a maximum of two two-year terms and are prohibited from seeking election due to a lifelong ban.

The May 7, 2005 San Antonio General Election included ten city council races and a mayoral race, as well as three propositions. Political analysts expected a large voter turnout for the May 7, 2005 General Election. The reasons for the projected larger turnout included:

- "Open seats" in which council members were "termed out";
- High profile Mayoral race which consisted of two current council members who were termed out and a former judge who had not previously served on council; and
- Three (3) tax propositions which included a sales tax dedicated to protecting the Edwards Aquifer; linear parks dedication and restoration; and a senior tax freeze for citizens sixty-five (65) and older and the disabled.

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[1] Tom Bower, " **Bexar computer glitch delays counting of votes,"** *San Antonio Express News,* 10 March 2004. <http://www.mysanantonio.com/news/metro/stories/MYSA10.12A.VotingProblems0310.4ea013d9.html>.

District 7 is an economically, ethnically and geographically diverse district. With neighborhoods ranging from suburban to inner-city, it includes a historical neighborhood and an art-deco revitalization district. The district is approximately 51% Democrat and 49% Republican. Of the district's 51 precincts, 25 consistently vote Republican, while 26 consistently vote Democratic. The district is split geographically by Interstate Loop 410. Generally, voters who live outside Loop 410 lean Republican, while voters inside the Loop tend to be Democrats. An estimated 86,000 people are registered to vote in the district; voter participation was 17% in the May election.

Eight candidates filed to run for City Council District 7. Of the eight, only three have previously sought elected office: Fred Rangel was a District 7 candidate in 2001; Cynthia Test, a long-time community activist, was previously a candidate for the San Antonio School District board; and Jim Valdez, a former South San Antonio School District trustee, was previously the Republican nominee for State Senate District 26 in 2004.

The remaining candidates were Reinette Alecozay, Elena Guajardo, Ted Kenyon, Ernie MacDonald, and Noel Suniga. Those five candidates presented backgrounds in community service that included employment at City Hall, appointments to city advisory boards, employment with nonprofit groups, volunteer work for churches or political campaigns, and activity in neighborhood groups.

Ms. Test received the following endorsements: Bexar County Deputy Sheriff's Association; San Antonio Lightning News; County Commissioner Sergio "Chico" Rodriguez; Angie Garcia, Rosa Rosales, and Henry Rodriguez of LULAC; Mike Lowry; SAISD Trustee Tom Lopez; Former Judges Albert Pena and Manuel V. Pena; former City Councilman Manuel Calderon; Bexar Met Board Member Jose Gallegos; Former State Representative Leo Alvarado; Dan Barrett; Milton Guess; C.A. Stubbs; SA Airport Police Officers Association; SA Postal Workers Local 195; SA Letter Carriers; American Federation of Teachers 1356, AFGE Local 1617; Ironworkers 66; ASSCME 2399; CWA Local 6143; Laborers 1095; IUE Local 780; and the San Antonio City Employees Union.

Ms. Guajardo was endorsed by the Stonewall Democrats, Alamo Group of the Sierra Club, the National Organization of Women, and Social Workers of America. Mr. Suniga was endorsed by the San Antonio Express News. Mr. Valdez was endorsed by the San Antonio Newspaper, and Ms. Alecozay by the Randolph Hispanic Council.

The candidates were listed on the ballot in the following order:
> Jim Valdez
> Elena Guajardo
> Noel Suniga
> Reinette Alecozay
> Ernie MacDonald
> Ted Kenyon
> Cynthia A. Test
> Fred Rangel

Due to the number of candidates, a runoff election was anticipated. The frontrunners were projected to be Jim Valdez, Cynthia Test, and Noel Suniga. Exit polls conducted on Election Day indicated the runoff candidates would be Ms. Test and Mr. Suniga.

Election Night Results

Results on election night were posted on the Bexar County website. Early voting results were as follows

Jim Valdez	366
Elena Guajardo	1,400
Noel Suniga	1,168
Reinette Alecozay	142
Ernie MacDonald	766
Ted Kenyon	409
Cynthia A. Test	1,368
Fred Rangel	727

Election Day results showed Elena Guajardo in first place and Cynthia Test in second. At approximately 9:27 pm, the last precincts (approximately 5%) were reported and Test came in third (trailing Suniga by 33 votes or less than 1%). These last precincts were voting locations at Coke R. Stevenson Middle School and John Marshall High School.

Early Voting Problems

During the Early Voting period, many voters had difficulty locating the City Council District 4 race on the voting screen. Incumbent Councilman Richard Perez received complaints from voters who stated that they could not find the Councilman's name on the ballot. Councilmember Perez acknowledged that he too had trouble finding his own name, "My race is at the top of the page, with Proposition 1 underneath," he explained. "Because there's only two candidates (Richard Perez and Ruby Resendez) and the proposition is much longer, I missed it."[2] This problem stemmed from the City Council Race for District 4 placed on the same screen as one of three propositions.

