Possible Effects of the Straight Party Voting Option and Sequoia Voting Machines on the Outcome of the 2004 General Election in Santa Fe County, New Mexico

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Executive Summary

This study of a single county describes and suggests explanations for unusual voting results that occurred in the 2004 presidential election in Santa Fe, New Mexico, namely the effect of the straight party voting option. This study revealed, for one county, several of the patterns found by other researchers who have studied the election in the entire state of New Mexico.[1] Anomalous voting patterns emerged when the presidential results are compared to the totals of the statewide down-ticket candidates for the three voting opportunities: absentee, early voting, and Election Day; each used different Sequoia voting systems. The excessively high rate of under-vote (no vote for any candidate for an office) in the results for president in Santa Fe County and the rest of New Mexico may have occurred primarily when voters chose the straight party voting option. Another vote reducing and possible vote-shifting scheme seems to have been present in the software of the Sequoia scanners that counted hand-marked paper ballots cast during absentee and early voting in the straight party choices for minor parties. Finally, a large discrepancy exists among the number of signatures on voter rosters, the total votes cast, and the presidential votes cast, especially on Election Day.

[1] These researchers were Warren Stewart and Ellen Theisen, researchers for National Ballot Integrity Project; Elizabeth Liddle, British Exit Poll expert and Josh Mittledorf, physicist and mathematician; and Robert Glenn Plotner, researcher and professor.

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I. Background

New Mexico voters had three opportunities to vote in the November 2004 presidential election: by absentee voting, in early voting, and on Election Day. Santa Fe county voters used three Sequoia voting systems: two different scanners and a direct recording electronic (DRE) voting machine. An analysis of the voting results shows that the software in the three voting systems seems to have recorded votes in a questionable manner.

New Mexico absentee ballots were mailed beginning October 5, 2004 and were returned until 7 p.m. on Election Day, November 2. Early voting occurred between Monday, October 18 and Saturday, October 30, 2004. On Election Day (November 2, 2004), voters used ATM-like electronic voting machines (described below) at the 86 poll sites in Santa Fe.

In December 2004 I spent a week in Santa Fe, New Mexico as a volunteer for the recount effort of the Green and Libertarian parties. These two minor parties decided to seek a recount in New Mexico because the state had the highest under-vote rate in the country. Election officials define an under-vote as no vote cast for a specific ballot item. Researchers sought to learn why, in this presidential election, an unusually high number of voters went to the polls and cast ballots without apparently having voted for president. The evidence in this study shows that one possible source of under-votes is how Sequoia machines counted votes when voters used the straight party option in New Mexico and 16 other states.[2]

The New Mexico Election Commission prevented the recount by insisting that the Greens and Libertarians pay $1.4 million instead of the $50 per precinct deposit required by

[2] The 17 states that continue to give the voter the right to vote a straight party ballot are: Alabama, Indiana, Iowa, Kentucky, Michigan, Missouri, New Hampshire, New Mexico, North Carolina, Oklahoma, Pennsylvania, Rhode Island, South Carolina, Texas, Utah, West Virginia, and Wisconsin. (Source: www. Mackinac.org: Mackinac Center for Public Policy, Michigan.) A vote-reducing trap, apparently built into the programming of the straight party option, may also explain the discrepancies between exit poll reports and the official totals in many of the states that offer voters the straight party option.

New Mexico law.[3] The Greens and Libertarians had the necessary $114,400 in the bank. During the week in Santa Fe when the decision not to recount was made by the Election Commission: Governor, the Secretary of State, and the Chief Justice of the New Mexico Supreme Court, all Democrats, I began to examine the election night voting records for Santa Fe County. I had observed unusual patterns when I first looked at these documents. When the recount was called off by December 10, I took the documents home to study and analyze.[4]

[3] New Mexico Election Code {1-14 NMSA 1978} The required deposit is $50 for each precinct for which a recount is demanded and $10 for each electronic voting machine to be rechecked, as security for payment of costs. Recounts and rechecks are judicial proceedings. Costs include docket fees, mileage of the sheriff in serving summons to precincts boards, and fees and mileage of precinct board members.

[4] Researchers Warren Stewart and Ellen Theisen who worked with Votersnuite.org in New Mexico guided me in the early steps in this examination.

II. Source Materials

Volunteers working with Black Box Voting, a Seattle-based nonpartisan organization researching electronic ballot tampering,[5] obtained the following documents through a Public Records request, and made them available to me for this study:

1. Election night reports of absentee ballot totals from the 86 Santa Fe County precincts counted on Sequoia Optech 4C-400 scanners. (Sample: See Exhibit 1.)

2. 430 tally tapes from the five early voting locations where voters hand marked paper ballots that were counted on Sequoia Optech Insight scanners. (Sample: See Exhibit 2.)

3. The internal memory tapes for the 214 Sequoia Advantage push button voting machines — direct recording electronic devices (DREs)—used in all of the 86 precincts in Santa Fe County on Election Day. (Sample: See Exhibit 3).

III. New Mexico Exit Poll Data and Santa Fe Voter Registration by Party

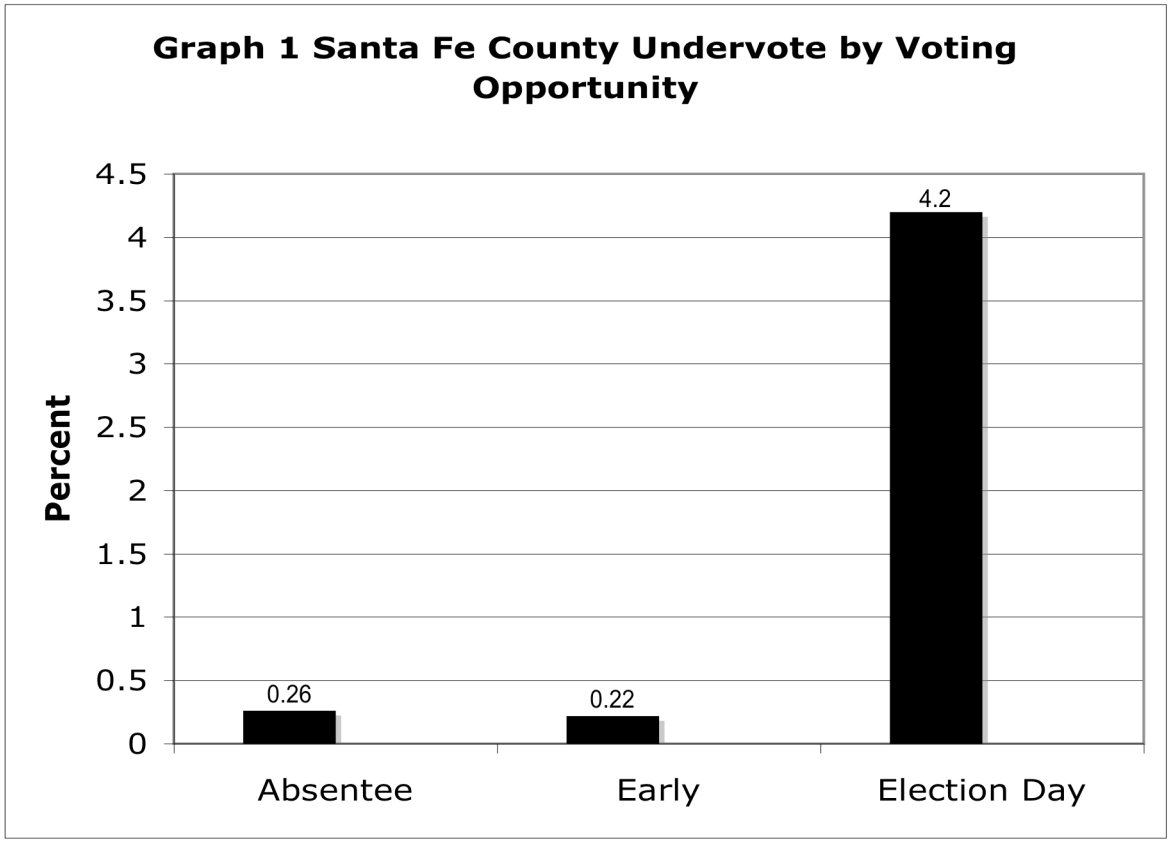
The exit poll data for New Mexico showed Senator Kerry with 51.3% to President Bush's 48.7%. The final results showed Bush with 48.6% to Kerry's 48.0%. Kerry lost the state by 5,988 votes.

Santa Fe County is one of 33 counties in the state. The votes from Santa Fe constituted 8.4% of the New Mexico final vote tally. In this county 62% of voters registered as Democrats, 18% registered Republican, and 20% registered as members of other parties or decline to state a party. The averaged voting results by party for the offices discussed below were: 76% voted for Democrats, 23% voted for Republicans and 1% voted for other parties. Thus, almost three-fourths of the 20% of voters who registered as members of minor parties or as undeclared voted for Democrats.

Researchers who studied the voting results for New Mexico used the certified voting results from the website of New Mexico's Secretary of State Rebecca Vigil-Giron. (See

[5] www.blackboxvoting.org.

Bibliography.) Unlike the sources analyzed in the informative studies of other researchers, I used actual election night reports as source material. These reports contain total numbers of voters who chose the straight party option, information that does not appear on the NM website. The information about the straight party option helped to explain the unusual voting results found in Santa Fe and also may help explain the high under-vote rate on Election Day elsewhere in New Mexico and in other states that used the straight party option. See *Graph 1 Santa Fe County Under-vote by Voting Opportunity* and *Table 5 Santa Fe: Roster Signatures, Ballots Cast, and Presidential Vote*.



