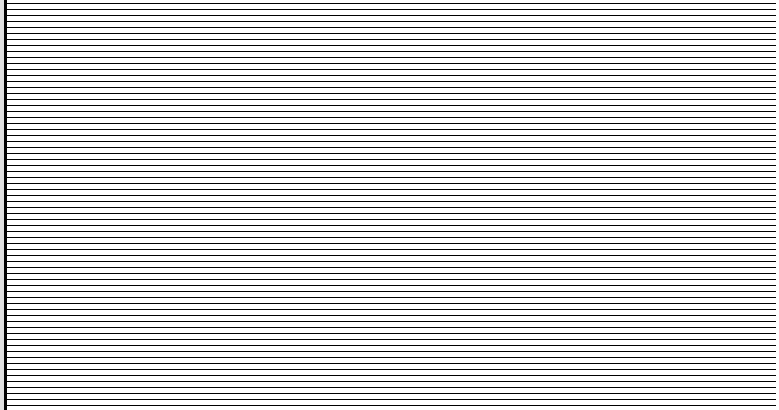


The 2001

ACT Legislative Assembly Election

*Electronic Voting and*

*Counting System Review*



ISBN 0 642 60142 9

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Produced by Publishing Services for the  
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Publication No 02/1169

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Dear Attorney-General

This report on the review of the 2001 ACT Legislative Assembly Election Electronic Voting and Counting System is presented to you under section 10A of the *Electoral Act 1992*.

Subsection 10A(2) of the Electoral Act requires you to cause a copy of this report to be laid before the Legislative Assembly within 6 days of receiving the report.

Yours sincerely

Three handwritten signatures in black ink, arranged horizontally from left to right.

Graham Glenn  
Chairperson

19 June 2002

Phillip Green  
Electoral Commissioner

19 June 2002

Christabel Young  
Member

19 June 2002



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# **The 2001 ACT Legislative Assembly Election Electronic Voting and Counting System Review**

## **Executive Summary**

The October 2001 ACT Legislative Assembly election represented a major milestone in the conduct of elections in Australia with the first use of electronic voting at polling places for parliamentary elections. This election also saw the introduction of electronic counting of all ballots for the first time in the ACT.

This review of the conduct of electronic voting and vote counting at the 2001 election describes the processes undertaken in developing and introducing the Electronic Voting And Counting System (EVACS), examines issues for consideration, and makes recommendations for taking electronic voting and electronic vote counting forward to the next election, due to be held in October 2004.

*How electronic voting and counting worked in 2001*

The ACT Electoral Commission considers that the use of electronic voting and electronic vote counting was a success and a valuable improvement on democratic processes in the ACT. A total of 16,559 electronic votes were recorded at 4 pre-poll voting centres and at 8 polling places on polling day.

The electronic voting system:

- Eliminated the need for manual counting of electronic votes, thereby reducing the possibility of counting error and speeding the transmission of results;
- Was reliable and secure;
- Effectively eliminated unintentional voter errors;
- Reduced the number of informal votes;
- Allowed blind and sight-impaired people to vote entirely without assistance and in secret through use of headphones and recorded voice instructions; and
- Provided on-screen voting instructions in 12 different languages.

The electronic counting system also had significant benefits. Preferences shown on paper ballots were data-entered by two independent operators, electronically checked for errors, and manually corrected if needed. This data was then combined with the results of the electronic voting, and a computer program was used to distribute preferences under the ACT's Hare-Clark electoral system.

The electronic counting system:

- Effectively eliminated errors such as incorrectly sorting or counting ballot papers;
- Increased the accuracy of the election count;
- Reduced the time needed to accurately count the votes and announce the election result; and

- Increased the amount of information available about errors made on paper ballots by electors.

The electronic voting and counting system was delivered on budget, using ACT Government in-house resources for supply of hardware and technical support, and external contractors for software development. However, implementation time was very short following passage of enabling legislation in December 2000, and electronic voting commenced one week later than anticipated – 2 weeks before polling day rather than 3 weeks before.

While the electronic voting and counting system experienced some problems, such as difficult to use barcode readers and minor delays in displaying results on and after election night, it was well received by voters. The Commission considers that these minor problems can be dealt with, and an improved system can be made available for the 2004 Legislative Assembly election.

