Overview:
In a time when elections are decided by small margins and when the integrity of the electoral process is often questioned, avoidable voter disqualification is not acceptable. Quantitative studies in Cuyahoga County of the 2004 general election, summarized here, help to define some of the sources of disqualification. Taken in conjunction with other reported data, these studies lead to conservative estimates of votes that were avoidably lost or put at risk. Statewide extrapolation indicates that about 42,500 votes may have been lost and 30,000 put at risk – that is, over 1% of votes in a Presidential election that was decided by about a 2% margin. We believe that almost all these errors (on the part of voters, Board of Elections, or voter registration groups) were unintentional. Several reforms could greatly reduce these flaws in the future. Results similar to those reported here would be expected in many urbanized counties in the United States.

Summary of key findings:
(Non-technical summary given in underlined statements)
- In 2004, the registration/change of address applications of large numbers of voters in Cuyahoga County are projected to have been lost or put at risk through errors on the part of voters or the Board of Elections. Based on the findings of our studies of both Board of Elections (BOE) and voter entry errors in about 9,600 applications for registration or change of address, we project that nearly 7,000 Cuyahoga County voters were probably disqualified and about 12,500 voters were put at varying degrees of risk of disqualification.
• Large numbers of applications arrived after the deadline. The applications of another 6,000 voters were lost because the applications were handed in after the October 4 deadline.

• The BOE list of disqualified applications was even larger than our projections. About 15,000 names (not including minor special categories) were on the BOE list of disqualified or “at risk” voters. This number is greater than the projections of our studies on BOE or voter error, possibly because our volunteers exercised careful oversight of the voters we registered. About half of BOE categories of faulty application were totally disqualifying unless corrected before the election, and the other half potentially so unless corrected at the time of voting.

• Over 900 provisional ballots may have been wrongfully rejected because of database problems alone. Between 624 and 938 rejected provisional ballots, mostly classified as “not registered”, were apparently mistakenly purged from the registration lists, or involved other clerical errors in searching or entering data. Since this error was detected by only one type of search, which did not detect other voters who reported similar errors, the true number of provisional ballots wrongfully rejected is likely to be higher.

• We estimate that 2 out of every 5 provisional ballots that were rejected should have been accepted as legitimate. If we combine incorrectly purged provisional votes, rejected votes rejected because of initial registration errors, provisional ballots lost through polling place misinformation and innocent errors filling out the provisional application, it appears that over 41% of rejected provisional ballots (or 14% of all provisional votes) may have been unnecessarily rejected.

• We estimate that simply changing residence exposes voters to a 6% chance of being disenfranchised. Youth, the poor, and minorities are disproportionately affected. In fact, with respect to just provisional ballots, we found a two-fold increase in rejection rate in predominantly African-American compared to predominantly Caucasian precincts. As noted in national studies, those Americans who move more frequently are more likely to be subject to registration errors (and also provisional ballot rejection). These include youth, those who rent rather than own homes, African Americans and Hispanics, and the poor. In Cuyahoga County, we estimate that each move brings about a 6% chance of disenfranchisement through registration error. The national data on groups that move more frequently is consistent with our findings of a nearly twofold rate of provisional ballot rejection in precincts with over 90% black populations compared to those that are 10% black or less. There is also a clear pattern of higher provisional ballot rejection rate in predominantly African American wards of the city of Cleveland.

• Avoidable errors and problems such as we studied amounted to over half the percent margin of victory in Ohio’s close 2004 Presidential election. “Ballpark” extrapolation of our results to big cities statewide lead to the conclusion that in 2004 about 1.3% (range 0.9 to 1.6%) of votes (42,500 lost, 30,000 at risk) could have been lost statewide in a Presidential election decided by a 2.1% difference of votes cast (and our numbers probably understate the problem).

• Election reforms -- itemized here only for illustration -- would reduce the disenfranchising errors discussed in this report. The Greater Cleveland Voter Coalition is developing recommendations which will be presented later.
REPORT

1. Registration errors

In the course of registration drives in the spring of 2004, some recently registered voters complained that they had not received confirmation notices from the Cuyahoga County Board of Elections (BOE) many weeks later. In order to determine what had happened to their applications, the Greater Cleveland Voter Registration Coalition (GCVRC) carried out two studies (completed mid-September and mid-October) tracking the fates of individual new registration or change of address applications by checking copies of these applications against the BOE’s data base. The GCVRC had made a copy of every application submitted to the BOE, and beginning in spring of 2004, had submitted all new applications to the BOE once a week.