Similarly, District 1 Councilman Roger Flores received many complaints from constituents who were unable to find his name on the ballot. One senior citizen went back through all the screens trying to find Mr. Flores's name. A poll worker came to help, and could not find it either. The poll worker removed the ballot cartridge, reinserted it, and then the Councilman's name appeared. Another voter also tried to vote for Mr. Flores, but the councilman's name was not on any screen. Mr. Flores's name appeared only after the voter reached the review screen. [3] Raul Quiroga had the same problem: he wanted to vote for Mr. Flores but his name was not on the screen. Marianne Quiroga voted at the same polling location. She reported that Mr. Flores name appeared and then disappeared.

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[2] Jaime Castillo, "Ballot Reminder Added to Early Voting Booths**."** *San Antonio Express News* (TX), 22 April 2005.

[3] Fred Rangel, personal conversation, 10 May 2005.

She proceeded to vote for the propositions until she reached the end. She scrolled back and Mr. Flores's name appeared.

Both Councilman Perez and Councilman Flores brought up their respective problems to the City Clerk and Bexar County Elections Department. Cliff Borofsky, the Elections Administrator, explained that it was too late to alter the ballot program.[4] Instead of having the program error corrected, the Department opted to post orange signs in Districts 1, 3, 4, 5 and 9. The signs warned voters about the difficulties in viewing the ballot, particularly names at the top of the screen. No warning signs were posted in Districts 2, 3, 4, 7, 8, or 10.

Voter Rob Killen attempted to vote at the Northside Activity Center in District 7, and experienced problems with language on the screen. Mr. Killen approached the voting machine, the election worker inserted the cartridge and Mr. Killen was prepared to vote. However, when Mr. Killen selected the English language option, the screen appeared in Spanish. Mr. Killen tried several times to choose English, and each time the screen appeared in Spanish. The election worker reinserted the cartridge and asked Mr. Killen to start over. Mr. Killen questions whether or not his vote was counted.

In District 8, at least 5 students who reside at Chisholm Hall on the University of Texas at San Antonio (UTSA) campus were listed on electronic poll books as being residents of District 6. Chisholm Hall and UTSA are clearly within District 8 boundaries. One student, Stephen Cheney, noticed that his voter registration card had an incorrect zip code. The poll worker stated that it would not matter. According to Mr. Cheney, "When I was voting, District 6 came up I told them I was positive that I was in District 8, and that I know one of the candidates personally and wanted to vote for him, but they said they didn't really know what they could do about it. I asked if I could vote then for Mayor and then vote later for councilman when the problem was fixed, but they said I couldn't"[5]

Poll workers did not offer Mr. Cheney a provisional ballot. Michael Wright, campaign manager for District 6 candidate Larry Romo, contacted elections officials about the problem. An election official confirmed that there was an error, and explained that it was due to "some problems with updating the system."[6] A preliminary examination of data from the precincts in question revealed 53 votes registered on the machine, yet there were only 52 people listed on the Early Voting poll list. The Elections Department maintains the over vote is from absentee ballots.

Election Day Problems

At Coke R. Stevenson, a polling location in District 7 for precincts 2037, 2086, 2084, 2093, 2108, and 2153, machines locked up before 9:00 a.m. Dozens of people were told to either wait until the problem was fixed or come back later. Many were on their way to

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[4] Jaime Castillo, "Ballot Reminder Added to Early Voting Booths**."**
[5] Stephen Cheney "Voting," 13 May 2005, personal email.
[6] Michael Wright, "Early Voting Problems," 13 May 2005, personal email.

work and could not wait. This was also one of the last polling locations to report on election night (final 5%).

According to Rick Zamora, at the polling location of Jefferson High School, long lines ensued because the iVotronic voting machines were not working for at least 20 minutes. Jefferson is the polling location for precincts 2047 and 2083, both of which are located in District 7.

Molly Ruiz, former vice-president of the National League of United Latin American Citizens, tried to vote in English, but the screen repeatedly went to Spanish. Pressing English and getting Spanish suggests a ballot programming error (mapping the button to the wrong function).

At the poll at Nichols Elementary, election officials forbade voters from bringing campaign literature to the voting booth, clearly violating the law by infringing on the rights of voters to make informed decisions.

One voter, Sheri Ramirez, went to Zachry Middle School, the same polling location she went to in November. When her turn came, electronic poll books indicated that she was at the wrong polling location, and she was directed to Knowlton Elementary. When she arrived, she found long lines and could not wait because she would be late for work. Her daughter, whose voter registration card shows the same address of residence, was allowed to vote at Zachry.[7]

John Navarro voted at the Olmos Golf Course Club and was forced to wait for an inordinate amount of time. One of the election judges present told Mr. Navarro that they were experiencing difficulty with the telephone lines. The judge informed Mr. Navarro that there was a problem because they did not have additional phone lines available to them, so the process was taking more time than usual.

Steven Schauer, a candidate for San Antonio City Council District 10, was listed first on the ballot. He was approached by voters leaving the polling location at Thousand Oaks Elementary. On two occasions voters stopped to tell him they had trouble locating his name on the touch screen ballot.[8] On Election Day, a reporter from the Express-News (John Tedesco) called Mr. Schauer to inquire about voting difficulties. The reporter explained that a District 10 voter had called the newspaper complaining that Mr. Schauer's name did not appear on the touch screen ballot. Mr. Tedesco relayed that he had spoken with election officials, who told him that that the system was working fine and there were no other reported problems. In addition, Mr. Schauer received a telephone message from a voter complaining that he could not find his [Schauer's] name on the touch screen ballot.