IV. The Sequoia Vote-Tallying Machines in Santa Fe County

A. Absentee Voting

Absentee ballots constituted 29% of the total Santa Fe County vote. Voters hand marked their absentee ballots, and election officials counted them on Sequoia Optech 4C-400 scanners. Each scanner recorded the vote totals on a memory pack. Officials transferred the scanner data from this memory pack to a computer that generated the Santa Fe absentee vote totals on a six-page report for each precinct and printed it on 8 ½" by 11" paper. See **Exhibit 1**, an example of page one of an absentee ballot report discussed below.

Note the words, "Results With Hand Tally" on the left hand side of the top line of the absentee ballot report. On the election night, poll workers hand-counted a small number of absentee ballots that voters brought to the polls. These single page hand tally sheets measure 11" by 17." The totals of the hand-counted absentee ballots were added to the scanned totals on the election night absentee ballot reports.

B. Early Voting

Early voting constituted 35% of Santa Fe County's totals. Voters at each of five sites hand marked their ballots and placed them into the Sequoia Optech Insight scanners that counted the paper ballots. Each scanner printed reports on a single roll of paper tape with the daily totals recorded for each precinct. I cut these large rolls apart by precinct. Each scanner tape measures 3" by 36"- 37." See **Exhibit 2**, an example of an early voting tally tape.

Three of the early voting rolls of scanner tape ended with daily error messages generated by the scanners. These messages showed that numerous errors occurred during the daily voting process. See **Appendix A** for a detailed list, tally, and analysis of the error messages. The most common error messages included: voter created—471 occurrences--

"over-voted office;" mechanically caused – 121 occurrences-- "orientation errors"; and ballot related – 51 occurrences-- "un-voted blank ballots." The machines apparently did not notify voters of an under-vote since the list of errors contained no "under-vote" messages.

C. Election Day Voting

Thirty-six percent (36%) of voters cast their ballots on Election Day. These voters operated Sequoia Advantage voting machines that work like automatic teller machines (ATM). Voters pressed buttons on a keypad to indicate their choices as they read down the ballot on the screen of the voting machine. Each electronic ballot ended with a review screen. If necessary, voters could scroll up the ballot to add or correct their vote before they pushed the "cast ballot" button. The internal memory tapes from these machines measure 3¾" by 36." See **Exhibit 3**, an example of an internal memory tape from Election Day.

V. Analysis

A. Comparison of Presidential Vote Distribution: Absentee to Election Day Voting

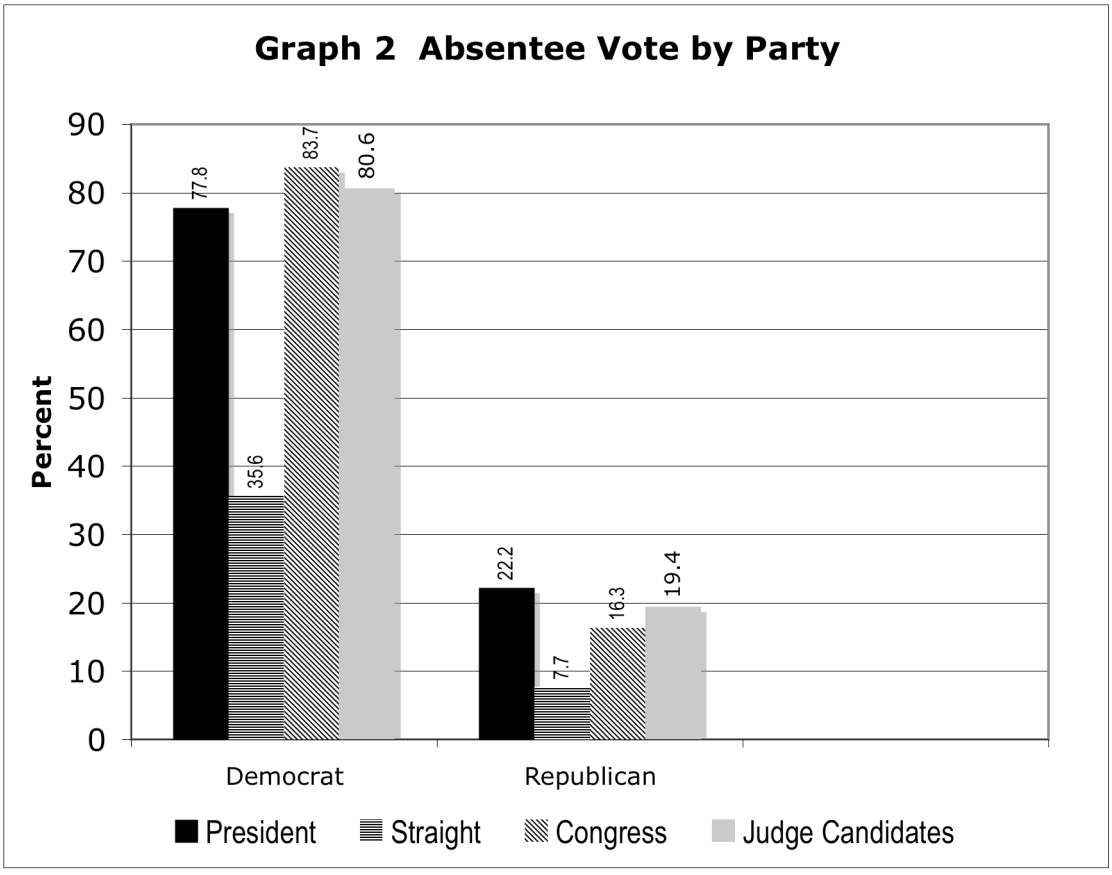
Santa Fe County's absentee voting results served as a basis for statistical comparison to the results in early voting and on Election Day. *Table 1 Santa Fe: Presidential Vote by Voting Opportunity* and *System* shows that the percentage of Bush votes increased 11%, from 21.8% in absentee voting to 32.7% on Election Day. Kerry's percentage of votes cast, however, decreased by 11%: from 77% to 66%. What factors contributed to this pattern?

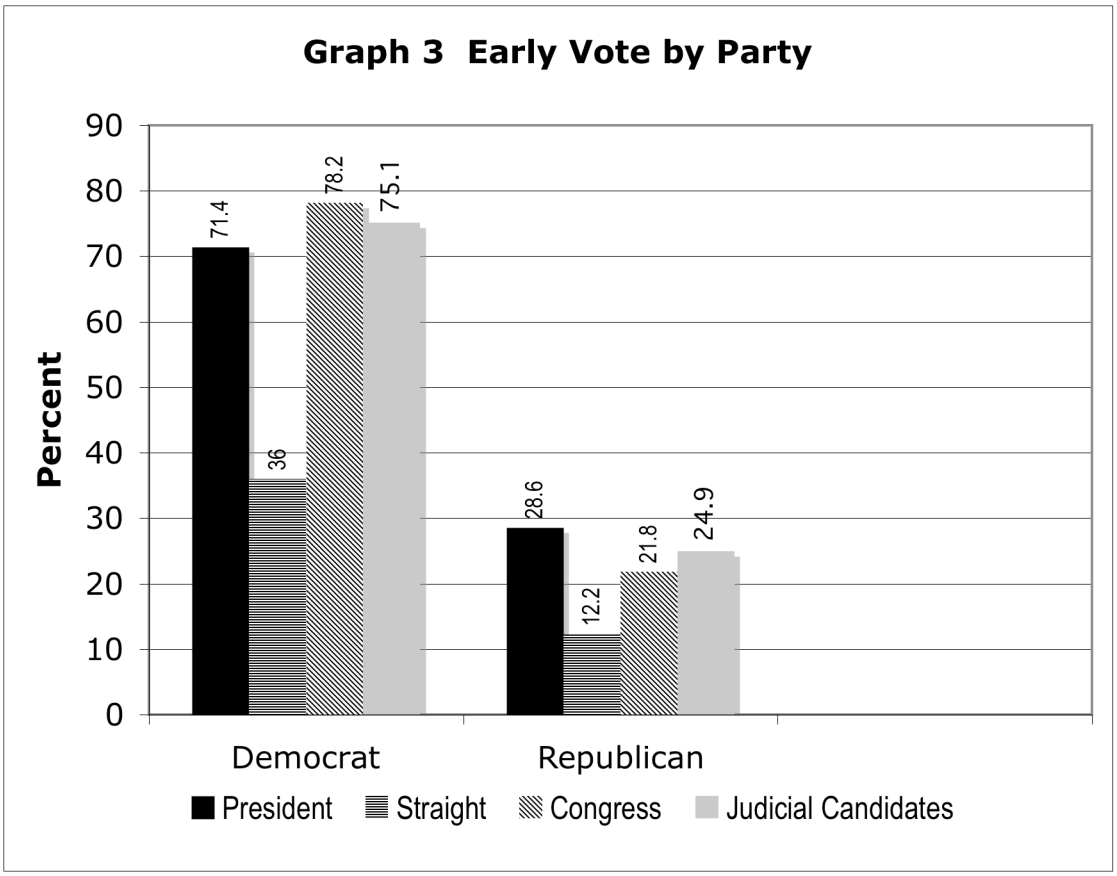
Table 1. Santa Fe: Presidential Vote by Voting Opportunity and System