The summary results of the two studies combined (Table 1), based on the detail in Table 4 (attached at the end as an appendix), are expressed in terms of projected numbers of votes at risk. These are derived from the numbers actually found under each category of error (Table 4, as appendix) within our sample of about 9600 applications, followed by extrapolation to the 312,900 non-duplicate applications received by the BOE in 2004. For the combined projected numbers the uncertainty is about 20% -- i.e. the numbers could be up to 20% higher or lower than those given.

**BOE errors**: We project (Table 1) that the BOE totally failed to enter 2677 submitted new registrations and made serious errors (e.g. omitting voter’s date of birth) in entering another 1143 projected applications, for a total of 3,820 votes disqualified or at high risk of disqualification. Other types of entry errors, with low to possibly high risk of disqualification (numbering 8,131 + 4,114, Table 1) amounted to another 12,245 projected votes. About 40% of these 12,245 were address updates never entered, so that such voters would not receive information from the Board, might be purged for not having voted in 2 general elections, and would have to vote provisionally, with a 14% risk of rejection (see section 2, below). Errors in transcribing the voter’s name (especially last name) could lead to lack of successful BOE confirmation of registration by mail, erroneous BOE information to voters that they were not registered (unintentionally discouraging them from voting), or poll workers not readily finding voters on the rolls, and requiring vote by provisional ballot. The availability of provisional ballots undoubtedly “rescued” many registered voters with address entry errors, but in turn subjected them to greater risk of rejection (see below) than voters who used regular ballots.

Some problems of erroneous BOE or voter entries after Sept. 1, 2005 may also be attributed to failings of the DIMS Voter Registration system now in use by the BOE, according to a recent report1.

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1 [htProblem://ohiovigilance.org/Counties/Cuyahoga/Analysis/CuyProblemDIMS.htm](htProblem://ohiovigilance.org/Counties/Cuyahoga/Analysis/CuyProblemDIMS.htm)
Table 1. [Projected] or actual potential votes put at risk* through registration errors, fall 2004, Cuyahoga County, Ohio

<table>
<thead>
<tr>
<th>Type of Error</th>
<th>Number of applications likely to be disqualified</th>
<th>Number of applications at higher risk of loss</th>
<th>Number of applications at low to high risk of disqualification</th>
<th>Source of information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apparent Board Error</td>
<td>[2677] #1</td>
<td>[1143] #5 + #6</td>
<td>[12,245] #2 + #4 + #3</td>
<td>Table 4 (appendix)</td>
</tr>
<tr>
<td>Apparent Voter Error</td>
<td>[2938] #7 + #9 + #10</td>
<td></td>
<td>[392] #8</td>
<td>Table 4</td>
</tr>
<tr>
<td>Applications missed deadline date</td>
<td>~6,000</td>
<td></td>
<td></td>
<td>BOE</td>
</tr>
<tr>
<td>Subtotal: Potential votes affected</td>
<td>11,615</td>
<td>1,143</td>
<td>12,637</td>
<td></td>
</tr>
<tr>
<td>BOE List of Completely or partly Disqualified Voters**</td>
<td>10,971</td>
<td></td>
<td>3645</td>
<td>BOE</td>
</tr>
</tbody>
</table>

*Since turnout on election day was about 65%, actual votes lost from disqualified or compromised registrations would be 65% of the numbers given. The term “application” includes both new registrations and change of address applications, which many registrants treated identically (not specifying their former address). #1,#2, etc. below projected numbers (in brackets) refer to items as numbered in Table 4, from which the projected numbers are derived.

**Overlaps some of the data of Apparent Voter and BOE errors in rows 1 and 2

Voter errors: Voters failed to enter vital information or gave addresses deemed not to exist for a projected total of 2,938 disqualified registrations. Other voter errors put an additional 392 projected registrations at low to high risk. The combination of these serious 2,938 voter errors and the 3,820 serious BOE errors mentioned above amounts to 6,758 or nearly 7,000 disqualified voter applications.

Late applications (combination of Voter and Registration Group errors): According to Michael Vu, Director of the Cuyahoga County BOE, about 6,000 applications were handed in to the BOE after the Oct. 4 application deadline, and were thus disqualified. About 2500 were due to errors made by one registration group, and the remainder were a mixture of errors made by voters, Bureau of Motor Vehicles, and unspecified other sources.