According to the San Antonio Express News, "City council candidates had accidentally been listed on the same page as Proposition 1, so voters who weren't careful could have

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[7] Sheri Ramirez, conversation with author, 20 May 2005.
[8] Stephen Schauer, "Election Concerns," 18 May 2005, letter.

overlooked the politicians. And City Council candidate Steven Schauer had heard his name was formatted high on the ballot screen, making it easy to miss. [Cliff] Borofsky couldn't verify the alleged glitch."[9]

Jim Valdez, a candidate for District 7, also received numerous complaints from supporters who stated that they could not find his name on the ballot. Mr. Valdez was listed first on the ballot. Six months prior to the City Council election, Mr. Valdez ran as the Republican candidate for Texas Senate District 26 (November 2004). The Senate District overlaps City Council District 7. Of the precincts located in District 7 and District 24, Mr. Valdez won 2037, 2066, 2076, 2077, 2084, 2086, 2093, 2108, 2139, 2141, 3009, 3019, 3023, 3032, 3054, 3116, 3139, 3141, and 3147. However, in the May election, Mr. Valdez captured only precincts 2066, 2076, 2123, and 2139. Another city council candidate, Elena Guajardo, won precincts 2077, 2093, 3009, 3116, 3139, and 3141.

While the City Council race is non-partisan, the aforementioned precincts are considered by analysts to be heavily Republican (all were won by Republican candidates in the 2004 and 2000 elections). Yet, in May 2005 those same precincts were won by Ms. Guajardo, an openly gay liberal endorsed by the Stonewall Democrats. It should be noted that Ms. Guajardo's name appeared second on the ballot, directly below that of Mr. Valdez. In a conversation with Cliff Borofsky, Mr. Valdez was told that he [Borofsky] was aware of problems with name placement on the screen. That is, he knew that candidates whose name appeared first were at a disadvantage because voters had difficulty seeing names at the top of the screen. Furthermore, Mr. Borofsky disclosed that the second name appeared a very brief time before the first name appeared, which resulted in a 3% advantage for the second candidate.[10]

It should also be noted that District 9 reported a 15% undervote for the city council race. Typically, a 0.5% undervote is considered average for primary candidates.[11]

At the May 23, 2005 Special Canvassing Meeting held at by City Council, Councilman Roger Flores broached the subject again and stated that voters could not find the race until they reached the review screen. City Clerk Leticia Vacek stated that her office "was informed about these discrepancies, but couldn't do anything about it during the election." Richard Perez requested that "changes be made to the process so that changes can be made when problems erupt." Ms. Vacek added, "The election company ES&S was also apprised of the problem in the process at that point, but still couldn't rectify them in time."[12] City leaders voted to accept the canvass results.

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[9] John Tedesco, "Vote tabulation is -- surprise! -- a snap." *San Antonio Express News* (TX), 8 May 2005.
[10] Jim Valdez, personal conversation with Cynthia Test, 10 May 2005.
[11] Florida Department of State Division of Elections, "Analysis and Report of Overvotes and Undervotes for the 2004 General Election," 31 January 2005
<http://election.dos.state.fl.us/reports/pdf/Over_Under_Report_04.pdf> (24 June 2005).

[12] City Council Special Canvassing Meeting, May 23, 2005

Test v. Suniga

On May 8, the Cynthia Test campaign began to receive accounts of Election Day voting problems. We believe that these indicated machine malfunction, programming errors, or both. Results posted on the Bexar County website showed Ms. Test to be 33 votes or 0.24% short of a runoff. The candidates that made it to the runoff were Elena Guajardo and Noel Suniga. The closeness of the results, the fact that Test moved from second to third place in the last minutes of the results combined with reports of voting problems convinced the Campaign to take action.

The Campaign sought the advice of experts, who recommended auditing and testing the iVotronics in election mode to determine the nature and scope of the problems. The Campaign requested data pursuant to the Texas Open Records Act. The request was denied by the District Attorney's office, which maintained that the campaign would need to follow normal legal channels and subpoena the material.

The Campaign then looked to other options under the Election Code: (1) seek a recount and (2) file an election contest. The Campaign weighed both options. If paper ballots were used, a manual recount would be the most appropriate mechanism to verify results, as votes could be either gained or lost. In this case however, a lack of printed records of the votes prevented a meaningful recount due to the fact that the tabulation software would merely reprint the results recorded on Election Day.

Testing the machines would take time, and the County indicated it would not do anything unless ordered by a judge. The Runoff Election was rapidly approaching, and Texas Election Code required an election contest to be filed within ten days of the date of the canvass of the election.

The Test Campaign decided to file an election contest on the basis of problems with electronic voting machines.[13] The Original Petition stated:

> As a result of the allegation in this Original Petition, the outcome of the contested election as shown by the final canvass is not the true outcome of the election because of the malfunction of the electronic machines. *See* Exhibit A; TEX. ELEC. CODE § 221.003. If the number of illegal votes is greater than the number of votes necessary to change the outcome of the election and the Court cannot determine the true outcome of the election, the Court must declare the election void. TEX. ELEC. CODE §§ 221.009, 221.012. This Honorable Court must then order a new election. TEX. ELEC. CODE §232.041. Contestant prays for the use of paper ballots if a new election is ordered.