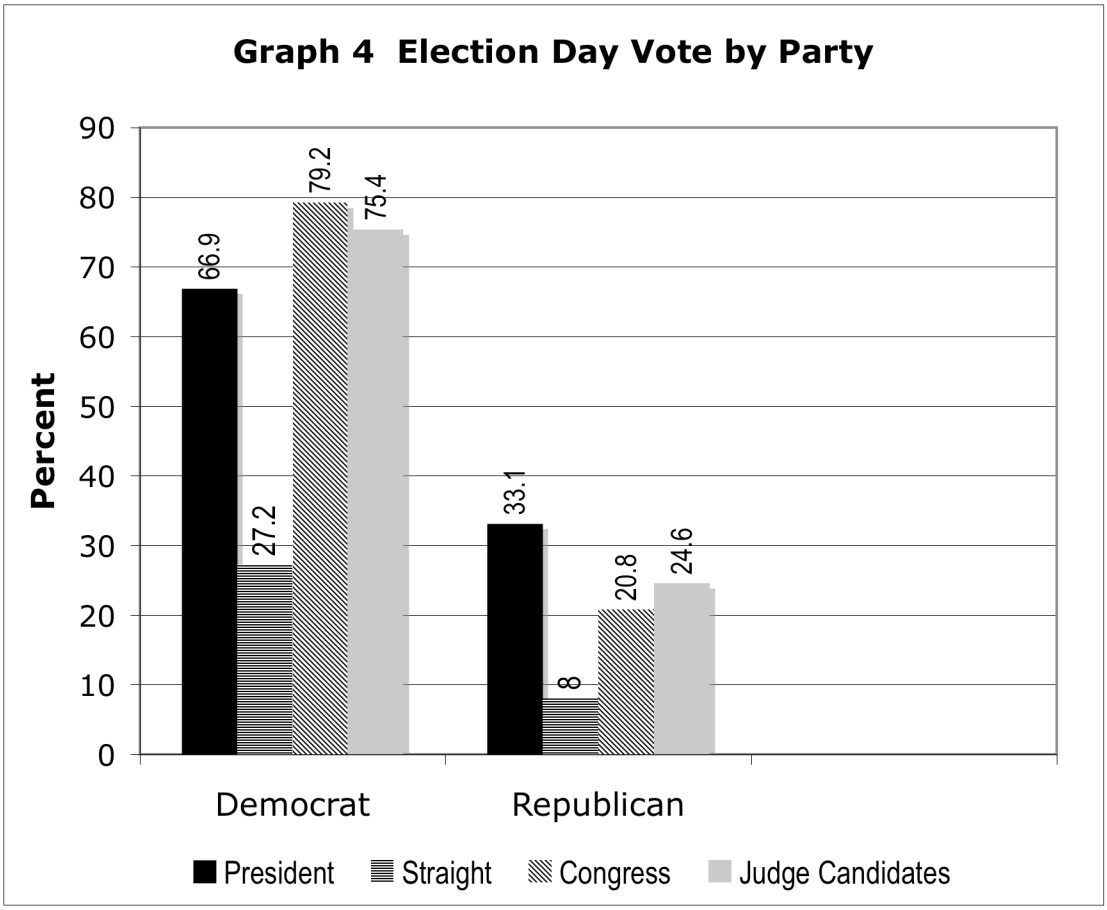
VOTING OPPORTUNITY	BUSH	KERRY	OTHER	TOTAL
Absentee	4,151	14,725	156	19,032
% of total Absentee	21.8%	77.4%	0.8%	29.3%
Early Voting	6,442	16,051	176	22,669
% of total Early Voting	28.4%	70.8%	0.8%	35.0%
Election Day	7,676	15,278	307	23,161
% of total Election Day Voting	32.7%	66.0%	1.3%	35.7%
TOTAL VOTE	18,169	46,054	639	64,862
	28.1%	71.0%	1.0%	100.0%

Where the probability, p = <.0001.

The differences in Bush and Kerry proportions -- especially between the absentee voting results and Election Day results -- cannot be attributed to chance. This extreme increase for Bush and decrease for Kerry from absentee and early voting to election day is statistically unlikely to happen in normal voting results since approximately one third of the voters in Santa Fe voted in each of the voting opportunities; that is, one might expect similar percentages across the three. See Table 1 above and *Graph 2 Absentee Vote by Party, Graph 3. Early Vote by Party,* and *Graph 4 Election Day Vote by Party.*




Graph 3 Early Vote by Party
Percent
90
80
70
60
50
40
30
20
10
0
71.4
36
78.2
75.1
28.6
12.2
21.8
24.9
Democrat
Republican
President
Straight
Congress
Judicial Candidates


Graph 4 Election Day Vote by Party
Percent
90
80
70
60
50
40
30
20
10
0
66.9
27.2
79.2
75.4
33.1
8
20.8
24.6
Democrat
Republican
President
Straight
Congress
Judge Candidates

B. Presidential Vote Compared to Statewide Down-Ticket Candidates

The differences between Kerry's totals and those of the down-ticket candidates for the three voting opportunities and systems constitute a second unusual voting result. Down-ticket refers to contests on the ballot below the president. These statewide down-ticket individuals were U.S. Congressman Tom Udall, Democrat, and his Republican opponent Gregory Tucker, and two statewide judicial candidate contests: Democrat Edward Chavez opposed by Republican Ned Fuller and Democrat Michael Vigil opposed by Republican Paul Barber. To compare these down-ticket candidates to the presidential candidates, I averaged their three tallies. See *Table 2 Santa Fe: Congressional and Judicial Candidates by Voting Opportunity*.

Table 2. Santa Fe: Congressional and Judicial Candidates by Voting Opportunity

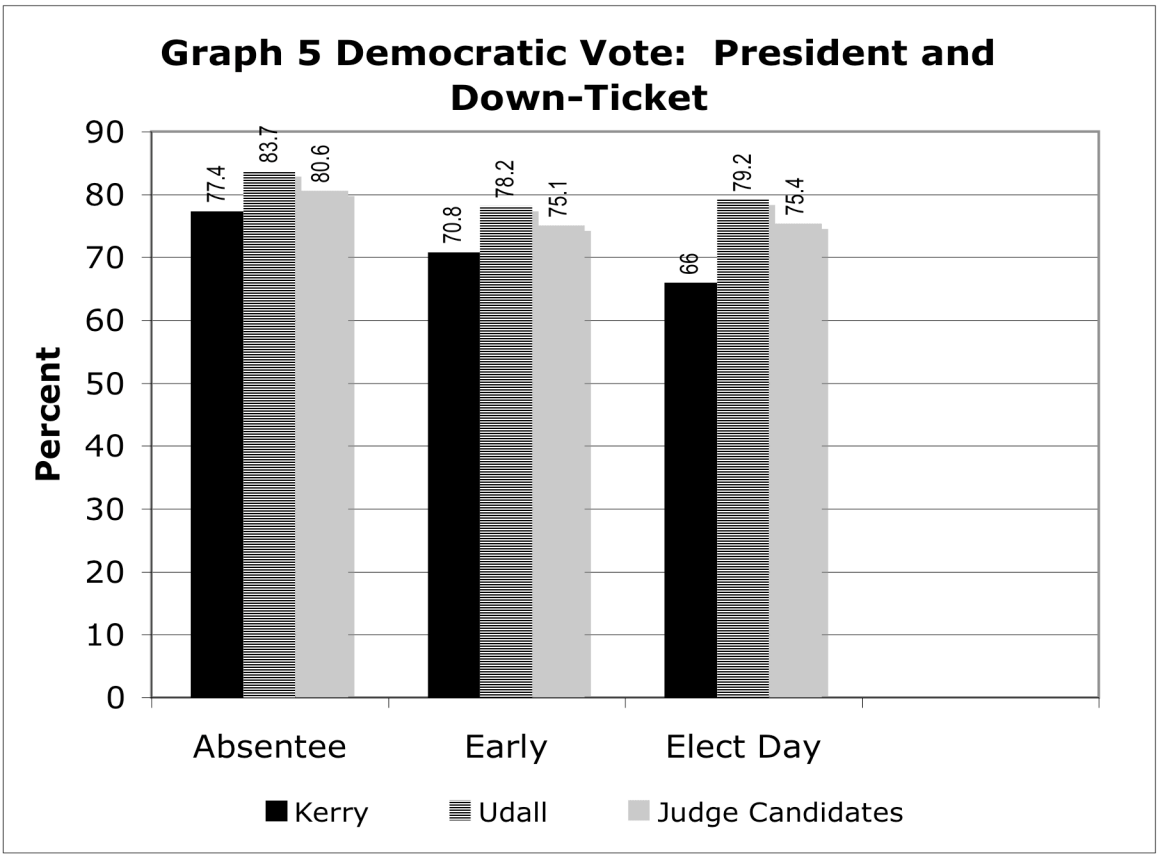
Voting Opportunity	Republican Congress-man Tucker	Republican Judicial Candidates Averaged Fuller and Barber	**Average** Republican Congress & Judicial Candidates	Democratic Congress-man Udall	Democratic Judicial Candidates Averaged Chavez, Vigil	**Average** Democrat Congress & Judicial Candidates
Absentee % Total AB	3,060 16%	3,245 10%	3,183 10%	15,752 84%	13,472 81%	14,232 82%
Early % Total EV	4,885 21.8%	5,390 25%	5,221 23%	17,534 78%	16,264 75%	16,687 76%
Election Day % Total ED	4,722 20.8%	5,429 25%	5,193 23%	17,938 79%	16,628 76%	17,065 77%
Totals % of all	12,667 20%	14,063 23%	13,597 22%	51,224 80%	46,364 77%	47,984 78%