*Based on studies of both BOE and voter entry errors in about 9,600 applications for registration or change of address, we project that nearly 7,000 Cuyahoga County voters were probably disqualified and about 12,500 voters were put at varying degrees of risk.
of disqualification. The applications of another 6,000 voters were lost because the applications were handed in after the deadline.

2. BOE lists of disqualified applications.

The BOE published a list of 15,253 “fatal pending” or faulty applications, as updated Dec. 1, 2004 (Information from3). Two of the largest categories -- invalid address (6,203) and missing signature (4,768) -- totally disqualify the voter. The names of voters in the next two largest categories -- missing important information (1,987) or birth date (1,658) -- are flagged on the polling books, and requested when the voter signs in, in which case the vote is accepted. Where the address is invalid, the Board takes no further measures to notify the voter, but in the other 3 categories, it sends a non-forwardable notification and asks the voter to supply the missing item. We were told by a BOE staff member that only about 20% of those notified actually supply the missing information by mail, although many with missing birth date or incomplete information, may do so at the polling place (No data available on this). Other smaller categories on the BOE “fatal pending” list, such as being under age or not being a citizen, are legitimately invalidating or very small.

We can attempt to relate the numbers of voters on this “fatal pending” list to those in the GCVRC studies described above. We exclude applications which were apparently submitted but never entered (including change of address) or had only errors in transcribing the name of the voter. Neither of these categories of error would cause the voter to appear on the “fatal pending” list. After this exclusion, the GCVRC study predicts that about 6,000-8,000 faulty applications4 would appear in the 4 major categories on the BOE’s “fatal pending” list: the actual number is 14,616. We suspect that part of the difference is due to the fact that the projected numbers in Table 4 derive from applications overseen by highly motivated GCVRC volunteer registrars, who were trained to spot and prevent errors of omission.

About 15,000 names (not including minor special categories) were on the BOE list of disqualified or “at risk” voters. This number is greater than the projections of our studies on BOE or voter error, possibly because of the careful oversight of our volunteers in registering voters. About half of BOE categories of faulty application are totally disqualifying unless corrected before the election, and the other half potentially so unless corrected at the time of voting.

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2 From Table 1, probably disqualified, those “likely to be disqualified” or at “higher risk of disqualification” (2,677+1,143+2,938=6758; at “low to high risk” of disqualification (8,131 + 4,114 + 392 = 12,637)

3[http://ohiovigilance.org/Analysis/CountyCuyahoga.html](http://ohiovigilance.org/Analysis/CountyCuyahoga.html), then click on link to “Fatal Pending” voters…

4 Those given explanatory code letters E or F in Table 4. Mis-entry of addresses, if trivial, might not put the voter on the “fatal pending list”, so we give a possible range of errors (6,000-8,000) rather than one number.
3. Provisional ballots

8,559 of 25,309 provisional ballots cast in Cuyahoga County were rejected\(^5\), because of BOE findings that the voter was not registered (5760), had not voted in the correct precinct (2164) or (for 618, most of the remainder) had not been on the polling books and had made a disqualifying error in filling out the provisional ballot application (main categories: missing information, no signature, bad address).

We asked whether some of those rejected provisional ballots might have been erroneously purged from the BOE’s list of duly registered voters. We used matching of names and date of birth\(^6\), using the BOE’s list of provisional voters rejected for all reasons and the BOE-supplied list of all registered voters as of Aug. 17, 2004 or as of Oct. 22, 2004:

**Group 1.** Legitimate voters who had been on the BOE rolls of registered voters as of Aug. 17, 2004, but were absent from the rolls on Oct. 22 (Group 1 total of 286 found in this category: see Table 2 for breakdown). Clearly, the only major reasons for purging, death or incarceration, did not apply to these voters who cast provisional ballots. Special circumstances may apply to a few, but in the absence of feedback from the BOE, we conclude that most if not all of the 286 were incorrectly purged from the rolls.

**Group 2.** Legitimate voters who were on the BOE rolls of registered voters as of Oct. 22, 2004 but were nonetheless found on the list of rejected provisional ballots (652 found in this category, not including ballots rejected for being cast in the “wrong precinct – see Table 2). We presume that these provisional ballots were required because poll workers had not found the voter’s name on the rolls on election day. Of these individuals, 338 provisional ballots were rejected as “not registered” even though the voters were on the rolls as of Oct. 22, 2004. In these cases, we cannot distinguish between voters being purged (more likely) or failures of the clerks checking the provisional ballots to find listed voters (less likely). These 338 lost votes added to the 286 in Group 1 equals 624 apparently purged voter records.