While there were some concerns publicly raised about the accuracy of the electronic count, the Commission is satisfied that the built-in checks in the methodology used for the data entry system meant that the system was close to 100% accurate and that these concerns were unfounded. This view was confirmed by post-election verification checks.

*Electronic voting and counting for future elections*

In the light of the 2001 election experience, the Commission recommends that data entry of preferences shown on paper ballots and electronic counting be made standard practice at ACT elections. Use of data entry and electronic counting can be achieved within the Commission's existing election year budget regardless of whether computer voting is provided or not.

The Commission also recommends that electronic voting be provided to more electors in 2004. As the extra funding provided in 2001 for electronic voting was a "once off" supplement, additional funding may be needed to provide electronic voting at future elections, depending on which option is chosen.

The challenge for electronic voting in the future is to make the facility available to more voters. The ideal situation would be to provide electronic voting as an option to all voters at all voting locations. However, the cost of achieving this at all 81 polling places around the ACT would be very high and, logistically, deployment of computers at this number of polling places for a single day would be impractical and prohibitively expensive. Therefore electronic voting could not be offered to all electors under current polling arrangements.

The Commission identified 2 main alternatives for provision of electronic voting at the 2004 election:

- Working within existing polling arrangements, whereby most electors vote on polling day at their local polling place, and providing electronic voting at pre-poll centres and a small number of polling places. This would mean that most voters would continue to use paper ballots.



- Moving away from the traditional concept of “polling day” and replacing it with a “polling period” which could be from 1-3 weeks. By extending the right to vote throughout a polling period to all electors, electronic voting could be made available at (say) 12 locations strategically placed near main shopping centres and workplaces. Rather than concentrating voting on 1 day at local polling places, electors could vote over (say) a 3 week period at a regional voting centre. In this way, electronic voting could be made available to almost all electors.

Table 5 in this report gives more detail about a range of options within these 2 broad categories, including estimated numbers of electronic votes and expected costs and savings.

The Commission recognises that moving away from the concept of most electors voting on polling day to extending the polling period for all electors by up to 3 weeks would be a significant departure from current practice. In particular, it is recognised that political parties and candidates tend to design their election campaigns to “peak” just before polling day, so as to achieve maximum impact.

However, the Commission also notes that over 31,000 electors (or over 15% of all voters) voted in the 3 weeks before polling day by post or at a pre-poll centre in 2001. The significance of these early voters cannot be over emphasised, given that seats were won and lost in 2001 with margins of only around 50 votes. It could be argued that it would be in the best interests of parties and candidates to be treating the whole pre-poll period as a time to maximise their appeal to voters, rather than concentrating primarily on polling day. Given that such a large number of electors cast their votes before polling day, extending early voting to all electors might not be such a dramatic step.

Considerable cost off-sets would be achieved by reducing the number of polling places from 81 relatively small polling places used on polling day only to around 12 polling centres open for a 3 week period. As table 5 shows, these cost off-sets could be used to offer electronic voting to all electors without an unreasonable increase in the cost of elections, and may even be used to reduce the cost of elections. The inconvenience of closing local polling places would be offset by extending the time available for voting from 1 day to 3 weeks and placing polling facilities near where people shop and work.

Other benefits could be obtained by restricting polling to only 12 locations. One such benefit could be to use networked computers to replace printed certified lists when marking electors’ names off rolls. While this system would not prevent multiple or fraudulent voting, it would reduce the opportunity for fraud significantly. The cost of providing and networking computers would be offset against the considerable cost of printing and scanning certified lists, which would no longer be needed.

The Commission remains of the view that it would not be appropriate to use the internet for voting for Legislative Assembly elections in the near future. Security concerns and the difficulty of providing electors with unique on-line identifiers are still seen as obstacles that have not yet been overcome. Therefore the Commission continues to hold the view that electronic voting should only be provided in a controlled environment at polling centres.

As all but 1 of the options identified for continuing to provide electronic voting require additional funding, and as the suggestion to replace polling day with a polling period requires legislative change, the Government and the Legislative Assembly must decide how they wish to progress the implementation of electronic voting in the ACT. It may be appropriate to refer this matter to an Assembly Committee to allow members of the public to be consulted and to have their say on the future of electronic voting in the ACT.