Attorneys also requested the Court to order the iVotronics be tested, and that all voting devices and other related equipment necessary in the disposition of the elections be preserved in its secured condition. The Court ordered the security period for preservation

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[13] The suit named Cynthia Test as the Contestant and Noel Suniga as the Contestee.

of the election materials extended and the District Attorney to provide Contestant Test with the previously requested documents. The District Attorney agreed and began compiling the requested data.

Contestee Noel Suniga filed a Response to the Original Petition and Plea to the Jurisdiction. If granted, the Plea would dispose of the case prior to discovery and trial. The Contestee claimed that the Test's election contest was an inappropriate vehicle by which to challenge the method of voting, i.e. electronic voting; and that Ms. Test failed to provide evidence that votes were lost or misassigned. Under the Code, a Contestant must prove that one of the following occurred: illegal votes were counted, legal votes were not counted, voters were prevented from voting, fraud or mistakes occurred on the part of elections officials. Yet when dealing with electronic voting, it is nearly impossible to prove mistakes or if legal votes went uncounted unless one is allowed to scrutinize the data, and test the machines. Since the County provided some of the requested data the day before the hearing, Ms. Test was unable to have an expert analyze it in time for the hearing. The Court granted Contestee's motion thereby dismissing the suit.

Why did problems occur?

Elections do not occur in a vacuum. The administration of an election involves, among other things, a large amount of information management, a variety of tasks, and complex software. Identifying problems after an election occurs is of little use unless efforts are made to identify causality. We must ask: What went wrong? Why did voters select the English ballot and get the Spanish ballot instead? Why were there viewing problems? With the variety of problems reported in the May 7th election, it is clear that no single factor is responsible for all of the errors. We will now present factors that contributed to the breakdown of the election process.

Pre-election testing procedures

Pre-election testing procedures were inadequate. Texas Election Code § 129.001(a). states:

> As part of the testing of the direct recording electronic voting machine equipment before its use in a particular election, the general custodian of election records shall include a specific test of each machine's logic and accuracy functions to ensure that the machine properly records, counts, and tabulates the votes. (emphasis added)

Bexar County Elections tested only 3 machines prior to early voting and only one machine before the election day of May 7. On May 11, the author inquired at the Elections Department if all DREs were tested. A clerk responded by saying, "Yes we test all of them. Well, not really. We just test a few randomly." On another occasion, analyst Jose Jackson explained, "No we do not test every machine. We only use a few to check

the programming. Do you know how long it would take to test every machine? How many people that would take? There's no way." [14]

Ballot testing procedures

Documentation of pre-election testing was analyzed by Ellen Theisen, software tester and technical writer and Executive Director of VotersUnite.org. After examining the data, Ms. Theisen concluded that the test plan was poorly designed:

> Of the 18 ballots cast in the District 7 contest, two votes were cast for each of the 8 candidates, and two ballots contained undervotes. **If the votes of two candidates had been switched, the error could not have been noticed,** since each candidate received the same number of votes cast. Thus, the testing provides no assurance that the program was assigning votes correctly.
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> Pre-election testing of the machines used on election day was even less adequate. Only 12 ballots were cast, even though there were 16 ballot styles to test.
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> ♦ No ballots were cast for ballot styles 1, 3, 4, 7, 10, 11, 13, or 15.
> ♦ One ballot was cast for each of ballot styles 6, 8, 9, and 12.
> ♦ Two ballots were cast for each of ballot styles 2, 5, 14, 16.
> ♦ 27 candidates received no votes.
>
> Again, in District 7, the same number of ballots was cast for multiple candidates, making it impossible to know if the program was assigning votes correctly. One vote was cast for Valdez, one for Test, none for any of the other candidates, and there were no undervotes. [15]

Ballot programming

Ballot programming is done uniquely for each election. The programming maps the touches on the screen or the marks on a ballot to actual votes recorded for candidates. Ballot programming produces a ballot definition file. The file tells the voting machine software how to record those selections as votes. Ballot programming errors have given one candidate's votes to an opponent in many elections. Reports related to voters having difficulty finding/seeing candidate's names clearly indicate bad ballot programming. As stated earlier in this report, Bexar County was aware of the problem, but ES&S could not have the ballot corrected in time. Another example of this type of problem was reported in South Carolina in May 2005. Voters had trouble viewing and/or finding candidates' names, and officials indicated it was to due to a "glitch in the software." [16]

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[14] Jose Jackson, personal conversation with the author, 1 June 2005.
[15] see Appendix
[16] NeYama Duncan, "**New Voting Machine,"** , Archives, ABCNews4.com. 5 May 2004.

Lack of contingency plan

In instances where machines froze or were slow to operate, long lines ensued, and some voters were asked to wait or return at a later time. Elections officials did not have paper ballots on hand to ensure that polling locations continued to serve their primary function.

Lack of cohesive system for tracking problems

On two occasions, Mr. Borofsky stated that he was either, "unaware of any problems," or that the election went smoothly without major problems. [17] This suggests that the County has no system in place to collect information about machine malfunction or programming errors that occur at polling places. Had such data been collected, it might have served as a "red flag" indicating problem precincts. Data from those precincts might have been audited more closely.