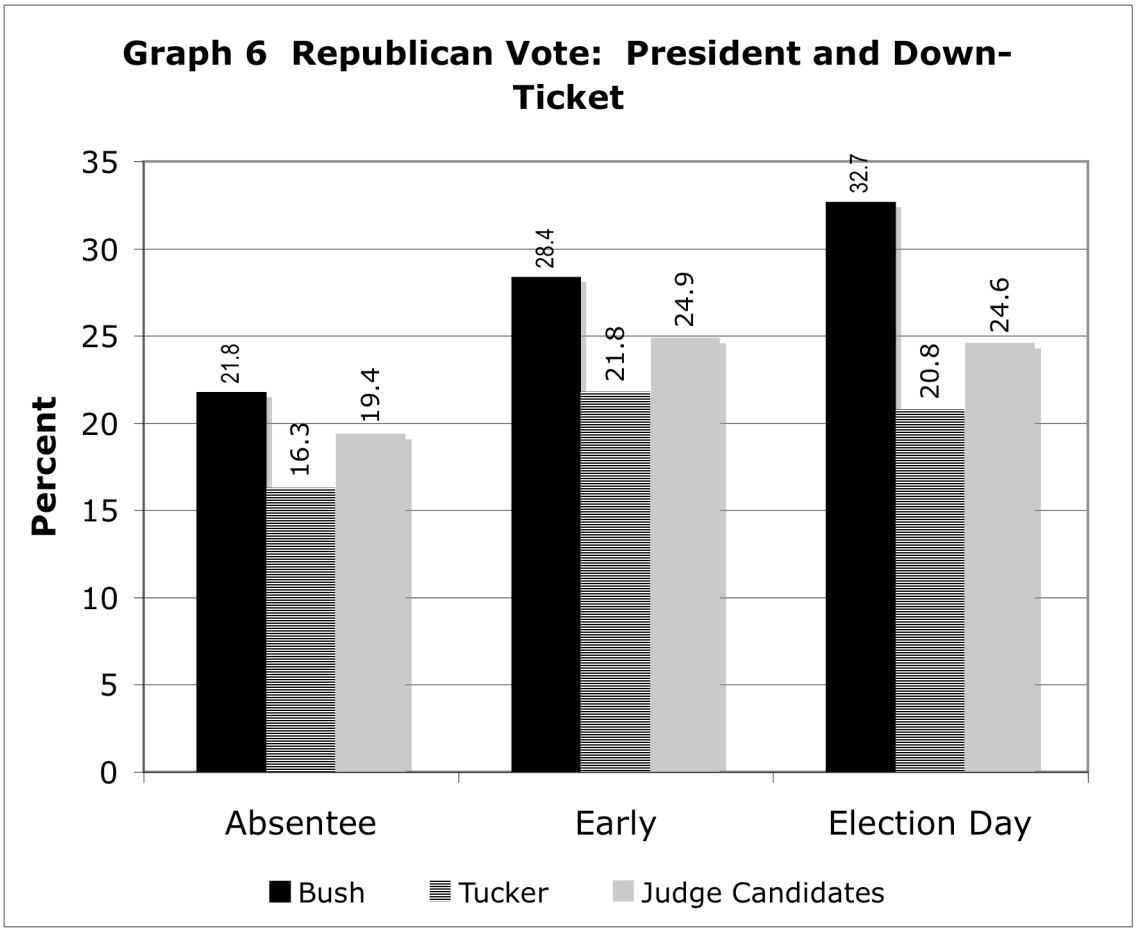
% of total Absentee calculates the raw number as a percent of the total votes for each contest during absentee voting; that is Tucker: 3060 (16%)+Udall: 15752 (84%)=18,812

On Election Day, Senator Kerry's votes were 11% less than the statewide down-ticket Democrats. (See *Table 1*.) In early voting Kerry's final result was 5.4% less than the statewide Democrats, and in absentee voting, Kerry's total vote was 4.8% less (*Table 1*). The totals of the down-ticket Democrats decreased only five percentage points from absentee to election day compared to Kerry's 11% decrease. In this strongly Democratic County the voters' support for the down-ticket candidates diminished five to six points

whereas their support for Kerry appears to diminish 11 points. Across the country in the 2004 election, this pattern occurred in many states: down-ticket Democratic candidates got elected and progressive issues passed while Kerry "lost" the states. This puzzling pattern in other states alerted me to what happened New Mexico. I examined the Santa Fe results to find a possible explanation.

On Election Day, President Bush garnered 10% more votes than down-ticket Republican candidates. This was a substantial increase from his 6% higher vote than the down-ticket Republican candidates in early voting, and his 5% higher vote totals in the absentee results. See previous *Tables 1* and *2* and *Graph 2 Absentee Vote by Party, Graph 3 Early Vote by Party,* and *Graph 4 Election Day Vote by Party.* Also see how the presidential candidates' totals compared to the down-ticket candidates' totals in the following graphs that illustrate this phenomenon: *Graph 5 Democratic Vote: President and Down-Ticket* and *Graph 6 Republican Vote: President and Down-Ticket.*





VI. Effect of the Straight Party Choice on Presidential Under-Votes

A. Election Day Balloting

An "under-vote" means that no vote was cast for a candidate. The large number of under-votes contributed to the unusual voting results in Santa Fe County and the rest of New Mexico. The under-vote rates for absentee and early voting were low: 0.2% (two tenths of a percent). On Election Day, the under-vote was 4.2%, twenty times as high as in absentee and early voting (1,016 under-votes compared to 50 and 51 votes). The total under-vote, 1117, in Santa Fe County was 6.5% of New Mexico's total under-vote of 17,095. See detailed discussion of the under-vote in **Section VII Roster Signatures, Ballots Cast, and Presidential Votes** and *Graph 1* above *Santa Fe County Under-vote by Voting Opportunity*.

The straight party option came first on the ballot. See attached examples of individual precinct reports that show ballot layouts **(Exhibits 1, 2, and 3).** Voters could mark the party

for which they wanted to vote throughout the ballot. Voters expected that their straight party selection would automatically register a vote for all the candidates of that party on the ballot. See *Table 3 Santa Fe: Straight Party Option by Voting Opportunity.*

Table 3. Santa Fe: Most Straight Party Votes Cast by Democrats

Occasion	Democratic Straight	Republican Straight	Other Party Straight	% Total Straight Party
Absentee (AB) % str .party AB total	6,743 81%	1,461 18%	81 1%%	8,285 30% of Total straight
Early Voting (EV) % str. party EV total	8,093 74%	2,751 25%	42 .3%	10,886 40% of Total straight
Election Day (ED) % str. party ED total	6,222 77%	1,838 23%	16 .2%	8,076 30% of Total straight
Total Straight % Total Straight	21,058 77%	6,050 22%	139 .5%	27,247 100%

% str. party total means the percentage of the *party*'s *straight party total votes* for each voting opportunity: Absentee, AB; Early voting, EV; Election Day, ED.

Table 3 shows that in each voting opportunity about three to four and a half times more Kerry voters chose the straight party option than did Bush voters. Democrats constitute two thirds of the Santa Fe registered voters and vote straight party at a high rate.

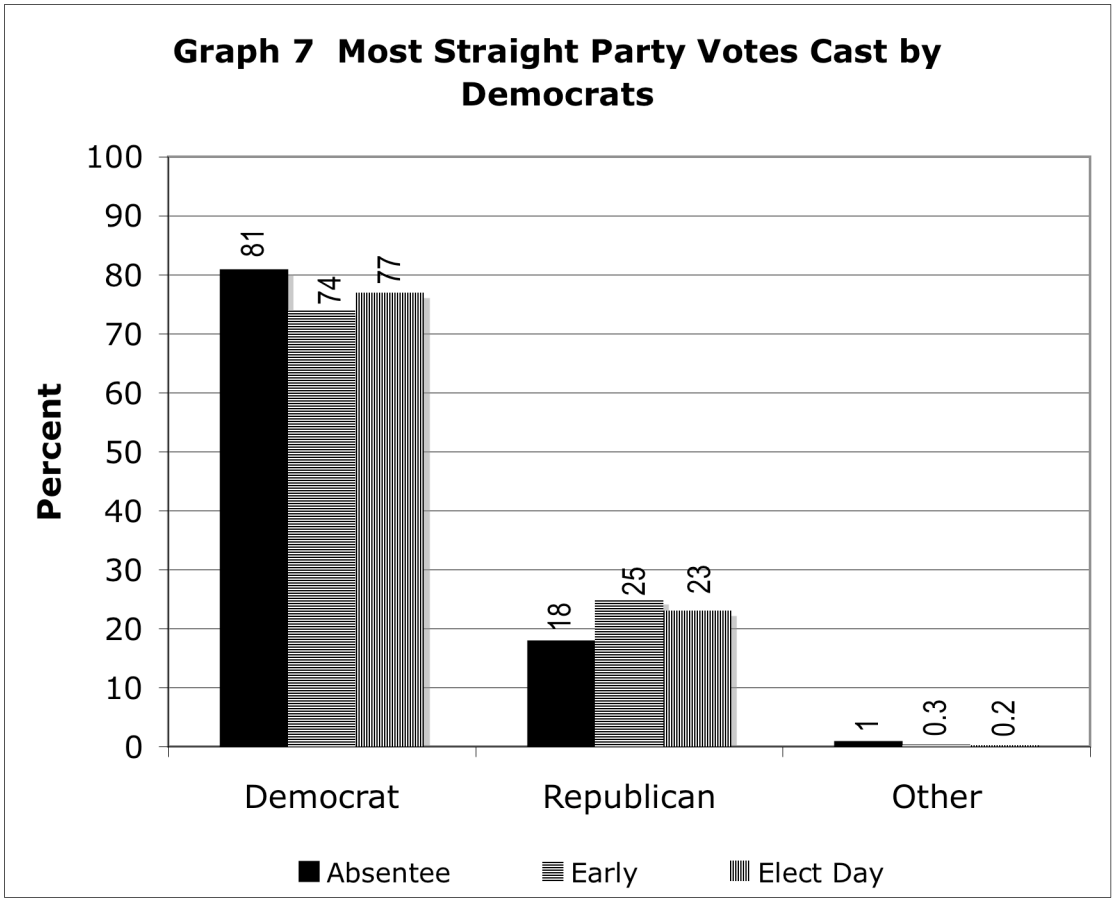
Table 4. Santa Fe: Straight Party Option as a Percent of Total Party Vote