*Recommendations*

The Commission recommends that:

- Electronic counting using the EVACS computer system be made standard practice at ACT elections. Continued use of this system does not require legislative change or additional funding.
- Electronic voting using the EVACS computer system be continued at the 2004 election. Use of this system does not require legislative change but may require additional funding, depending on the implementation option chosen.
- The ACT Government and the ACT Legislative Assembly consider the options set out in this report for increasing the proportion of electronic votes cast, and decide to either:
  - ▶ Retain existing polling arrangements, whereby most electors vote on polling day at their local polling place, and provide funding to enable electronic voting at pre-poll centres and a small number of polling places; or
  - ▶ Amend the *Electoral Act 1992* to replace the traditional concept of “polling day” with a 3 week “polling period” when any elector may vote at a polling centre, and provide funding to enable electronic voting at 12 locations strategically placed near main shopping centres and workplaces.
- To assist with making the above decision, the ACT Legislative Assembly refer the issue of the future of electronic voting and counting to an Assembly Committee, so that a public inquiry can be held.
- Any relevant Government decisions be made in a timely fashion so as to allow sufficient time for the development, testing and implementation of any new electronic voting and counting software and procedures.
- The Commission make the following enhancements to EVACS and to related procedures:
  - ▶ Improving the performance of the barcode readers attached to the voting terminals;
  - ▶ Extending the range of statistics that can be published electronically during the count;
  - ▶ Improving the set-up process to automate the loading of election details, particularly candidate names and sound files;
  - ▶ Minimising the likelihood of down-time of computers used at polling places;
  - ▶ Enhance the useability of the error-control reports used in the data-entry process;





































































Disks were run at the close of polling on each day of pre-poll voting. However, each disk contained the cumulation of all votes cast on all days, so that, come polling night, only the most recent disk was needed to be loaded into the counting system. The other disks were retained for verification and disaster-recovery purposes (which in the event were not needed).

Once the disks were written and sealed, the server was powered off and the server either locked away in a secure cabinet (if the location was a pre-poll centre and voting was to resume on another day) or, on election night, all servers were removed and taken back to Elections ACT.

## **Electronic counting component**

### *On election night*

A vote counting server was set up in the Tally Room on election night. It was connected to a secure internet server, so that the results could be published on the internet on election night. However, this server was not used for the final counting process, and the ballot paper preference data loaded into this server was not used in the “official” counting server at the counting centre. A second copy of the zip disks was used to load data onto the “official” counting server.

The electronic voting data from the pre-poll voting centres as at the close of voting on the Friday before polling day was transferred on zip disk to the Tally Room vote counting server. This data was used to display results in the Tally Room and on the internet results system. This data was ready to load into the system soon after the polls closed at 6 pm. However, delays in the set-up of the election night system (a separate application from EVACS) meant that the first set of figures from pre-poll centres was made public around 7.15 pm. At this time, first preference results and an interim preference distribution were displayed on the results system.

The electronic voting data from the polling day polling places as at the close of voting on polling day was transferred on zip disk to the tally room vote counting server after the polls closed. This data was added to the data available in the Tally Room and on the internet.

Votes cast on paper ballots were counted in the usual way to first preferences and the results phoned through to the Tally Room. This data was added to the data available in the Tally Room and on the internet.

### *After election night*

Electronic voting data from all electronic polling locations was transferred on zip disk to the central counting server. These zip disks were different (but identical) disks to those used in the Tally Room on election night. A unique identifying “hash” number was used to demonstrate that the data that was loaded on the server was the same as the data that was written to the disk at the polling location.

The electronic voting data was combined with data generated by the data entry of preferences shown on paper ballots, using the following process.

*The data entry of preferences at the central scrutiny centre*

Unlike at earlier elections, an automatic fresh scrutiny or recheck of the first manual count of all ballot papers counted at polling places was not conducted. Instead, all preferences shown on all formal paper ballots were data entered at the central scrutiny centre.