Lack of thorough auditing

Texas law requires a manual recount to ensure the accuracy of the tabulation of electronic voting machines in all the races. The requirements call for a recount of 1% of precincts or 3 precincts, whichever is greater (§ 127.201a). Clearly 1% is not sufficient to detect errors, as Elections officials did not detect the inconsistencies identified by VotersUnite.org. Furthermore, in instances of known machine malfunction or other difficulties, no additional auditing was done. Without paper records of the votes, it is unclear how such a manual recount could have been conducted.

It should be noted that our request for poll tapes from Early Voting was denied, on the basis that such tapes are not printed to protect elections results and therefore not available for examination. Election code § 127.201 (c) requires that the early voting clerk conduct a daily audit of the direct recording electronic voting machines used in the election to ensure proper correspondence among the numbers of ballots provided on the machines, names on the poll list, and ballots cast on the machines. Without poll tapes, it is unclear how such an audit was conducted.

Outdated Election Code

Texas Election Code has not been sufficiently amended to take into account the nature of paperless electronic voting machines. Ten days is not enough time to obtain the necessary data, have an expert examine it, and test the machines to determine if errors occurred, and whether those errors affected the outcome of the election. The Open Records Act requires that agencies be given reasonable time to collect and provide the data requested. Additionally, results posted are unofficial until certified by the canvassing board, which occurs no earlier than the eighth day after an election. Election contest law requires that a contestant prove that one of the following occurred: illegal votes were counted, legal votes were not counted, voters were prevented from voting, fraud or mistakes occurred on the part of elections officials. Yet it is nearly impossible to prove mistakes or if legal

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[17] John Tedesco, "Vote tabulation is -- surprise! -- a snap." *San Antonio Express News* (TX), 8 May 2005.

votes went uncounted unless one is allowed to scrutinize the data. The section of the code that provides for a recount is suitable for paper ballots, but not for the nature of paperless DREs, such as those used in the San Antonio election.

Recommendations

After considering factors that contributed to errors and problems with the election process, we now offer recommendations for correcting such errors and improving the election process.

Testing

There should be a thorough, well-designed test plan created and conducted by independent professional software testers. For example, Dr. Doug Jones recommends the following about testing:

> An effective test should verify all of the conditions tested in acceptance testing, since some failures may have occurred since the systems arrived in the warehouse. In addition, the tests should verify that the machines are correctly configured for the specifics of this election, with the correct ballot information loaded, including the names of all applicable candidates, races and contests.

> The tabulation system should be tested by recording test votes on each machine, verifying that it is possible to vote for each candidate on the ballot and that these votes are tabulated correctly all the way through to the canvass; this can be done, for example, by casting a different number of votes for each candidate or issue position in each race or contest on the ballot.

> For touch-screen voting systems, it is important to test the touch-screen calibration, verifying that the machine can sense and track touches over the entire surface of the touch screen. Typical touch screen machines have a calibration mode in which they either display targets and ask the tester to touch them with a stylus, or they display a target that follows the point of the stylus as it is slid around the screen.

In addition to testing plans, testing procedures should be examined as well. For instance, Miami-Dade requested that Dr. Doug Jones observe county testing procedures and provide recommendations for improvement.[18] It is important to obtain an auditor/advisor) who has computer programming expertise and knowledge of electronic voting systems, and who is not affiliated with the County or vendor.

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[18] Doug Jones, "Recommendations for the Conduct of Elections in Miami-Dade County," Revised 7 June 2004, < http://www.cs.uiowa.edu/~jones/voting/miamitest.pdf> (5 June 2005).

Auditing

As previously discussed, the Elections Department has no procedures for recording problems. In the software industry, it is a general practice to record problems, bugs, or glitches so that they may be investigated and corrected for the next version of software. We recommend that each polling location maintain a log of any and all problems which occur. Such logs would be useful in detecting problems related to hardware, general software, and specific ballot programs. Any locales which reported a high number of problems should be audited. The State currently requires a 1% recount per-precinct to reconcile data. Due to the well-documented problems surrounding DREs, we recommend a 10% audit rule, such as that recently adopted by the State of Connecticut.

Overall Review of Elections

The County should hire an independent review team to conduct an assessment of the election process. The assessment performed by the independent experts should include a review of hardware, software, election procedures, and physical security. In its report, The Brennan Center for Justice and Leadership noted,

> In order to perform the necessary analysis and ensure public confidence in that analysis, the expert security team that is retained must be free of any business relationships with any voting system vendors or designers. The outside team must also have a proven track record in assessing computer security in voting systems or comparable technologies.[19]

Oversight Panel

It is recommended that the County create a permanent independent technology panel. The panel should include experts in voting systems, experts in computer security, and citizens representing the diverse constituencies of Bexar County. Such a panel might also include elected government officials, business leaders, and leaders of civic organizations. The Brennan Center suggests that the panel should serve as a public monitor over the entire process and should perform a post-election security and performance assessment. The Panel should also develop protocol for dealing with problems that occur during an election.