Another 314 provisional ballots in Group 2 were rejected because of “no signature”, “bad address” or “missing information”, raising the question of why these voters were forced to vote provisionally in the first place if they were registered as of Oct. 22. Presumably they were not found on the rolls at the polling place, and later, because of voter errors in filling out the provisional ballot forms at the polls, clerks at the BOE may have disqualified these provisional ballots without checking whether they were registered.

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\(^5\) Information from Ohio Secretary of State, officially certified list of provisional ballots, for overall accept and reject values; information from Cuyahoga BOE for subcategories (with very slightly different totals than state certified numbers).

\(^6\) Computer searches carried out by Dan Kozminski, volunteer, Greater Cleveland Voter Registration Coalition.
Table 2. Tally of apparent errors in database of registered voters whose provisional ballots were rejected, voting date Nov. 2, 2004

<table>
<thead>
<tr>
<th>Reason for rejection of provisional ballot</th>
<th>Not Registered</th>
<th>No Signature</th>
<th>Missing Info</th>
<th>Bad Address</th>
<th>Wrong Precinct</th>
<th>Group Total</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Address Change</td>
<td>Same Address</td>
<td>Address Change</td>
<td>Same Address</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Group 1:</strong> On db in Aug., off in October</td>
<td>111</td>
<td>153</td>
<td>19</td>
<td></td>
<td>3</td>
<td><strong>286</strong></td>
</tr>
<tr>
<td><strong>Group 2:</strong> On db in Oct. but made to vote provisional ballot on Nov. 2</td>
<td>101</td>
<td>237</td>
<td>164</td>
<td>81</td>
<td>13, 56</td>
<td><strong>652</strong></td>
</tr>
</tbody>
</table>

More complicated possibilities for some of these findings do exist, but in sum:

1) It is likely that at least the 286 in Group 1 and 338 rejected as “not registered” in Group 2 had been purged, for a total of 624;
2) The remainder (314) rejected in Group 2 for the other reasons given above, may or may not have been purged. Therefore between 624 and 938 voters may have been purged;
3) The BOE was unwilling to investigate these data before certifying the election results, when the problem was first raised and the first detailed data was presented at BOE meetings of Nov. 22 and Nov. 29, 2004; and
4) Cuyahoga BOE Director Vu reportedly said “he would review the lists Robbins provided and wished he had had them sooner” (Plain Dealer, Nov. 30, 2004), but in fact, has never responded (as of this writing) since he was sent the complete files described above within a week of this news report. Until the BOE analyzes our results, we will not know exactly how many of these presumed purges actually occurred, and how many were due to other circumstances or errors on the part of either voters or the BOE.

We know that the number of purged and rejected provisional voters (624 to 938) is probably an underestimate. From a variety of non-BOE sources, we learned of 13 voters who insisted that they had voted repeatedly or had confirmed their registration with the BOE and yet were told they were not on rolls, were forced to vote provisional ballots on Nov. 2 and were rejected. Of these 13, the search for purged voters in our matching studies picked up only 3. Therefore, we believe that using other types of search (e.g. voters incorrectly purged before Aug. 17, use of variations in name or address as well as
date of birth, etc.), the total number of erroneously rejected provisional ballots would be greater than the number we found with one particular search protocol. According to another report, errors in the DIMS data base could also contribute to cases where provisional voters had been purged, rendered unfindable, or otherwise rejected.

How many provisional ballots voters may have been rejected because the BOE failed to enter registration applications or entered them incorrectly (see item 1)? We could not use the registrations analyzed in September, 2004, because we had taken vigorous measures to get these registration failures or errors corrected before the registration deadline of Oct. 4. However, using data from the other study subgroup of about 7400 applications submitted to the BOE before the deadline but analyzed after the deadline, we found 30 individuals whose provisional ballots had been rejected, mostly listed as “not being registered” but some as “wrong precinct”. Since the BOE received 312,900 applications in 2004, we project that with a voter turnout of 65%, about 825 rejected provisional ballots may have been rejected directly or indirectly because of BOE errors.

