THE VOTING SYSTEM IN ORANGE COUNTY

SUMMARY

Our present voting system in Orange County may benefit from modern electronic technology. The Grand Jury has determined that a review should be made of the punch card (Datavote) voting system used in elections by Orange County voters for the past 14 years. The Datavote system has served the county well during this period. However, in view of rapid technological advances in the field of computer-based voting systems, the present system seems to be expensive to use, outmoded, and possibly obsolete. Manufacturers of electronic voting systems claim that their devices are more efficient (more secure, accurate, faster and less costly) and less labor intensive than punch card systems. In theory, if Orange County adopted the use of electronic voting technology, the per-voter cost of running an election could be cut by 50% or more. This saving would be offset by buy-in costs of a new system. Electronic voting has been enthusiastically received in those areas where it has been used.

The Grand Jury recommends that the Registration and Elections Department evaluate available electronic voting options, and adopt electronic voting technology if it would offer the advantages of speed, accuracy, and per voter election costs that its proponents claim.

INTRODUCTION AND PURPOSE

The Election Panel of the State of California recently approved statewide use of several commercially available electronic voting systems. The new electronic voting systems apparently offer the advantages of speed, accuracy, security and lower per-voter operational cost than the present punch card system used in Orange County. The Grand Jury examined some of the available options to determine if Orange County voters and taxpayers would benefit from the adoption of electronic voting technology to replace the punch card system, Datavote.

METHODS

The Grand Jury met with the Office of the Registrar of Voters on several occasions and received detailed printed data on the results and costs of the primary and general elections of 1996 and 1998. Members of the Grand Jury traveled to Sacramento to attend a meeting of the Election Panel of the State of California to witness

demonstrations of electronic voting systems. A questionnaire was mailed to the Office of the Registrar of Voters in all counties (58) to determine how other counties conducted their elections and the per-voter costs of such elections. Approximately 50% of the counties surveyed returned useful information in response to the questionnaire.

BACKGROUND

PRESENT SYSTEM OPERATING COSTS

Beginning in 1982, the Office of the Registrar of Voters went through a process of evaluating, testing and negotiating the purchase of a new voting system for Orange County. A punch-card system called Datavote was selected and ultimately purchased in 1985. It has been used in Orange County elections since and will continue to be used until a better system is found to replace it. Investment in the Datavote system required the county to purchase 9,000 punch-card machines to be distributed to approximately 1,650 polling locations throughout the county. More than 1,250,000 punch cards (ballots) must be printed at a cost of over $600,000 for each election. In the past 14 years, the county has spent an average of $2.75 million for each general and primary election at an average cost per registered voter of $2.60. The cost per registered voter has steadily increased over the past four elections.

The average cost to Orange County for each registered voter is on the high end of costs incurred in other California counties with comparable populations ($2.60 *vs.* an average of $2.44). The cost per voter is based on the number of voters registered. This distorts the true costs involved. If one recalculates the cost for each voter who actually voted (721,094), the cost per vote in last year's November 1998 general election proved to be approximately $4.57. The 1998 primary election cost $2,933,036, but only 495,714 individuals voted bringing the cost per actual voter to $5.92. The cost of each vote escalates with light voter turnout. Everything must be prepared as if there might be a 100% turnout of registered voters with punch card systems. Thus punch card systems can be wasteful of resources in comparison with electronic voting systems that are not dependent upon printed matter. Orange County's voting system seems comparatively costly in view of the estimates by suppliers of electronic voting systems who claim that the cost per voter should be in the range of $1.00–$1.50.

Ten to sixteen percent of voters vote by absentee ballot (see Table 1 below). This will probably increase in the future as the State has made absentee voting easier. The cost of each absentee ballot will remain a fixed cost in all elections.

FIGURE 1- ABSENTEE BALLOT PERCENTAGES OF ELECTION TURNOUT

Election	Registered Voters	Voter Turnout	%Absentee
1996 Primary	1,175,000	510,000	12 %
1996 General	1,358,000	875,000	14 %
1998 Primary	1,275,000	496,000	10 %
1998 General	1,175,000	720,000	16 %

POTENTIAL ADVANTAGES OF ELECTRONIC VOTING SYSTEMS

While the Datavote system has worked well for Orange County over the years, it has several shortcomings in comparison to more modern voting systems that employ electronic digital technology. These shortcomings include cost per voter, time and speed of election, accuracy, and security.

There could be significant cost savings over the long term if the county decided to modernize its voting system. Vendors of electronic voting systems claim that the cost per registered voter can be reduced by 50% or more from the present system due to the inefficiencies of the punch-card paper ballot process. Labor, printing and transportation costs are high in the Datavote system because the number of ballots actually printed is based on the assumption that all registered voters will vote. This is an expensive assumption as the percentage of registered voters actually voting is less than 50%.