All preferences shown on every paper ballot counted as formal on election night were entered into a computer system at the central scrutiny centre. Each ballot paper was entered by two different operators, and the results of the two data entries were compared by the computer system. Any apparent errors were identified. This process was designed to minimise the possibility of data entry error.

Scrutineers were entitled to observe this process and seek rulings on interpretations placed on ballot papers.

The data entry process worked as follows:

- All formal ballot papers were parcelled in “batches” consisting of (on average) 50 papers.
- Each batch was allocated a number that uniquely identified the batch, the relevant polling place and electorate.
- Data entry operators were given a batch of ballot papers.
- The data entry operator entered the batch number into the computer system.
- For each ballot paper, the data entry operator first entered the ballot paper’s Robson rotation “version number” into the computer system. This number, printed on every ballot paper, brought up a data-entry screen that presented the candidates in the same order as that shown on the ballot paper.
- The data entry operator then entered the preferences shown on the ballot paper into the computer system, in the order in which the candidates appeared.
- Electoral officers were present during data-entry to rule on unclear numbers and on disputed interpretations of preferences. Challenged ballot papers were flagged with coloured stickers for checking by scrutiny supervisors.
- After a batch was data-entered for the first time, it was then given to a second operator, who re-entered the batch in the same manner.
- After a batch was entered a second time, the computer system generated two printed reports.
- The first report listed all papers shown in the batch and the preferences that had been entered for each.
- The second report was similar to the first, but only listed papers where there was a difference between the first and second data entries, or where there were any preferences apparently omitted or duplicated, or where it appeared a ballot paper was informal.

- An Electoral officer investigated the second “apparent error” report by comparing the print-out with the original ballot papers to determine whether there had been any error in data entry.
- An Electoral officer could also conduct “spot checks” of apparently correctly-entered ballot papers against the first report to sample the accuracy of the data entry process.
- Ballot papers bearing coloured stickers indicating a challenged paper were also checked against the computer record to ensure they were correctly entered. Where the voter’s intention was difficult to determine, the Commissioner or the Deputy Commissioner ruled on the interpretation of the paper.
- Any identified errors in data entry were corrected on the computer system by a “supervisor-level” data entry operator – generally a permanent Electoral officer or a senior casual officer.
- Once all apparent errors in a batch had been corrected on the system, or confirmation was given that a batch was error-free, the batch was “committed” to the scrutiny system. After this was done, the computer record of the papers in the batch could not easily be altered without restarting the data capture process. Scrutineers were made aware that, if they wished to challenge ballot papers, they should do so before the relevant batch was committed.

The above process continued until all formal paper ballots were data-entered.

All ballot papers identified at the first manual count in polling places as “formal” were data entered. Some 895 of these ballot papers were subsequently classified as informal at the data-entry stage, usually because of duplicated number “1”s that were not identified in the first count. This led to a corresponding change to the first preference totals of some candidates when the election night results were compared to the final results after data entry.

All ballot papers identified at the first manual count as “informal” were manually rechecked by the Commissioner at the central scrutiny centre. Any papers ruled at that stage to be formal were data-entered. Ballot papers confirmed as informal were not data entered.

Table 1: Electronic and paper ordinary votes issued at pre-poll centres

Polling date	Belconnen		City		Tuggeranong		Woden		Total Pre-Poll Centres	
	Electronic	Paper Total	Electronic	Paper Total	Electronic	Paper Total	Electronic	Paper Total	Electronic	Paper Total
02/10/2001	0	127	0	141	0	98	0	111	0	477
03/10/2001	0	135	0	156	0	103	0	85	0	479
04/10/2001	0	123	0	140	0	107	0	126	0	496
05/10/2001	0	160	0	135	0	107	0	107	0	509
08/10/2001	0	164	0	194	0	123	0	122	15	603
09/10/2001	81	111	98	115	53	100	91	78	323	404
10/10/2001	125	130	102	123	128	88	120	49	475	390
11/10/2001	118	115	92	132	86	115	100	22	396	384
12/10/2001	162	124	124	143	116	107	201	51	603	425
13/10/2001	315	165	103	112	168	286	268	46	854	609
15/10/2001	213	330	170	333	163	273	405	58	951	994
16/10/2001	338	273	273	412	264	227	371	119	1246	1031
17/10/2001	487	304	309	500	338	282	510	99	1644	1185
18/10/2001	546	401	379	641	480	366	435	217	1820	1625
19/10/2001	882	908	576	1100	589	964	1025	326	3082	3298
Total	3267	3570	2226	4377	2375	3346	3541	1616	11409	12909
Total from 9/10/2002	3267	2861	2226	3611	2375	2808	3526	1065	11394	10345

Source: Daily returns submitted by pre-poll centres. Variations from published election results are due to minor discrepancies in the daily returns and to discarded votes.