What is the risk of any legitimate voter being forced to vote a provisional ballot and being disenfranchised? From the above, up to 938 such ballots may have been rejected due to purging errors and 825 due to BOE registration entry errors (unknown to the voter). Another 540 voters made errors of omission (e.g. missing signature, incomplete information) on the provisional ballot form that alert poll workers could have prevented. Finally, another investigative group found that 1201 provisional ballots were rejected for being cast in the “wrong precinct” when the voters were actually at the correct polling place. These voters received incorrect information from the poll workers or were not properly directed by them to the proper precinct table (Additional voters arrived at the wrong polling place because of software errors in the poll place finder on the BOE web site, or because they failed to receive mailed polling place information because of address errors in their listing, but we don’t have any numbers on this type of error). In all, these 4 sources of known error add up to 3504 or 41% of rejected provisional ballots, or 14% of all provisional ballots cast (accepted and rejected) in Cuyahoga County.

Between 624 and 938 rejected provisional ballots, mostly classified as “not registered”, may have been mistakenly purged from the registration lists. The true number incorrectly rejected for this reason is likely to be higher.

If we combine incorrectly purged provisional votes, projected votes rejected because of initial registration errors, provisional ballots lost through polling place misinformation and innocent provisional application errors, it appears that over 41% of rejected provisional ballots (or 14% of all provisional votes) may have been unnecessarily rejected.

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7 http://ohiovigilance.org/Counties/Cuyahoga/Analysis/CuyProblemDIMS.htm
8 (312,900/7400) x 0.65 x 30 = 825
9 http://ohiovigilance.org/Counties/Cuyahoga/Analysis/CuyWrongPrecinctSummary.pdf
10 personal communication from Cheryl Kufta, a software expert who personally encountered and analyzed these problems. Also, see: http://ohiovigilance.org/Counties/Cuyahoga/Analysis/CuyProblemDIMS.htm
4. Population sectors at greater risk for disenfranchisement

Americans who move more frequently are more often subject to the kind of registration errors described in this report because they need to re-register to avoid voting provisional ballot\(^{11}\). Those disproportionately affected include youth, home-renters (vs. home owners), the poor, African-Americans and Hispanics (Table 2). Fortunately, the provisional ballot mechanism partly prevents disenfranchisement due to lack of re-registration, BOE address entry errors (in some cases), or BOE failure to enter address updates.

Table 3.
Comparison of residential mobility in different pairs of American subpopulations

<table>
<thead>
<tr>
<th>Comparison Of pairs</th>
<th>Age</th>
<th>%</th>
<th>Housing</th>
<th>%</th>
<th>Race</th>
<th>%</th>
<th>Household income</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Over 55</td>
<td>20-29</td>
<td>28-30%</td>
<td>Rent</td>
<td>31</td>
<td>Black or Hispanic</td>
<td>18</td>
<td>&lt;$25,000</td>
<td>19</td>
</tr>
<tr>
<td></td>
<td>3.5-6%</td>
<td>Own</td>
<td>7</td>
<td>White</td>
<td>12</td>
<td>&gt;=$100,000</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

What is the risk in Cuyahoga County of being disenfranchised by registration errors with each new move and new registration? From Table 4, the sum of all risks of un-entered or erroneously entered registrations is about 6%. Thus, movers (youth, low income, minorities) are at greater risk of disenfranchisement.

We investigated the consequence of this disproportionate effect of registration error, specifically with regard to race, in two ways:

1. Precinct by precinct comparison of the provisional ballot rejection as a percent of all votes cast in each Cuyahoga County precinct as a function of black/white percentages in the precinct population. Selecting precincts where there were at least 100 persons 18 and older, we found that the average rejection rate (as % of all votes cast) was 1.8% in precincts with 90% or more black residents, and 1.1% in precincts with less than 10% black residents. This result was highly statistically significant.

2. Evaluation of percentage of provisional ballots rejected as percent of provisional ballots cast in the 21 wards of Cleveland, graphed below by % black population.


It is obvious by eye (and valid statistically) that wards with over 80% black populations had higher rejection rates (as % of provisional ballots cast) than those with 50% or less black populations. In one predominantly black ward, the rejection rate reached 51%.

As noted in national studies, those Americans who move more frequently are more likely to be subject to registration errors (and also provisional ballot rejection). These include youth, those who rent rather than own homes, African Americans and Hispanics, and the poor. In Cuyahoga County, we estimate that each move brings about a 6% chance of disenfranchisement through registration error. The national data on groups that move more frequently is consistent with our findings of a nearly twofold rate of provisional ballot rejection in precincts with over 90% black populations compared to those that are 10% black or less. There is also a clear pattern of higher provisional ballot rejection rate in predominantly African American wards of the city of Cleveland.