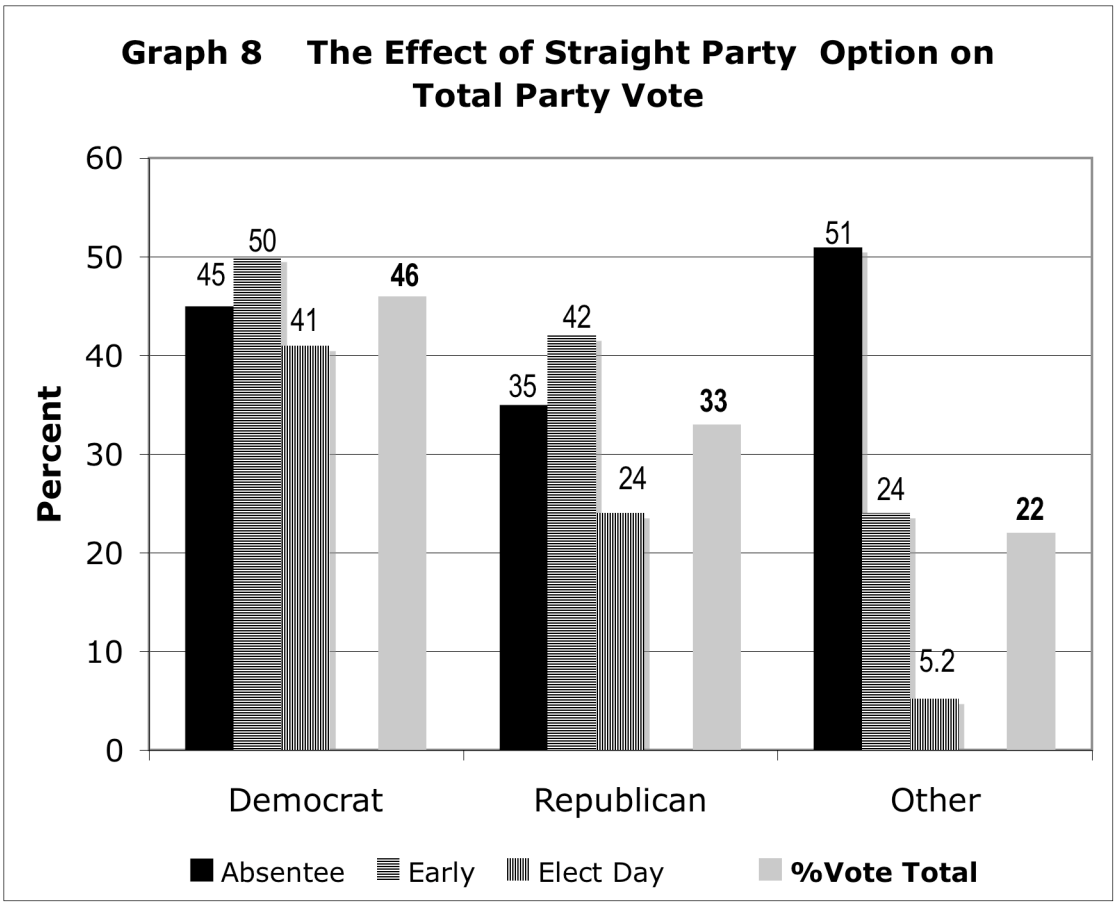
Occasion	Democratic	Republican	Minor Party
Absentee %straight party	45%	35%	156 51%
Early Voting %straight party	50%	42%	176 24%
Election Day %straight party	41%	24%	307 5.2%
Total %straight party	46,054 46%	18,169 33%	639 22%

Table 4 develops the information in *Table 3* and shows the percent of the voters in each party that voted straight party. While almost half of all Democratic voters chose the straight party option, combining absentee, early, and Election Day voting opportunities, only one third of Republicans chose the straight party option. The anecdotal evidence about how the proprietary software handled the straight party option in the Sequoia DREs suggests that voters' choice of that option contributed to the large under-vote on Election Day. And it

probably contributed to the larger Bush totals compared to the other statewide Republican races (*Table 2*). Because the under-vote totals listed for each office is an aggregation of the under-votes for all the candidates, no calculation can separate the under-vote totals for each candidate.

See *Graph 7 Most Straight Party Votes Cast by Democrats* and *Graph 8 The Effect of the Straight Party Option on Total Party Vote.*





The evidence about how the straight party option worked comes from the compiled lists of voter complaint calls received on Election Day by the many election protection services sponsored by groups such as the NAACP, PFAW, MoveOn, etc. These complaints are compiled by the Election Incidents Reporting Service (EIRS) (http://voteprotect.org). The reports shed light on the problems that occurred when voters chose the straight party option in New Mexico and other states.

EIRS records indicate that the straight party option appeared **not** to have included a vote for president for every party except for Republicans. When a Republican voter selected the straight party option, a Bush vote appeared to register automatically, that is, the machine defaulted to Bush (with rare exceptions). Straight party voters from parties other than the Republican Party may not have discovered the absence of their presidential vote on their review screens. And others who reported finding no presidential vote on their review

screens may not have realized how their choice of the straight party option contributed to the absence of a presidential vote. The straight party option appeared to have created a large under-vote by means of the no-vote-for-president (except Bush) phenomenon.

The second way the straight party option contributed to the under-vote occurred when voters selected candidates outside their straight party selection. Many voters may not have known that on electronic voting machines, after selecting the straight party option, if they then voted for a candidate from another party, that non-straight party vote cancelled the voter's straight party choices throughout the ballot. For example, perhaps a Democrat voted for the Green Party County Surveyor instead of the Democratic candidate running against him. That one vote outside the Democratic straight party cancelled all the automatically selected votes for Democrats throughout the ballot.

When choosing the straight party option, voters reported another problem. Instead of no presidential choice appearing on the voting machine screen, voters reported that the wrong candidate, often Bush, appeared. Only two EIRS reports in New Mexico (Sandoval County) came from Republicans saying that their straight party selection, at first, showed a vote for the Democratic or Green Party selection.[6] These voters reported that they corrected this wrong choice.

The difficulty in removing the wrong presidential choice, however, created another means of generating an under-vote. To override the automatic Bush vote or the voter's wrong choice on the Sequoia push-button electronic voting machines, voters had to push the button for Bush (or the wrong candidate) again (a toggle mechanism) to erase the vote. Voters reported that they had to push the Bush button from two to ten times to remove that incorrect choice before they could vote for their preferred candidate.

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[6] Maddy, Erik: Concerns rise on early voting, The Rio Rancho Observer, October, 26, 2004. http://www.observer-online.com/articles/2004)

Furthermore, after removing the vote for the wrong candidate and voting for their correct one, some voters reported that when they got to the review screen at the end of the ballot, they found no vote for president had registered. Voters reported the need to scroll back up the ballot one or two more times to vote again for their presidential choice. Even when the review screen actually showed their correct vote, citizens voiced concern that their vote would not actually register. They worried about the voters who were unable to find and correct this problem of no-vote or a wrong vote for president.

Overriding the automatically selected incorrect choice was especially difficult for voters inexperienced with electronic voting machines. Researchers Liddle and Mittledorf (2005) found that precincts with large Native American and minority populations had the highest rate of presidential under-vote throughout New Mexico.

In June 2005 I conducted a phone interview with Ernest Marquez, elections Bureau Director for the Secretary of State of NM, about how the straight party option worked and if it included a vote for president. He said it did and denied hearing or reading the reports saying it did not include a vote for president or that the machine defaulted to Bush no matter which party candidate a voter chose. Marquez suggested that voters might have thought the straight party option merely asked for party affiliation since it was listed first on the ballot.[7]

On April 27, 2006 Mr. Marquez said that the Sequoia, ES&S and Shouptronic machines all had printed instructions on the ballot face warning voters not to vote for individual party candidates while voting straight party ticket. If voters wanted to vote outside their straight party, they must press the button next to the checked-off name to deactivate that choice (a toggle mechanism) and then press the button next to the candidate of their choice. Denise Lamb, Santa Fe Registrar of Voters, in a 9/1/05 memo to the Election

[7] The recent findings in the discovery phase of the court case, Lopategui, *et al.* vs. Rebecca Vigil-Giron, back up these voter reports and contradict Marquez.