Time can be saved. The speed of tallying and reporting vote totals can be greatly accelerated using electronic voting. It takes at least eight hours for 95% of the final vote tally to be registered in the office of the county's Registrar of Voters. With electronic voting technology, 95% of the final vote count can be collected within 30–60 minutes after the polls are closed. The vote totals from each precinct can be sent automatically to the county's headquarters via modem transmission through existing telephone lines.

Electronic voting, furthermore, would offer an improvement in accuracy and security over the existing mechanical punch-card system. Punch cards can be bent, lost, mutilated and tampered with because they pass through several hands before they are inserted in a card reader. Votes recorded electronically will not be lost or tampered with because information is encrypted between the voting machines at the polling places and the County's Registration and Elections Department. Electronic voting machines have battery backup so that loss of power would not disrupt the voting process or data accumulated. The extremely remote possibility of failure of the telephone system, or any part of it, would have no deleterious impact on the accuracy of the vote since the data is recorded at the voting stations. Phone line outage would only delay reaching the final count, but the votes would not be lost.

VOTER ACCEPTANCE

On March 3, 1999, a city election was held using the first touch screen system in Piedmont, California, Alameda County. The Registrar of Voters was enthusiastic about the results. Out of 1500 voters, only one complaint was received when interviews were conducted by the Oakland *Tribune*, San Francisco *Chronicle*.

RECOUNTS

A further advantage of electronic voting technology is the speed, accuracy and efficiency of doing ballot recounts. Contested elections with punch-card systems can be tedious and costly to recount. Computer-based systems, on the other hand, with properly designed software that controls proper and complete data entry, can eliminate the need for recounts.

FOREIGN LANGUAGE

Foreign language poses no problems for electronic voting machines. They can be programmed for any language the voters prefer to use. This saves money for printing costs because a relatively few special-language ballots will need to be printed for absentee ballots.

CONCLUSIONS

The State of California statutes do not require the use of any particular technology in the voting process and therefore, counties are not statutorily precluded from using electronic technology. The State of California Election Panel has tested commercially available, electronic voting systems for accuracy, efficiency and security and approve several for use throughout California. The cost of these systems varies from vendor to vendor. Some will require an initial outlay that must be amortized over a period of years. Some companies will charge a fee to conduct the election at a cost they claim would be less than what the county currently spends. There are many options for leasing, lease/buying or buying. If the county contracts for an outside vendor to conduct a full fee-for-service election, purchasing of equipment and all related costs (maintenance and storage) would be eliminated. Transportation, labor and printing costs would be greatly reduced.

FINDINGS

Under *California Penal Code* §933 and §933.05, responses are required to the finding.

1. The Datavote system has worked well for Orange County over the years, but it has several shortcomings in comparison to more modern electronic voting systems. Modern electronic voting technology potentially offers advantages to the voters of Orange County in accuracy, efficiency and security in comparison to the Datavote system currently in use. The technology's vendors promise cost savings up to 50% on a per voter cost per election.

The **Board of Supervisors** is required to respond to the Finding.

RECOMMENDATIONS

Under *California Penal Code* §933 and §933.05, responses are required to the recommendation.

1. The Grand Jury recommends that the **Board of Supervisors** undertake an independent study concerning the desirability of using electronic voting in future elections in Orange County. The study should be conducted by a consulting firm or a blue ribbon panel of citizens.

The **Board of Supervisors** is required to respond to the Recommendation.

COMMENDATION

The Grand Jury wishes to commend the **Office of the Registrar of Voters** for the excellent job they are doing with existing voting technology, and for the cooperation and information made available by them.

APPENDIX

RESOURCES CONSULTED

Interim County Population Projections, April 1997. California State Department of Finance.

Public Meeting, State of California Secretary of State, Voting Systems Panel, held December 1, 1998, Secretary of State's Office, Sacramento, CA

Statement of All Votes Cast at the Direct General Election held March 16, 1996, in the County of Orange, State of California, Vol. I & II.

Statement of All Votes Cast at the Direct General Election held November 5, 1996, in the County of Orange, State of California, Vol. I & II.

Statement of All Votes Cast at the Direct Primary Election held June 2, 1998, in the County of Orange, State of California.

Statement of All Votes Cast at the Direct General Election held November 3, 1998, in the County of Orange, State of California, Vol. I & II.

Voting Systems and Procedures Panels, Office of the Secretary of State, (no date).

INTERVIEWS:

- ESS Election Systems and Software, Omaha, NE.
- Global Election Systems, McKinney, TX.
- Personnel from the Office of the Registrar of Voters of Orange County.
- Telephone interviews with election officers from Dallas, TX and Honolulu, HI.
- Elections Divisions analysts from the State of California, Sacramento, CA