5. “Ballpark” estimate of registration/provisional ballot errors on a statewide basis

By what factor should the errors in Cuyahoga County be multiplied in order to estimate their occurrence statewide in 2004? The majority of errors appeared to be concentrated in the most urbanized areas of the County where the most intense registration drives occurred. Therefore, one approach to extrapolation is to find the combined populations of the 10 largest Ohio cities (1.72 million, assuming that about half of Columbus is urbanized) and to divide that by the population of Cleveland (478,000) to yield a factor of
about 3.6. Using this factor and data cited or derived above, these cities together would have experienced 24,300 disqualifications due to BOE or voter error\textsuperscript{13}, 45,500 registrations or change of address at varying degree of risk because of BOE or voter error\textsuperscript{14}, and up to 21,600 because of applications handed in after the deadline\textsuperscript{15}. In addition, about 12,500 provisional ballots may have been incorrectly rejected\textsuperscript{16}. With an average turnout of 65%, this amounts to a “ballpark” projection of about 31,000 final votes actually lost (0.65 x (24,300 + 21,600)), and 30,000 (0.65x46,500) at risk of loss, in addition to the 12,500 provisional ballots lost. Because of the assumptions involved, these numbers could easily be off by 20% in either direction. However, the key point is that the sum of these avoidably lost votes or votes put at risk add up to 72,500 votes or about 1.3% (range 0.9-1.6%) of votes cast in a (2004) Presidential election decided by a difference of 2.1% of Ohio’s votes\textsuperscript{17}. Therefore, despite the range of uncertainty, there is no doubt that these sources of error must be addressed by election reforms.

Are these estimates “conservative”, i.e. likely to be understatements of the magnitude of the problem? We believe they are, because:

- we derived our numbers of voter and Board just from applications submitted by the Greater Cleveland Voter Registration Coalition, whereas twice as many voters were on the BOE’s “fatal pending list” of voters disqualified for wrong or missing information;
- we did not include estimates of voters who did not even attempt to vote a provisional ballot because they called the Board of Elections after the registration deadline only to find they were apparently not listed (either because of registration or data base errors that were not the fault of the voter); and
- we did not include voters who might have voted provisionally but were directed by poll workers or the BOE’s “precinct finder” to the wrong precinct, and did not have the time or energy to correct these errors.

“Ballpark” extrapolation to big cities statewide lead to the conclusion that in 2004 about 1.3% (range 0.9 to 1.6%) of votes (42,500 lost, 30,000 at risk) could have been lost statewide in a Presidential election decided by a 2.1% difference of votes cast (and our numbers probably understate the problem).

\textsuperscript{13} Using the number of high risk errors in application (Table 1, columns 2\&3) times the 3.6 factor: 3.6 x (2,677+2,983+1,143) = 24,328  
\textsuperscript{14} Multiplying number of applications at low to high risk in Table 1 times 3.6 (3.6 x 12,637 = 45,493)  
\textsuperscript{15} 6,000 applications in Cuyahoga County which missed the deadline for registration x 3.6 = 21,600  
\textsuperscript{16} 3504 provisional ballots possibly incorrectly rejected in Cuyahoga County times 3.6 = 12,600 statewide.  
\textsuperscript{17} According to the “Amended Official Results” at http://www.sos.state.oh.us/sos/results/index.html, where it is reported that there were 5,627,903 votes cast, of which 50.81% were for Bush, 48.71% for Kerry.
6. Some of the election reforms which would reduce the disenfranchising errors discussed in this report (P=problem; R=reform): Incomplete List supplied only for Illustration.

The following reforms are sketched rather than detailed, and do not include all good options. Rather, they are intended to illustrate that for each problem, there are workable solutions if there is the will at the appropriate level of agency or government. The Greater Cleveland Voter Coalition is developing a set of reforms which will be presented at a later time.

A. Registration errors

PROBLEM: New registration or change of address submitted to BOE but never entered.
    REFORM: BOE provides some form of receipt on receiving an application from voter or registration group (see also next item), so that timely submission can be proven.