Accountability

The County of Bexar entered into an $8.2 million contract with ES&S in 2003 to purchase iVotronic voting machines. The County also purchased related software and contracted the ballot programming to ES&S. County Commissioners should enforce the terms of its contract with ES&S. That is, ES&S should be held accountable for supplying faulty software and/or bad ballot programs.

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[19] Brennan Center for Justice and the Leadership Conference on Civil Rights, "Improving Reliability of Direct Recording Electronic Voting Systems", 20 June 2004, <http://www.civilrights.org/issues/voting/lccr_brennan_report.pdf> (20 June 2005).

Update Election Code

The last time Texas amended provisions relating to DREs was in 2001. Due to the changing nature of voting technology, the code needs to be updated in order to properly reflect the conditions under which voting occurs.

For example, Section 52.006 indicates procedures for correcting ballots such as crossing out an incorrect name or adding a sticker. Such procedures are suitable for paper ballots, but not for DREs. One might ask, Was posting an orange sign appropriate for correcting the ballot screen? The law should require a correction appropriate for the voting system; in the May 7 election, reprogramming would have been more appropriate than posting signs.

According to Texas election code, an election contest must show that that the canvassed results are not the true results of the election, and that the outcome would have been changed had it not been for any of the following factors:

> (1) illegal votes were counted (not legally countable); or
> (2) an election officer or other person officially involved in the administration of the election:
> > (A) prevented eligible voters from voting;
> > (B) failed to count legal votes; or
> > (C) engaged in other fraud or illegal conduct or
> > made a mistake.
> b) In this title, "illegal vote" means a vote that is not legally countable.

The Code provides no guidelines for a situation of bad ballot programming, in which the printed results do not reflect the true outcome and/or the true outcome is unknown.

Currently, the code allows for a manual recount. In past recounts, paper ballots were impounded and the ballots would be counted manually. Without a paper ballot, candidates cannot get a meaningful recount. Rather, they are left to examine a range of data such poll tapes, ballot images, audit logs, etc. In the event of microchip corruption or programming that incorrectly maps a button to a function, there is no way to determine voter intent. Both Federal and State governments should pass legislation mandating a verified voter paper audit trail. A voter verified paper trail is described by VerifiedVoting.org:

> The voter will directly see a physical object that shows their vote. Voters must be confident that this physical object cannot be thrown out or changed by the voting system.

> Traditional manual elections that use paper ballots and marking pens, as well as newer optical scan systems (i.e., mark-sense or bubble form), have the audit trail we want. Voters mark the paper, can hold it in their hands, can verify it, and can

then put it in a ballot box. We also like DRE voting systems that print a paper ballot which the voter can see and approve. Paperless DRE systems tell voters to just "trust us" that the system will work. That diminishes voter confidence.[20]

A voter verified paper audit trail is the only sure safeguard against machine malfunction, tampering, software glitches, etc., and the only type of record currently available that can truly reflect the voter's intent.

Ensure an Open Process

A major strength of the U.S. electoral process is its openness. However, computer programming and software codes do not allow for the public to observe tabulation. Since transparency is diminished, every effort should be made to ensure that concrete data is made available to the public. That is, information such as poll tapes, audit logs, and printouts from the central tabulator should be readily available for public scrutiny. Citizens should not have to file Open Records Requests, nor should they have to pay exorbitant costs for obtaining data. Currently, the Elections department posts only unofficial media reports on its website.

We must emphasize the importance of public access to information. One of the major obstacles this Coalition encountered was obtaining the information needed to properly audit election results. We have been told that information is not available, that it does not exist, or is exempt from the Open Records Act for proprietary reasons. We strongly recommend that all relevant election data (including pre-election testing information, among other things) be accessible to the public via the internet. We suggest that Federal law be amended to require an open source code for all software and programming involved in the election process. Such changes would ensure public access to election data.

We also recommend that pre-election testing be a public process. Texas election code allows observers to be present during testing and requires the department to give notice of testing. Such rules allow for minimum public review. However, Dr. Doug Jones describes what a truly open testing process should look like:

> This means that the details and rationale of the tests must be disclosed, the testers should make themselves available for questioning prior to and after each testing session, representatives of the parties and campaigns must be invited, and an effort must be made to make space for additional members of the public who may wish to observe. This requires that testing be conducted in facilities that offer both adequate viewing areas and some degree of security. [21]

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[20] David L. Dill, Rebecca Mercuri, Peter G. Neumann, and Dan S. Wallach, "Frequently Asked Questions about DRE Voting Systems, <http://www.verifiedvoting.org/article.php?id=5018>.

[21] Doug Jones, "Testing Voting Systems," Voting and Elections Web Pages, last modified 16 February 2005, http://www.cs.uiowa.edu/~jones/voting/testing.shtml (2 June 2005).

Successful businesses often ask their customers for feedback, and it is not unheard of for a government entity to seek input from the general public. In fact, many police departments conduct surveys to identify areas of satisfaction and areas in need of improvement.[22] Such surveys enquire about officer attributes (friendly, courteous, professional), and process related elements, which relate to how well the officers carried out certain tasks. We recommend that the Elections Department conduct similar surveys among voters. In addition to questions about service and procedures, voters can be asked about their election experience: At any time did you feel uncomfortable voting? If so, why? What, if anything, was confusing to you? What would help you with voting in the future? From the resulting data, the elections department would be able to identify strengths and identify and correct deficiencies, which would improve the overall voting process.