Table 2: Summary of first preference electronic votes by electorate/ACT total

Party/Group	Brindabella		Ginninderra		Molonglo		ACT Total	
	Votes	%	Votes	%	Votes	%	Votes	%
AD	437	8.52%	679	13.56%	722	11.42%	1838	11.16%
ALP	2169	42.26%	1913	38.19%	2201	34.80%	6283	38.16%
CFP	0	0.00%	0	0.00%	41	0.65%	41	0.25%
DR	0	0.00%	292	5.83%	0	0.00%	292	1.77%
GEP	0	0.00%	36	0.72%	114	1.80%	150	0.91%
KIG	57	1.11%	0	0.00%	14	0.22%	71	0.43%
LDP	22	0.43%	92	1.84%	55	0.87%	169	1.03%
LP	1606	31.29%	1323	26.41%	2126	33.62%	5055	30.70%
NGGP	80	1.56%	64	1.28%	85	1.34%	229	1.39%
PO	339	6.61%	0	0.00%	0	0.00%	339	2.06%
TAG	354	6.90%	511	10.20%	836	13.22%	1701	10.33%
Other	68	1.33%	99	1.98%	130	2.06%	297	1.80%
<b>Formal</b>	<b>5132</b>	<b>99.21%</b>	<b>5009</b>	<b>99.54%</b>	<b>6324</b>	<b>99.53%</b>	<b>16465</b>	<b>99.43%</b>
<b>Informal</b>	<b>41</b>	<b>0.79%</b>	<b>23</b>	<b>0.46%</b>	<b>30</b>	<b>0.47%</b>	<b>94</b>	<b>0.57%</b>
<b>Total</b>	<b>5173</b>	<b>8.08%</b>	<b>5032</b>	<b>7.95%</b>	<b>6354</b>	<b>6.96%</b>	<b>16559</b>	<b>7.57%</b>
<b>Enrolment</b>	<b>64020</b>		<b>63267</b>		<b>91328</b>		<b>218615</b>	
<b>Total votes from all sources</b>	<b>59216</b>		<b>58022</b>		<b>81483</b>		<b>198721</b>	
<b>Evotes as % of total votes</b>	<b>8.74%</b>		<b>8.67%</b>		<b>7.80%</b>		<b>8.33%</b>	
<b>Discarded</b>	<b>34</b>	<b>0.65%</b>	<b>35</b>	<b>0.69%</b>	<b>40</b>	<b>0.63%</b>	<b>109</b>	<b>0.65%</b>
<b>Discarded + Informal</b>	<b>75</b>	<b>1.44%</b>	<b>58</b>	<b>1.14%</b>	<b>70</b>	<b>1.09%</b>	<b>203</b>	<b>1.22%</b>
<b>Total evotes including discarded</b>	<b>5207</b>		<b>5067</b>		<b>6394</b>		<b>16668</b>	

Note: "Discarded" means a ballot that was issued to an elector but not counted as a vote. An electronic vote barcode that was issued to an elector but not recorded on the computer system would be counted as discarded. A paper ballot that was not placed in a ballot box would be counted as discarded.