PROBLEM: Voter or BOE error in filling out or transcribing application.
    REFORM. BOE checks all registrations on disqualified (“fatal pending”) list against original written application to correct clerical errors (BOE already notifies voters with missing information or birth date to supply same, but this unfortunately is not sufficient).
    REFORM. If BOE notification to voter of error or omission is returned, it should be resent as a forwardable letter.
    REFORM: At a point in time sufficiently before the registration deadline, BOE supplies all fully registered voters with prominent notification that they are registered (e.g. repeat large-size flyer to all registered voters, searchable website list of all registered voters, available on internet, public libraries, etc.), including address for checking plus intensive public outreach to everyone to check their registration status, correct faulty registrations or re-register if necessary before the deadline.
    REFORM: Major overhaul of DIMS data base so that it warns of input errors as they occur

PROBLEM. Applications missing important information (e.g. signature, birthdate, Social Security or Driver’s License number) in submissions by registration organizations or individuals.
    REFORM. The Board should check periodically and randomly for the number of such omissions, and warn the offending registration organization that unless the problem is immediately corrected (to a certain percent of error), further applications will not be accepted.
    REFORM. More graphic and literacy-sensitive flyers, explaining and warning against potential voter errors and omissions, should accompany all blank registration forms distributed publicly.

PROBLEM: Applications handed in huge batches or late by registration or other organizations.
    REFORM: BOE requires that all applications be submitted within 5 working days of signature date, with penalty of losing future right of registration for organizations that fail

18 http://ohiovigilance.org/Counties/Cuyahoga/Analysis/CuyProblemDIMS.htm
to do so. All organizations that routinely submit applications (including BMV) should receive special administrative reminders of the deadline for receipt.

B. Provisional ballot problems (other than Registration problems as above)

PROBLEM: BOE inadvertently purges voters from list.
REFORM: BOE keeps list of registered voters as of each month, and routinely checks that those that are dropped from the list in subsequent months are done so for legitimate reasons.

PROBLEM: Provisional Ballots rejected because voter is in wrong precinct.
REFORM: At the very least, accept ballots cast in the correct polling place (even if wrong precinct) as prima facie evidence of poll worker mistake;
REFORM: Change state interpretation of HAVA so that voter can cast provisional ballot anywhere in the correct county (with loss of vote only on precinct-specific offices or issues).

PROBLEM: Provisional Ballot rejected as “not registered” because original voter application was disqualified
REFORM: Check all such individuals against a copy or scan of the original voter application, to be sure the voter was not disqualified because of clerical error or omission in the original entry on to the data base

PROBLEM: Provisional Ballot rejected because of voter omission (on the provisional application form) of signature, date of birth, or other required identifying information.
REFORM: Accompany provisional application form with graphic, low-literacy sensitive flyer explaining most common errors.
REFORM: Make poll workers responsible for voter omissions (e.g. discharge worker if over a certain number of provisional ballots OK’d by this worker contains omissions)

C. Disproportionate risk of disenfranchisement in certain subpopulations

REFORM: Reforms as above, plus proportionately more intensive public outreach directed at those subpopulations with higher percentage of those who move (Table 2) – e.g. at youth, minorities and the poor

D. Election Day Registration would reduce disenfranchisement due to most errors reported here:

REFORM: Election Day Registration, as practiced successfully in 6 states, would eliminate most of the errors discussed in this report much more effectively than many of the reforms suggested above. Furthermore, according to national studies, election day registration also significantly increases voter turnout. Any added administrative costs of election day registration should be balanced against the costs of correcting the errors reported here, as well as the reduction in avoidable disenfranchisement.
Table 4: Combined results of two studies\textsuperscript{i,ii} of about 9600 registration/change of address applications submitted to the Cuyahoga County Board of Elections by the Greater Cleveland Voter Registration Coalition prior to Oct. 4, 2004