Suggestions for Further Study

Due to the high amount of undervotes in the May election, there is a need to examine the historical and geographic patterns of under voting. There is also a need to consider such factors as machine design, ballot design and instructions, voter height, voter age, and voter race/ethnicity[23]. The possibility of adding an option such as "No vote" should also be considered.

The State of Texas is encouraged to conduct a thorough review of DREs approved by the Secretary of State. The scope of study should include an assessment of threats, vulnerabilities, security controls, and risks associated with the ES&S iVotronic system. The States of Maryland and Ohio have already commissioned studies to address the aforementioned issues as well as possible impacts to the integrity of its elections process.[24]

Conclusion

Many problems and irregularities occurred during the City of San Antonio May election. They are far from insignificant; the types of problems which occurred most likely resulted from bad programming and insufficient testing. No meaningful recount could be conducted due to the lack of a voter verified paper audit trail. In addition, not all data relevant to the audit was released.

We have sought to identify the reasons for various problems and have made recommendations for improvement. The problems detailed in this report are not uncommon. Likewise, the recommendations put forth are not new. Rather, they are based

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[22] Jeffrey H. Witte, "Identifying Elements of Customer Satisfaction in the Delivery of Police Service," *The Police Chief*. May 2004 (18-21).

[23] see, Rebecca Mercuri,."Humanizing Voter Interfaces," 11 July 2004 <http://www.notablesoftware.com/Papers/UPAPaper.html> (24 June 2005).

[24] Science Applications International Corporation, *Risk Assessment Report Diebold AccuVote-TS Voting System and Processes*, Sept. 2, 2003, <http://www.dbm.maryland.gov/dbm_search/ technology/toc_voting_system_report/votingsystemreportfinal.pdf>.

on the changes other counties and states have made and stem from the work of many experts and researchers. It is the sentiment of this Coalition that Elections Administrators cannot afford to take a laissez-faire approach to the electoral process. Elections officials need to be pro-active and take the necessary steps toward improving the process and ensuring that all votes truly are counted.

Appendix:
Analysis of Bexar County District 7 Primary Election on May 7
Prepared by Ellen Theisen, VotersUnite.Org

At the request of Cynthia Test, I examined Bexar County's certified election data for the May 7 primary election.[25] I also examined the following documents provided by Bexar County to Cynthia Test regarding the May 7 primary election in District 7.

♦ Pre-election testing documentation
♦ Copies of the test ballots
♦ Ballot images of the early voting ballots cast on the iVotronics
♦ Ballot images of the election day ballots cast on the iVotronics
♦ List of vote by mail voters
♦ List of all voters
♦ Copies of some precinct poll tapes for election day.
♦ Number of voters registered in each precinct and number of ballots cast

Note that other requested information was not provided to Ms. Test, notably the audit logs from the iVotronics and the central tabulator.

This document summarizes my findings.

Ballot Style Inconsistencies

Inconsistencies found in the comparison of ballot images with test ballots reveal discrepancies in the tracking of ballot styles for Precincts 3023, 3032, and 3054. Eleven precincts in District 7 included the Northside ISD contest on the ballot. Forty precincts did not. I spoke with Jackie Callanen, who did the ballot setup. She told me that the District 7 ballots **without** the Northside ISD contest were ballot style #8, District 7 ballots **with** the contest were style #9. She said that same representation applied to both early voting and election day ballots. This is consistent with the printout of the poll tapes. However:

♦ The ballot image file for early voting in District 7 shows that ballot style #10 includes the Northside ISD contest, ballot style #9 does not.

♦ The ballot image file for election day in District 7 shows that ballot style #3 includes the Northside ISD contest, ballot style #2 does not, **except:**

  - In Precincts 3023, 3032, and 3054, which include the Northside ISD contest, ballots were listed as ballot style #2 and **did** include the race, except:

  - In Precinct 3032, one ballot of ballot style #3 was cast, containing only a single vote in the Northside ISD contest. The test ballots and the poll tapes indicate that the ballot style containing only one contest — for Northside ISD — was ballot style #11.

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[25] http://www.bexar.org/ISDMS/EL/PE/G/050705dr%20-%20All.htm

Testing Flaws

Pre-election testing of the machines used in early voting could not have revealed ballot programming errors. A total of 127 test ballots were used for all ballots in the primary, but the test plan was very poorly designed. Of the 18 ballots cast in the District 7 contest, two votes were cast for each of the 8 candidates, and two ballots contained undervotes.

If the votes of two candidates had been switched, the error could not have been noticed, since each candidate received the same number of votes cast. Thus, the testing provides no assurance that the program was assigning votes correctly. Furthermore, only three machines were tested for early voting, and only one machine was tested for election day voting.

The testing performed on early voting equipment was not in compliance with Texas Election Code: [26]

> § 129.001. (a) As part of the testing of the direct recording electronic voting machine equipment before its use in a particular election, the general custodian of election records shall include a specific test of each machine's logic and accuracy functions **to ensure that the machine properly records, counts, and tabulates the votes.**[27] (highlighting added)

Pre-election testing of the machines used on election day was even less adequate. Only 12 ballots were cast, even though there were 16 ballot styles to test for all candidates and issues in the primary.