Reform Task Force, said "one possible cause of under-voting in New Mexico on electronic voting machines is straight party voting. If a voter does not read the directions, presses the straight party option, and then decides (to be extra sure) to press the button for president, the presidential vote is de-selected and no vote has been cast." The comments of these elections officials corroborate the observations and complaints of the voters.

In sum, on Election Day the straight party option often produced either no-vote-for-president or an inadvertent vote for Bush when voters voted on the Sequoia Advantage electronic voting machines. In New Mexico, the Election Day statewide presidential under-vote was 17,095.[8]

B. Absentee and Early Voting

In contrast to the extremely high under-vote rate on Election Day discussed above, researchers Stewart and Theisen, 2004; Liddle and Mittledorf, 2005; and Plotner, 2005, all called attention to the very low under-vote in the early and absentee results. Pre-Election Day voting constituted 64% of Santa Fe's total ballots. Two models of Sequoia scanners counted these hand marked ballots. In these results, I found another vote-reducing pattern that masked some under-votes. The software running the scanners may have introduced a vote-shifting scheme that, unlike the error messages discussed earlier, the machines were programmed not to report.

The Early Voting scanner tape for precinct 67 (**Exhibit 2**) shows that one voter chose to vote Green straight party. In the ballot section immediately below, the expected vote for Cobb and LaMarche does not show this vote but is, instead, a zero. What happened to this vote? Since the tally tape showed no under-vote, that vote must have registered for some

[8] The final under-vote was 21,084 because the certified tallies included provisional and updated absentee ballot totals. This under-vote far exceeded the number of votes Bush won the state by, namely 5,988.

candidate, but for whom? No minor party presidential candidate received a single vote in this precinct. The software in the scanner could have shifted that vote to Bush or Kerry. Since Bush received more votes than his down-ticket colleagues and Kerry received less (about 5%) than his, that vote may have been shifted to Bush.

The Absentee Voting Report for precinct 27 (**Exhibit 1**) provides another example of this possible vote reducing and shifting scheme. Here two voters selected the Green straight party option but again **no** presidential vote registered for the Green candidates Cobb and LaMarche and no under-votes were listed. This Absentee Voting Report, however, showed that one voter selected Libertarian straight party and a vote for Michael Badnarik **did** register. No more than five minor party voters selected the straight party option on the absentee and early voting reports for any of the 86 Santa Fe precincts. I could, therefore, potentially trace these votes from the straight party choices to the presidential candidate choices. (In contrast, on Election Day the 22 straight party votes cast for minor parties did register a vote for the presidential candidate.)

On the Santa Fe County Absentee Voting Reports, I found a total of 56 minor party single votes in the straight party section of the ballot that did **not** register as a vote for that presidential candidate and these votes did not register as under-votes. An additional 22 votes **did** register a vote like the above-noted Libertarian vote. In Absentee voting, 72% of the minor straight party voters apparently did not have their vote counted while 28% did have their votes counted.

The early voting results also revealed a vote reducing and shifting pattern: 25 straight party votes for minor party presidential candidates did **not** register a vote nor get counted as under-votes, while 17 **did**. Here 60% of these voters did not get their vote counted while 40% did. Perhaps Bush got these votes by means of a minor party vote-shifting algorithm written into the scanner software. If the court were to order an actual

recount, citizens could examine these hand-marked ballots to determine for whom these voters actually cast their presidential votes.

Table 5. Pre-Election Day Minor Party Straight Party Votes

Minor Party Straight Party Votes	Absentee Votes		Early Voting Votes		Absentee & Early Voting - % Minor Party Total	
	counted	not counted	counted	not counted	percent counted	percent not counted
Green Party	9	43	7	20	20%	80%
Libertarian	10	8	2	2	55%	45%
Constitution	3	5	5	3	50%	50%
Total	22	56	14	25	31%	69%

Table 5 shows that voters cast 117 votes for minor parties presidential candidates by means of the straight party choice in Santa Fe before election day but only received 31% of the votes that were cast. The Green party lost 80% of the 79 votes that did not register for minor party presidential candidates. In the certified totals for Santa Fe, Cobb and LaMarche won 65 votes but would have won nearly twice that number had the 63 uncounted straight party votes been recorded.

The Libertarian candidate, Badnarik won 209 in the certified totals and would have earned 10 more with the uncounted straight party votes. Constitution Party candidate Peroutka earned 49 in certified totals and would have gained 8 more votes had his straight party votes registered. In Santa Fe County, when minor party voters chose the straight party option one would expect that they intended to vote for that presidential candidate. (Ralph Nader ran as an Independent candidate for president, thus, voters could not use the straight party option to vote for him.)

Among the minor parties, only the Green Party ran any candidates below the president in the 28 other contests on the Santa Fe County ballot. Green Party candidate for County Surveyor, Robert Dean Williamson garnered 34% of the vote against the Democrat

Allen C. Grace. And in one-fifth of the county, Green Party member Herman J. Montoya won 22% of the vote against Democrat Jack Sullivan for County Commissioner, District 5. Remember that twenty percent of Santa Fe citizens register as members of a minor party or as undeclared. Votes for Montoya, therefore, reflect this Registration rate while votes for Williamson exceed it. The votes for Green party candidates Williamson and Montoya illustrate the real presence of Green Party voters in Santa Fe, and, thus, the 63 voters who selected the Green Straight Party Option probably meant their vote to register for its presidential and vice presidential candidates, Cobb and LaMarche.

C. Additional Evidence of Scanner Error

Former voting machine examiner and now Associate Professor at the University of Iowa, Dr. Douglas Jones, in a published interview suggested the possibility of Sequoia programs that shift votes from minor to major party candidates. Sequoia contracts, he noted, require that Sequoia technicians program the scanner memory packs at company headquarters, not in the counties where they are used. The election officials who are responsible for the integrity of their elections cannot examine the software programs because the company claims that they are proprietary. The Santa Fe evidence reflects reports in other states that used these Sequoia Optech scanners and verifies what Dr. Jones observed. Problems included assigning votes to the wrong candidates, failing to read large numbers of votes, not recognizing images made with gel ink, and not even accurately counting the total number of ballots cast.[9]

In sum, for the three voting opportunities, 54% of Democrats and 67% of Republicans did not choose the straight party option. The problems just described for the straight party option on Election Day: no-vote-for–president and default-for-Bush, therefore, appeared to

[9] These incidents of problems with Sequoia scanners are compiled and available on www.votersunite.org. The interview of Dr. Jones is at www.blackboxvoting.org.

have had a negative effect on the voting results for Democrats (46%) since the straight party software mechanisms benefited straight party Republican voters (33%). One could posit that the under-vote came from the straight party choice made by Democrats and minor party voters. Add the Election Day under-vote to Kerry's totals: 1,016+15,278 = 16,294. This 16,294 makes Kerry's total 5% less than the averaged down-ticket Democrats' results on Election Day rather 10% less.

VII. Roster Signatures, Total Votes Cast, and Votes for President: Hidden Provisional Ballots

For each voting opportunity I compared the total roster signatures to the total votes counted. The website of the NM Secretary of State lists the roster totals.[10] Overall in Santa Fe, that calculation showed 1,523 more roster signatures than total ballots cast. That is a large number of voters who signed the roster books, but for some reason, did not have their ballots counted. This number is 27% higher than the total Santa Fe County presidential under-vote of 1117. Robert Plotner reported that, in New Mexico, as occurred in other states, private companies employed people to register new voters and then instructed those people to destroy the forms of newly registered Democrats. Thus, many voters went to the polls trusting that they had properly registered to vote, signed the roster books, and perhaps, filled out provisional ballots that were ultimately not counted because officials did not find their names on the registration rolls. Warren Stewart, researcher for the National Ballot Integrity Project, explained that, rather than post the counted and uncounted provisional ballots as a separate category, the election officials for some counties added them to Election Day results and for other counties, added them to absentee or early voting totals.

This study also found 205 phantom votes, (more votes cast than roster signatures) in

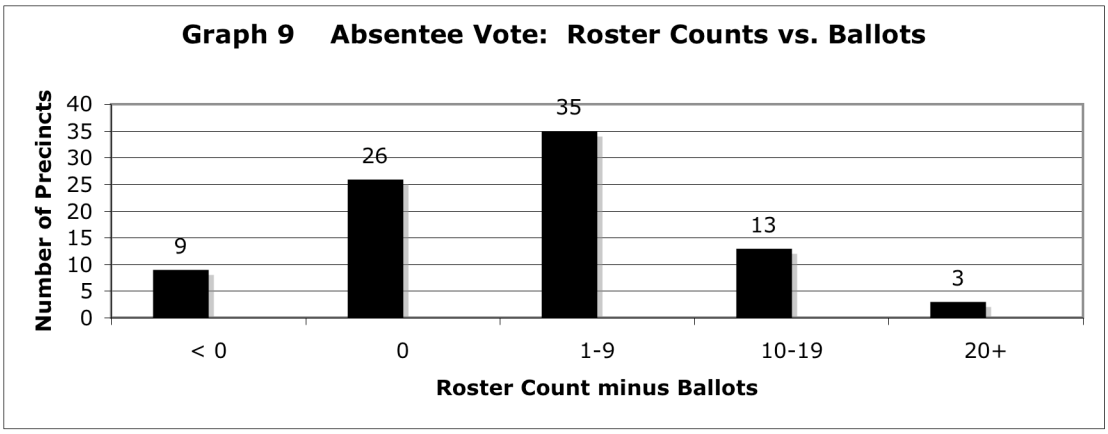
[10] The total number of signatures listed in the absentee voting roster totals comes from the absentee envelopes received at election headquarters.