<table>
<thead>
<tr>
<th>Category of Error</th>
<th>Number of applications affected in our studies</th>
<th>Percent of submitted applications in our studies</th>
<th>Projected number of applications affected countywide\textsuperscript{iii}</th>
<th>Item # (see text)</th>
<th>Likelihood of voter being disenfranchised (letters refer to explanatory code below table)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Apparent Board Errors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>New registrations never entered</td>
<td>82</td>
<td>0.9</td>
<td>2677</td>
<td>1</td>
<td>100%</td>
</tr>
<tr>
<td>Address updates not entered</td>
<td>153</td>
<td>1.6</td>
<td>4996</td>
<td>2</td>
<td>A, C Low to high</td>
</tr>
<tr>
<td>Mistakes in entering:</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>name</td>
<td>126</td>
<td>1.3</td>
<td>4114</td>
<td>3</td>
<td>B, C Low to high</td>
</tr>
<tr>
<td>address</td>
<td>96</td>
<td>1.0</td>
<td>3135</td>
<td>4</td>
<td>B, D, E Low to high</td>
</tr>
<tr>
<td>date of birth</td>
<td>21</td>
<td>0.2</td>
<td>686</td>
<td>5</td>
<td>E (many disqualified)</td>
</tr>
<tr>
<td>multiple items</td>
<td>14</td>
<td>0.1</td>
<td>457</td>
<td>6</td>
<td>B, E (many disqualified)</td>
</tr>
<tr>
<td>Subtotal</td>
<td>492</td>
<td>16.035</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Apparent Voter Errors</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonexistent address</td>
<td>25</td>
<td>0.3</td>
<td>816</td>
<td>7</td>
<td>F 100%</td>
</tr>
<tr>
<td>Undeliverable at address given</td>
<td>12</td>
<td>0.1</td>
<td>392</td>
<td>8</td>
<td>B Low to high</td>
</tr>
<tr>
<td>Missing information</td>
<td>54</td>
<td>0.6</td>
<td>1763</td>
<td>9</td>
<td>B, E High, many disqualified</td>
</tr>
<tr>
<td>Other invalid information</td>
<td>11</td>
<td>0.1</td>
<td>359</td>
<td>10</td>
<td>E High, most disqualified</td>
</tr>
<tr>
<td>Totals</td>
<td>594</td>
<td>6.2</td>
<td>19,395</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A. Forced to vote provisional ballot with 14% risk of rejection (see text section 3);  
B. Possibly forced to vote provisional ballot, with 14% risk of rejection, or higher risk if faulty voter information on the data base prevents detection of registered status;  
C. Possibly purged from list of registered voters if voter had not voted in last 2 general elections and updated information was not entered in to prevent purging;
D. Disqualified if mistaken address does not exist
E. Possibly placed on “fatal pending” list
F. Definitely placed on “fatal pending” list
We wish to acknowledge the consistent helpfulness of the BOE staff in making available computers and in assisting volunteers in carrying out computer searches of the BOE’s database. The first study of 2183 non-duplicate applications was completed Sept. 17, 2004; the 2nd study of approximately 7400 additional applications was completed end of October for registrations as of Oct. 22, 2004. Results for each category are combined in the information presented, so that the percent is derived from numbers found in each category divided by 9583 (2183+7400). In the case of the September study, vigorous outreach to affected voters led to correction of many of these errors, but for the present purposes, the data are presented as originally found before correction. In the case of the October study, efforts were made to correct the registration errors but in most cases were too late. Numbers in some categories are slightly different from previous versions because of review, small numbers reclassified, or use of more subcategories.

Qualifications: Work done by volunteers on Board of Election computers, and some categories subject to interpretation. Most of these data were submitted to the Board of Elections for their review and correction, but no response was received. Copies of most of the applications used have been retained. Number of total applications studied in the second study, 7400, is an estimate based on previous day exact number. Low numbers in several study categories make projections to entire 2004 application list (see next note) very uncertain. The calculated 95% confidence interval for these data vary with the number of entries: for instance, the 95% confidence interval for the number of new registrations never entered (row 1) is about 18% so that the 95% confidence interval goes from 1700 to 3184. Entries with smaller numbers have much bigger uncertainties or larger confidence intervals; for this reason, smaller categories are pooled in the overall summary (Table 1) and especially in the text, so that confidence intervals for pooled categories is in this same 20% range. Surrounding events were somewhat different for the Sept and October studies (see note 1 above), with variations in different subcategories. Nonetheless, overall combined percentage of either Board or voter errors were similar, so results were pooled by category.

In order to extend our results to the entire universe of submitted applications, we need to calculate the total non-duplicate number received. The Director of the Cuyahoga County Board of Elections said that 360,000 registration/change of address applications were received in 2004 by the deadline. However, at an earlier time, when the number received was 344,245, the Director said there were 45,043 duplicates, or duplicates were 13% of the total. Thus if the latest total is 360,000, then 13% or 47,100 need to be subtracted as duplicates, so that the number of non-duplicate registrations received would be (360,000 – 47,100) or approximately 312,900. Therefore, we multiply the percentages of each type of error (in column labeled “percent of submitted applications” in Table 4) times 312,900 to find the “projected number of applications affected countywide".