♦ No ballots were cast for ballot styles 1, 3, 4, 7, 10, 11, 13, or 15.
♦ One ballot was cast for each of ballot styles 6, 8, 9, and 12.
♦ Two ballots were cast for each of ballot styles 2, 5, 14, 16.
♦ 27 candidates received no votes.

Again, in District 7, the same numbers of ballots were cast for multiple candidates, making it impossible to know if the program was assigning votes correctly. One vote was cast for Valdez, one for Test, none for any of the other candidates; and there were no undervotes.

The testing performed on election day equipment was not in compliance with Texas Election Code 127.094(a) and was in **direct violation** of 127.094(c):

> § 127.094. (a) The test must be designed to determine whether the automatic tabulating equipment **accurately counts ballots** and otherwise functions properly.
>
> (c) The group of test ballots **must contain a predetermined number of valid votes for each candidate** and for and against each proposition on the ballot for the election. The test group must also contain ballots with votes in excess of the allowable number and with other improper votes.[28] (highlighting added)

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[26] Also in violation of Texas law, the Elections Office tested only three machines used in early voting and only one machine used on election day. (This note has been added since the testimony was submitted to the Baker-Carter Commission.

[27] http://www.capitol.state.tx.us/statutes/el.toc.htm

[28] http://www.capitol.state.tx.us/statutes/el.toc.htm

Discrepancies between Voters and Ballots Cast

A comparison of the official statement of ballots cast and the voter-credit lists supplied by the county reveal discrepancies in 41 out of 51 precincts.

♦ 16 precincts showed more voters than ballots cast, for a total of 45 ballots lost.

♦ 25 precincts showed fewer voters than ballots cast, for a total of 73 unexplained ballots.

Ballot Problems Reported By Voters

In addition to the ballot programming problems found in the election data we received from the County, the following reports from voters confirm that the ballot programming was flawed.

♦ District 1, early voting, voters reported that they were unable to find Roger Flores' name on the ballot. Even a poll worker was unable to find it on a senior citizen's ballot, removed the ballot cartridge, reinserted it, and the name appeared. Other voters found it only on the review screen. City Clerk Leticia Vacek admitted this was a problem, but they couldn't do anything about it during the election.

♦ District 4, early voting, voters reported trouble finding Richard Perez' name on the ballot. It was at the top of the screen and difficult to see.

♦ District 7, election day, voters' reported that they couldn't fine Jim Valdez' name on the ballot.

♦ District 7 – voters reported that they selected English and the Spanish ballot appeared.

♦ District 8 students received ballots for District 6. Michael Wright, Bexar County elections office, admitted this was due to "some problems with updating the system."

♦ District 10, election day, voters' reported that they couldn't fine Steven Schauer's name on the ballot.

Incompleteness of the Analysis

A complete analysis would include examination of the event logs, which give details of the iVotronics' activities during early voting and on election day. The Elections Department denied us access to those documents. Cliff Borofsky told me in a phone conversation that they logs contained passwords and therefore were not available to the public.

However, I believe he is mistaken. In an email I received from Dr. David Dill, a computer security professor at Stanford University, Dr. Dill stated that they were not present in any of the ES&S event logs he has examined. He further explained why they would not be present in those logs. He further points out that the information in the event logs is essential to the complete analysis of election data. His full email text is below:

I have obtained the event logs for ES&S iVotronic DRE voting machines (the same model that Bexar County has) from three Florida counties, from the 2004 general election and miscellaneous other elections, under Florida's open records law. None of these files contains anything that could be a password. These machines are clearly password-protected, because there are events in the logs related to passwords, including "Service password fail" events (which must represent a poll worker failing to enter the correct password); so, it must be that the passwords are not saved in the event logs.

It seems unlikely to me that passwords would be saved in event logs under any circumstances. There would be no need for it, and doing so would create an obvious and unnecessary security threat. Furthermore, if it were necessary to save passwords in the event logs, the standard design practice would be to encrypt the passwords so that someone reading the log would not be able to use them to access protected information.

I have found that the event logs contain information that is vital for auditing an election, including machine failures, events that could represent ballot stuffing of several different kinds, poll opening and closing times, etc. Also, it is very useful to be able to compare the number of "vote cast" events in the audit log with the number of ballot images in the ballot image report for each machine. This information would be indispensable for a candidate challenging an election.

I see no legitimate reason to deny candidates or the public access to iVotronic event logs.

Conclusion

Even without a complete analysis that would have been possible only by examining the event logs denied to us by the Bexar County Elections Department, there is clear evidence of ballot programming errors. That evidence includes:

♦ The ballot-style inconsistencies in the ballot image data for District 7.

♦ The apparent loss of 45 ballots lost and the 73 ballots for which there is no associated voter.

♦ The many voters' reports of ballot malfunctions during the election.

Since ballot programming determines how selections on the screen are recorded as votes, the flawed ballot programming found in the May 7 election calls the accuracy of the results into serious question. Since the testing of the iVotronics was not only inadequate to reveal programming errors, but also in violation of Texas Election Code, the results of the election cannot be considered valid.