the three voting opportunities: 95 in absentee voting and 110 in early voting. See *Table 6 Santa Fe: Roster Signatures, Ballots Cast, and Presidential Votes* below. Researchers Stewart and Theisen explained that election officials subtracted phantom votes from the under-votes in their certified vote tallies instead of listing the phantom votes in a separate category on the certified totals.[11]

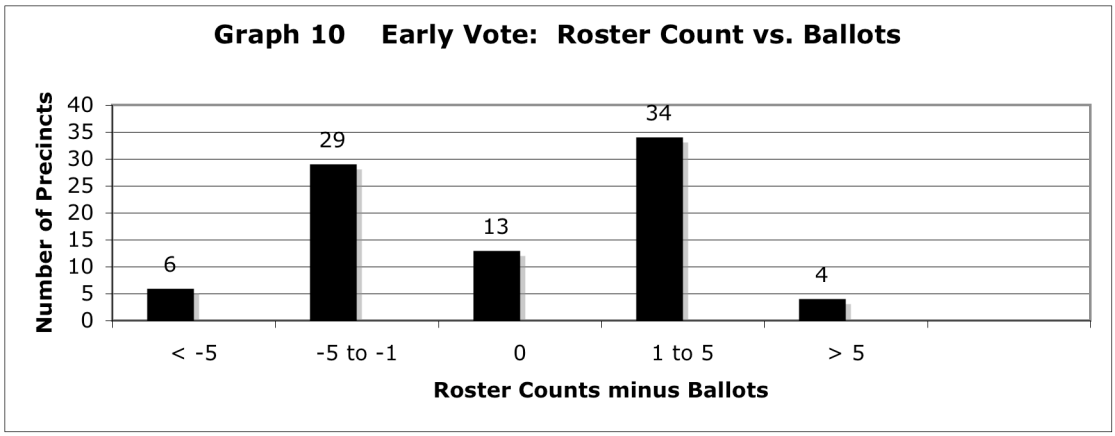
Table 6. Santa Fe: Roster Signatures, Ballots Cast, and Presidential Vote

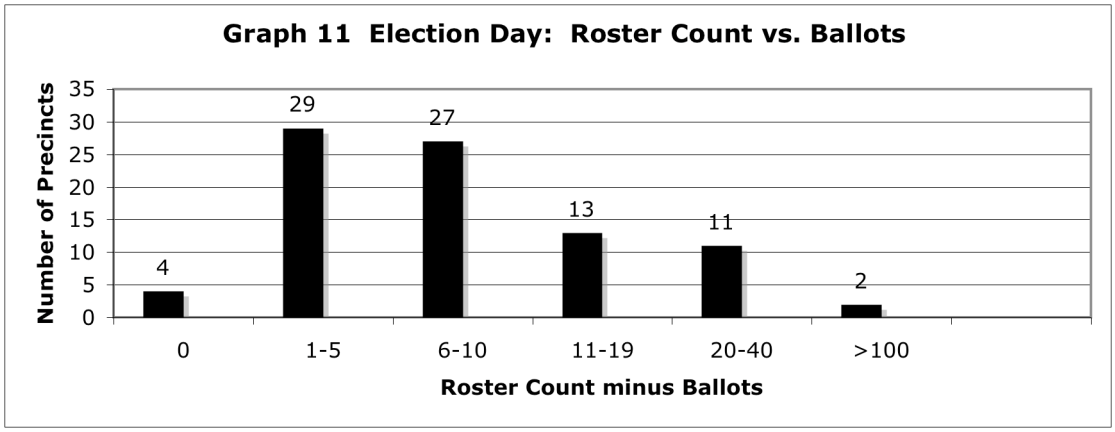
Opportunity	Roster	Total Ballots	Roster minus Total ballots;	Total Pres Votes cast	Total Votes minus no Pres. vote =under-vote
Absentee	19,396	19,082	409	19,032	50
Early Voting	22,719	22,720	109	22,669	51
Election Day	25,182	24,177	1005	23,161	1016
Totals	67,297	65,979	1523	64,862	1117

See *Graph 8 Absentee Vote: Roster Count vs. Ballots; Graph 9 Early Vote: Roster Count vs. Ballots*; and *Graph 10 Election Day: Roster Count vs. Ballots*.



[11] "An analysis of New Mexico data shows high numbers of both under-votes and phantom votes. However, the extent of both is understated in the summary state totals. This is because, when statewide data gives the total ballots cast and the total votes for president, phantom votes reported at the precinct level are canceled out by the under-votes reported in other precincts and, at the same time, reduce the number of perceived under-votes." Summary Report on New Mexico State Election Data by Ellen Theisen and Warren Stewart on behalf of the National Ballot Integrity Project.





The number, 1523, found by subtracting the votes cast from the total number of signatures may be the uncounted provisional ballots: 2% of the total ballots cast in Santa Fe County. Add this 1523 to the presidential under-vote of 1117 and get 2,640, which is 4% of the total Santa Fe County vote. This four percent may represent the extent of voter disenfranchise-ment in this county.

VIII. Conclusion

This study suggests that the programmed mechanisms in the straight party option contributed to the high under-vote rate on Election Day. These mechanisms may also explain the unpredictable and statistically anomalous voting patterns that reduced Kerry's totals from absentee to Election Day in the Democratic county of Santa Fe. These suspected programmed mechanisms for the straight party option include a vote reducing and shifting formula in the Sequoia scanners used to count hand marked ballots for absentee and early voting; and in the Sequoia Advantage—an electronic push-button voting machine --used on Election Day: no-vote-for-president for all but the Republican party; a difficult-to-change incorrect presidential vote; an inadvertent canceling of straight party votes when voting outside that party, or an undetected or uncorrected Bush default. The under-vote total alone, 1117, amounts to 19% of Kerry's loss in New Mexico. If the uncounted provisional ballots were primarily cast by newly registered Democrats whose voter registration forms were unprocessed or destroyed, then much of the 2,640 votes (under-vote + uncounted provisional ballots) amounts to 44% of Kerry's 5,988 vote loss.

BIBLIOGRAPHY

Stewart, Warren. 2005. “Did We Bounce An Election?” www.votersunite.org/info/BounceAnElection.html and http://www.votersunite.org/info/newMexicophantomvotes.asp

Theisen, Ellen and Warren Stewart. 2004. “Summary Report on New Mexico State Elections Data.” www.USCountVotes.org

Liddle, Elizabeth, and Josh Mittledorf. 2005. “Analysis of Under-Votes in New Mexico’s 2004 Presidential Ballots.” www.USCountVotes.org

Plotner, Robert Glenn. 2005. “A Guide to irregularities in the 2004 New Mexico General Election.” www.USCountVotes.org

State of New Mexico, Office of New Mexico Secretary of State, Secretary of State, Rebecca Vigil-Giron, http://www/sos.state.nm.us/Election/cntyindx04.html

CREDITS

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Exhibit 1
Absentee Ballot Report

RESULTS WITH HAND TALLY — GENERAL ELECTION — REPORT-EL30 — PAGE 0027-01
NOVEMBER 2, 2004
SANTA FE COUNTY
RUN DATE:11/03/2004 04:48

0027 AV PRECINCT 027

	VOTES	PERCENT
BALLOTS CAST - TOTAL.	300	
STRAIGHT PARTY		
VOTE FOR 1		
DEMOCRATIC PARTY (DEM)	133	89.86
REPUBLICAN PARTY (REP)	12	8.11
GREEN PARTY (GRN)	2	1.35
CONSTITUTION PARTY (CON)	0	
LIBERTARIAN PARTY (LIB)	1	.68
Total	148	100.00
Over Votes	0	
Under Votes	134	
PRES OF THE US		
VOTE FOR 1		
KERRY AND EDWARDS (DEM)	275	91.67
BUSH AND CHENEY (REP)	24	8.00
COBB AND LAMARCHE (GRN)	0	
PEROUTKA AND BALDWIN (CON)	0	
BADNARIK AND CAMPAGNA (LIB)	1	.33
NADER AND CAMEJO	0	
Total	300	100.00
Over Votes	0	
Under Votes	0	
US REP DIST 3		
VOTE FOR 1		
TOM UDALL (DEM)	275	92.28
GREGORY M. TUCKER (REP)	23	7.72
Total	298	100.00
Over Votes	0	
Under Votes	2	
JUST OF SUP CRT		
VOTE FOR 1		
EDWARD L. CHAVEZ (DEM)	262	90.66
NED S. FULLER (REP)	27	9.34
Total	289	100.00
Over Votes	0	
Under Votes	11	

Exhibit 2
Early Voting Ballot Report

TUE., NOVEMBER 2, 2004 3:17:54 PM

BALLOT REPORT

MemoryPack serial number is 40,323,005
Insight serial number is 501,352
Protective counter number is 20,040

Precinct 0067

- COUNTED	043	
- NOT COUNTED	000	
= TOTAL BALLOTS CAST	==>	043
- FULLY COUNTED	043	
- COUNTED WITH WRITE-INS	000	
= TOTAL BALLOTS COUNTED	==>	043
- REAR BIN	043	
= TOTAL BALLOTS CAST	==>	043
- REGULAR	043	
= TOTAL BALLOTS CAST	==>	043