Table 3: Summary of first preference paper ballots by electorate/ACT total

Party/Group	Brindabella		Ginninderra		Molonglo		ACT Total	
	Votes	%	Votes	%	Votes	%	Votes	%
AD	3501	6.80%	4729	9.33%	5270	7.30%	13500	7.74%
ALP	22722	44.14%	21939	43.27%	28672	39.71%	73333	42.05%
CFP	0	0.00%	0	0.00%	628	0.87%	628	0.36%
DR	0	0.00%	2834	5.59%	0	0.00%	2834	1.63%
GEP	0	0.00%	310	0.61%	630	0.87%	940	0.54%
KIG	579	1.12%	0	0.00%	230	0.32%	809	0.46%
LDP	275	0.53%	953	1.88%	476	0.66%	1704	0.98%
LP	16429	31.92%	14229	28.07%	24677	34.18%	55335	31.73%
NGGP	870	1.69%	640	1.26%	1024	1.42%	2534	1.45%
PO	3549	6.90%	0	0.00%	0	0.00%	3549	2.04%
TAG	2720	5.28%	3915	7.72%	9033	12.51%	15668	8.99%
Other	827	1.61%	1150	2.27%	1564	2.17%	3541	2.03%
<b>Formal</b>	<b>51472</b>	<b>95.24%</b>	<b>50699</b>	<b>95.68%</b>	<b>72204</b>	<b>96.11%</b>	<b>174375</b>	<b>95.73%</b>
<b>Informal</b>	<b>2571</b>	<b>4.76%</b>	<b>2291</b>	<b>4.32%</b>	<b>2925</b>	<b>3.89%</b>	<b>7787</b>	<b>4.27%</b>
<b>Total</b>	<b>54043</b>	<b>84.42%</b>	<b>52990</b>	<b>83.76%</b>	<b>75129</b>	<b>82.26%</b>	<b>182162</b>	<b>83.33%</b>
<b>Enrolment</b>	<b>64020</b>		<b>63267</b>		<b>91328</b>		<b>218615</b>	
<b>Discarded</b>	<b>4</b>	<b>0.01%</b>	<b>5</b>	<b>0.01%</b>	<b>7</b>	<b>0.01%</b>	<b>16</b>	<b>0.01%</b>
<b>Discarded + Informal</b>	<b>2575</b>	<b>4.76%</b>	<b>2296</b>	<b>4.33%</b>	<b>2932</b>	<b>3.90%</b>	<b>7803</b>	<b>4.28%</b>
<b>Total paper ballots including discarded</b>	<b>54047</b>		<b>52995</b>		<b>75136</b>		<b>182178</b>	

Note: "Discarded" means a ballot that was issued to an elector but not counted as a vote. An electronic vote barcode that was issued to an elector but not recorded on the computer system would be counted as discarded. A paper ballot that was not placed in a ballot box would be counted as discarded.

Table 4: Summary of all first preference votes by electorate/ACT total

Party/Group	Brindabella		Ginninderra		Molonglo		ACT Total	
	Votes	%	Votes	%	Votes	%	Votes	%
AD	3938	6.96%	5408	9.71%	5992	7.63%	15338	8.04%
ALP	24891	43.97%	23852	42.82%	30873	39.31%	79616	41.72%
CFP	0	0.00%	0	0.00%	669	0.85%	669	0.35%
DR	0	0.00%	3126	5.61%	0	0.00%	3126	1.64%
GEP	0	0.00%	346	0.62%	744	0.95%	1090	0.57%
KIG	636	1.12%	0	0.00%	244	0.31%	880	0.46%
LDP	297	0.52%	1045	1.88%	531	0.68%	1873	0.98%
LP	18035	31.86%	15552	27.92%	26803	34.13%	60390	31.64%
NGGP	950	1.68%	704	1.26%	1109	1.41%	2763	1.45%
PO	3888	6.87%	0	0.00%	0	0.00%	3888	2.04%
TAG	3074	5.43%	4426	7.94%	9869	12.57%	17369	9.10%
Other	895	1.58%	1249	2.24%	1694	2.16%	3838	2.01%
<b>Formal</b>	<b>56604</b>	<b>95.59%</b>	<b>55708</b>	<b>96.01%</b>	<b>78528</b>	<b>96.37%</b>	<b>190840</b>	<b>96.03%</b>
<b>Informal</b>	<b>2612</b>	<b>4.41%</b>	<b>2314</b>	<b>3.99%</b>	<b>2955</b>	<b>3.63%</b>	<b>7881</b>	<b>3.97%</b>
<b>Total</b>	<b>59216</b>	<b>92.50%</b>	<b>58022</b>	<b>91.71%</b>	<b>81483</b>	<b>89.22%</b>	<b>198721</b>	<b>90.90%</b>
<b>Enrolment</b>	<b>64020</b>		<b>63267</b>		<b>91328</b>		<b>218615</b>	
<b>Discarded</b>	<b>38</b>	<b>0.06%</b>	<b>40</b>	<b>0.07%</b>	<b>47</b>	<b>0.06%</b>	<b>125</b>	<b>0.06%</b>
<b>Discarded + Informal</b>	<b>2650</b>	<b>4.47%</b>	<b>2354</b>	<b>4.05%</b>	<b>3002</b>	<b>3.68%</b>	<b>8006</b>	<b>4.03%</b>
<b>Total votes including discarded</b>	<b>59254</b>		<b>58062</b>		<b>81530</b>		<b>198846</b>	