TUE., NOVEMBER 2, 2004 3:17:56 PM

VOTE TOTALS REPORT

AV PRECINCT 067

GENERAL ELECTION
NOVEMBER 2, 2004
SANTA FE COUNTY

BALLOTS COUNTED

- TOTAL	043

STRAIGHT PARTY
VOTE FOR 1

DEM - DEMOCRATIC PARTY	018
REP - REPUBLICAN PARTY	003
GRN - GREEN PARTY	001
CON - CONSTITUTION PARTY	000
LIB - LIBERTARIAN PARTY	000
OVERVOTES	000
UNDERVOTES	021

PRES OF THE US
VOTE FOR 1

DEM - KERRY AND EDWARDS	032
REP - BUSH AND CHENEY	011
GRN - COBB AND LAMARCHE	000
CON - PEROUTKA AND BALDWIN	000
LIB - BADNARIK AND CAMPAGNA	000
NON - NADER AND CAMEJO	000
OVERVOTES	000
UNDERVOTES	000

US REP DIST 3
VOTE FOR 1

DEM - TOM UDALL	038
REP - GREGORY M. TUCKER	005
OVERVOTES	000
UNDERVOTES	000

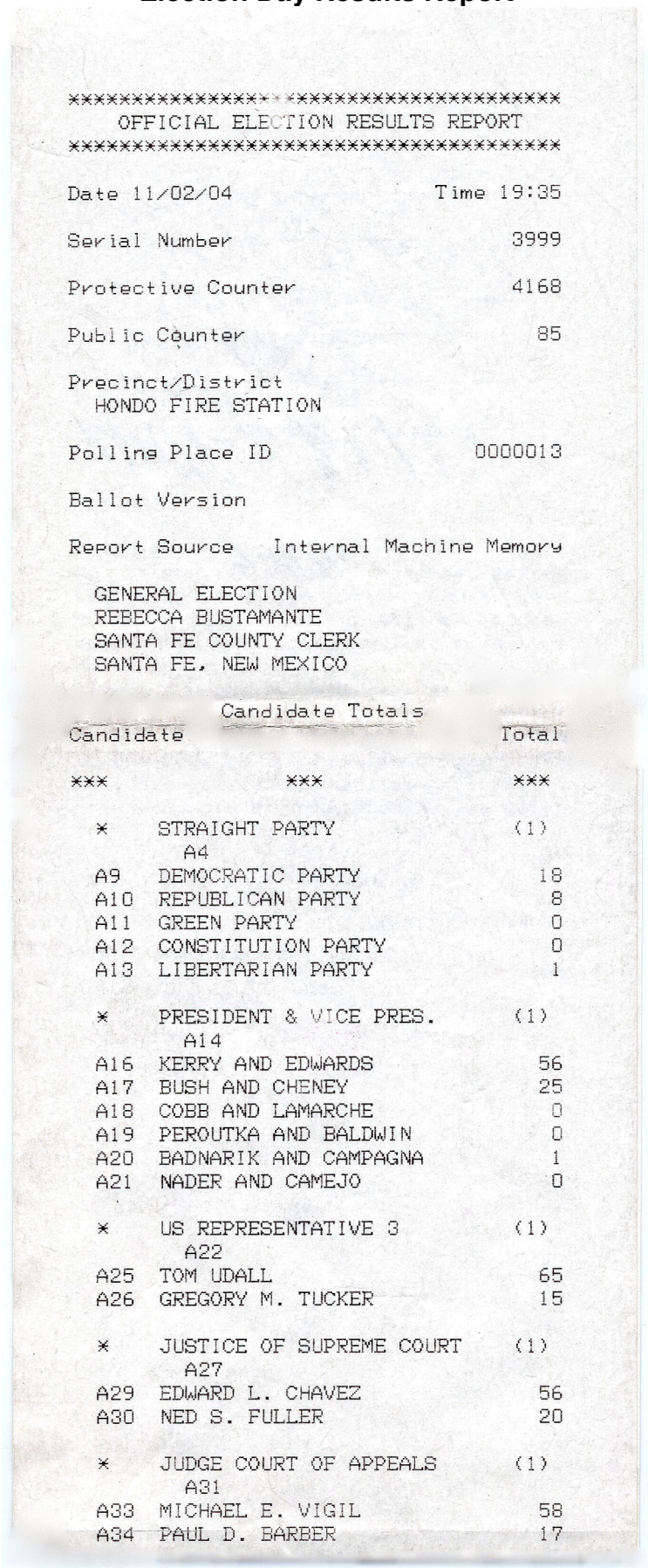
JUST OF SUP CRT
VOTE FOR 1

DEM - EDWARD L. CHAVEZ	032
REP - NED S. FULLER	009
OVERVOTES	000
UNDERVOTES	002

JDG OF CRT APP
VOTE FOR 1

DEM - MICHAEL E. VIGIL	036
REP - PAUL D. BARBER	005
OVERVOTES	000
UNDERVOTES	002

Exhibit 3
Election Day Results Report



****
OFFICIAL ELECTION RESULTS REPORT
****

Date 11/02/04 Time 19:35

Serial Number 3999

Protective Counter 4168

Public Counter 85

Precinct/District
HONDO FIRE STATION

Polling Place ID 0000013

Ballot Version

Report Source Internal Machine Memory

GENERAL ELECTION
REBECCA BUSTAMANTE
SANTA FE COUNTY CLERK
SANTA FE, NEW MEXICO

Candidate Totals

Candidate		Total
***	***	***
*	STRAIGHT PARTY	(1)
A4		
A9	DEMOCRATIC PARTY	18
A10	REPUBLICAN PARTY	8
A11	GREEN PARTY	0
A12	CONSTITUTION PARTY	0
A13	LIBERTARIAN PARTY	1
*	PRESIDENT & VICE PRES.	(1)
A14		
A16	KERRY AND EDWARDS	56
A17	BUSH AND CHENEY	25
A18	COBB AND LAMARCHE	0
A19	PEROUTKA AND BALDWIN	0
A20	BADNARIK AND CAMPAGNA	1
A21	NADER AND CAMEJO	0
*	US REPRESENTATIVE 3	(1)
A22		
A25	TOM UDALL	65
A26	GREGORY M. TUCKER	15
*	JUSTICE OF SUPREME COURT	(1)
A27		
A29	EDWARD L. CHAVEZ	56
A30	NED S. FULLER	20
*	JUDGE COURT OF APPEALS	(1)
A31		
A33	MICHAEL E. VIGIL	58
A34	PAUL D. BARBER	17

Appendix A
Error Messages on Sequoia Optech Insight Scanners Used in Early Voting

Santa Fe Clerks Office

Error reading ballot: stop bar detect: 2, 3, 2, 4, 1, 1,	total: 13
Error reading ballot: orientation: 8, 5, 1, 1, 1, 1, 1, 4, 4, 3,	total: 29
Over-voted office: 32, 34, 25, 20, 26, 29, 30, 37, 23, 19, 16,	total: 291
Ballot security ID header does not match: 5, 3,	total: 8
Top read head failed to respond: 2, 1,	total: 3
Both read heads failed to respond: 1, 1,	total: 2
Ballot jammed; ballot not processed: 1,1, 1, 1, 3, 1, 2, 1,	total: 11
Un-voted blank ballot: 5, 2, 3, 8, 2,	total: 20
Wrong number of arrows: 6, 2, 2,	total: 10

Summary of totals: Mechanical – 58; over-vote — 291; ballot—38.

Santa Fe County Fair Building

Error reading ballot: stop bar detect: 1, 2, 1, 2, 1,	total: 7
Error reading ballot: orientation: 4, 2, 1, 1, 2, 1,	total: 11
Over-voted office: 4, 14, 8, 2, 4, 3, 3, 4, 8, 6, 3,	total: 59
Both read heads failed to respond: 1,	total: 1
Ballot jammed; ballot not processed: 1,	total: 1
Un-voted blank ballot: 3, 1, 6	total: 10
Ballot stuck at rear; ballot processed: 1,	total: 1

Summary of totals: Mechanical – 21; over-vote — 59; ballot—10.

Santa Fe Poja.

Error reading ballot: stop bar detect: 2, 2, 3,	total: 7
Error reading ballot: orientation: 1, 2, 1,	total: 4
Over-voted office: 29, 18, 8, 5, 5, 5, 9, 12, 9, 21,	total: 121
Top read head failed to respond: 1, 1,	total: 2
Both read heads failed to respond: 1, 1, 3, 3, 1, 2, 2,	total: 13
Ballot jammed; ballot not processed: 1, 2, 5,	total: 8
Un-voted blank ballot: 1, 1,	total: 2
Wrong number of arrows: 1,	total: 1
Ballot stuck at rear; ballot processed: 1, 1, 4, 2,	total: 8

Summary of totals: Mechanical – 42; over-vote—121; ballot—3.

Totals for Early Voting Sites

Error reading ballot: stop bar detect:	total: 13, 7, 7 = **27**
Error reading ballot: orientation:	total: 29, 11, 4 = **44**
Over-voted office:	total: 291, 59, 121 = **471**
Ballot security ID header does not match:	total: = **8**
Top read head failed to respond:	total: 3, 2 = **5**
Both read heads failed to respond:	total: 2, 1, 13 = **16**
Ballot jammed; ballot not processed:	total: 11, 1, 8 = **20**
Un-voted blank ballot:	total: 20, 10, 2 = **32**
Wrong number of arrows:	total: 10, 1 = **11**
Ballot stuck at rear; ballot processed:	total: 1, 8 = **9**

Summary of totals for the three locations:

Mechanically caused: orientation errors – **121**.

Voter created: over-vote — **471**.

Ballot related: un-voted blank ballots — **51**.