Note: "Discarded" means a ballot that was issued to an elector but not counted as a vote. An electronic vote barcode that was issued to an elector but not recorded on the computer system would be counted as discarded. A paper ballot that was not placed in a ballot box would be counted as discarded.

**Table 5: Options for providing electronic voting at the 2004 election**

*Options to provide electronic voting using existing "polling day" arrangements*

Option Description	No. of pre-poll centres	No. of polling day polling places <sup>1</sup>	No. of voting PCs at each location	Estimated no. of electronic votes <sup>2</sup>	Estimated budget supplementation required
Option A Electronic polling provided at the same number of polling places as at the 2001 election.	4 Civic, Woden, Tuggeranong, Belconnen	8 electronic 73 non-electronic	10 PCs except Civic 20 PCs	22,000	\$80,000
Option B Electronic polling provided at more polling places on polling day.	4 Civic, Woden, Tuggeranong, Belconnen	12 electronic 69 non-electronic	10 PCs except Civic 20 PCs	27,000	\$130,000

*Options to provide electronic voting during a "polling period" arrangement*

Option C <sup>3</sup> Open pre-poll to voting to all electors and provide electronic voting for three weeks at 4 pre-poll centres and on polling day at 4 polling places. Keep all other polling places open with paper ballots only.	4 Civic, Woden, Tuggeranong, Belconnen	8 electronic 73 ordinary polling places	30 at pre-poll centres 10 at polling places on polling day	90,000	\$210,000  (Cost \$240,000 less \$30,000 offset saving in scrutiny costs)
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Option Description	No. of pre-poll centres	No. of polling day polling places	No. of voting PCs at each location	Estimated no. of electronic votes	Estimated budget supplementation required
<p>Option D</p> <p>Open pre-poll voting to all electors for three weeks and provide 12 pre-poll centres and 8 electronic polling places on polling day only.</p>	<p>12</p> <p>Civic, Woden, Tuggeranong, Belconnen, Gungahlin, Kippax, Dickson, Manuka, Weston, Conder, Chisholm, Erindale</p>	<p>20 electronic</p> <p>(pre-poll locations plus eight other locations)</p>	<p>30 at pre-poll centres</p> <p>10 at other polling places on polling day</p>	<p>165,000</p>	<p>\$190,000</p> <p>(Cost \$667,600 less offset cost of not opening 61 polling places \$427,000 and scrutiny savings \$50,000)</p>
<p>Option E</p> <p>Open pre-poll voting to all electors for three weeks and provide 12 pre-poll centres only</p>	<p>12</p> <p>Civic, Woden, Tuggeranong, Belconnen, Gungahlin, Kippax, Dickson, Manuka, Weston, Conder, Chisholm, Erindale</p>	<p>12 electronic</p> <p>(pre-poll locations only)</p>	<p>30</p>	<p>165,000</p>	<p>Saving of \$37,000</p> <p>(Cost 580,000 less offset of cost of not opening 81 polling places 567,000 and scrutiny savings \$50,000)</p>

Note 1: 8 non-pre-poll electronic polling places on polling day would be the maximum logistically achievable due to set-up considerations

Note 2: In calculating the number of votes to be taken it is assumed that 75% of the votes taken where electronic voting is offered will be electronic votes.

Note 3: In Option C, it is assumed that half the voting population (110,000 electors) will vote on polling day