



Corporate Report

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GENERAL COMMITTEE AGENDA

AUG 4 1999

DATE: August 4, 1999

TO: Chairman and Members of General Committee

FROM: Janice M. Baker, C.A.
Commissioner of Corporate Services and Clerk/Treasurer

SUBJECT: **Alternative Voting Equipment**

ORIGIN: Corporate Services Department
Office of the City Clerk

BACKGROUND: Since 1980, the City of Mississauga has used the Votomatic Punch Card System to conduct its election. The Votomatic was developed 35 years ago and in 1980 was used by nearly 400 municipalities across North America. According to current information the City of Mississauga is the last municipality utilizing this system in Canada.

During the time when the Votomatic was used extensively, it was the most advanced method of casting and tallying ballots. The Votomatic system proved to be accurate, and upheld the integrity of the election process.

Nevertheless, with recent advancements in technology, population growth, changes in legislation and election standards, the Votomatic is viewed as outdated and administratively cumbersome. The concerns related to this system are as follows:

- Delayed election results
- Labour intensive
- Last user in Canada

Delayed Election Results

It takes approximately three and one-half to four hours using the Votomatic method to process the ballots. This is partially due to the requirement to transport all ballots to the central counting area at the Civic Centre. With the anticipated increase in voter population since the 1997 election, further delays in the reporting of results are expected.

Increasing staff or polling subdivisions would not solve this problem, it may actually delay the process. Typically as more polling subdivisions are added, more election workers are required. Thus more people have to be processed at the headquarter locations, and more individual ballots must be processed in the election room.

Labour Intensive

The Votomatic Punch Card System requires a great deal of preparation, particularly the assembly of the vote recorders. Vote recorders are critical units that allow electors to mark the ballots. Since the City uses two vote recorders for every one polling subdivision, a total of 1600 vote recorders must be cleaned and assembled.

Last User In Canada

It is a requirement that procedures are in place to handle emergency situations, such as an evacuation or a power outage. Since 1980, the City of East York which also used the Votomatic, was the designated emergency backup site.

Since the City of Mississauga is now the only remaining Votomatic user in Canada, there is no longer an emergency counting area available. Consequently, if the system is to be used again, it will be necessary to acquire and install a second system off site for emergency purposes.

The existing system could be upgraded and used again in the 2000 election however, based on the above concerns, the Office of the City Clerk has made a conscious effort to review and investigate the various alternative voting methods/equipment.

INTRODUCTION:

At the December 2, 1998 Budget meeting, Council approved \$350,000 in the 1999 Information Technology Capital Budget for review and potential replacement of the current tabulating technology. A project team of City Clerk and Information Technology staff recently reviewed and investigated the following voting methods:

- Touch Screen
- Mail-In
- Telephone Voting
- Paper (Manual Count)
- Votomatic Punch Card System - Central Count
- Votomatic Punch Card System - Poll Count
- Optical Scan - Central Count
- Optical Scan - Poll Count

The project team used a recent evaluation of voting methods completed by the Association of Municipal Clerks and Treasurers of Ontario (AMCTO) as part of the research for this report. Mississauga staff participated in the AMCTO Project.

COMMENTS:

A number of evaluation criteria were developed to measure the effectiveness of the alternative voting methods, including:

- Security of System
- Security relating to Ballots
- Accuracy
- Elector Confidentiality
- Ease of Use for the Elector
- Administrative Impact
- Cost Implications (System)
- Cost Implications (Administration)
- Availability of Results (On Voting Day)
- Impact on election workers
- Special printing requirements
- System contingencies to deal with operational difficulties on Voting Day
- Recount issues
- Timely processing of high volumes

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Based on the evaluation of the eight voting methods, the project team concluded that the following voting methods should not be pursued as viable solutions for the City of Mississauga:

TOUCH SCREEN

How It Works

Prior to the election, staff mail out an information package to all electors on the voters' list. The package includes election day details about poll location, date and times, the elector's personalized smart card and a Personal Identification Number (PIN) that is unique to that elector.

The touch screen system is similar to an Automated Teller Machine (ATM). On-screen ballots are designed and the system is programmed to scroll through the appropriate ballot pages for a particular elector.

At the polling location, the elector inserts the smart card into the voting machine and the voting process begins. One ballot page appears on the screen at a time. The elector casts his/her vote by pressing a marked spot on the screen beside the name of the selected candidate for that office. After a vote is cast for the first office, the next ballot pages will appear until all offices are voted for and reviewed by the elector.

After the polls close, the DRO, reconciles the number of ballots cast, produces totals and sends the poll results to the central tabulation area via modem.

Recounts can only be done via automated methods only since there are no (hard copy) ballots. The recount is done by recalculating the totals based on the stored electronic ballots.

The municipalities that used the touch screen system for the 1997 election commented that the system worked well but there were concerns with line ups and delays in the voting process. Generally, an elector takes approximately 1-2 minutes to cast a ballot. With the touch screen the process can take up to 5-6 minutes. The City would require a minimum of 1200 units, and it is still anticipated that during the voting peak hours of 5:00pm-8:00pm, line-ups and delays would occur.

Advantages

- upholds the integrity and confidentiality of the election process
- results are timely and accurate
- equipment preparation is less labour intensive
- fewer poll workers required
- fewer supplies required
- most technologically advanced system

Disadvantages

- storage and transportation of units
- no traditional hardcopy ballot
- takes too long to vote (potential lineups at polls)
- high system cost

The Touch Screen System is a technologically advanced system. It successfully addresses the issues of decreasing the number of poll workers, attaining timely results, and decreasing labour intensity. However, the startup costs are high. To acquire and implement this system would require a one-time startup cost of approximately \$3,600,000- \$4,000,000.

Due to the high cost of acquiring the system, and the potential for delays at the polls during peak periods, it is recommended that this alternative not be pursued.

MAIL-IN VOTING

How It Works

Prior to the election, staff mail out a package to all electors on the voters' list. The package includes a guide on how to vote by mail, a ballot that is specific to that individual's ward and school support, and a return envelope.

On receiving the package, the elector marks the ballot for his/her selected candidates and mails the ballot back to the City (or drops it off if drop-off arrangements were made).

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Incoming ballots are stored until 8:00p.m. on election night. Staff then open the envelopes, sort the ballots by ward and pass them on to tabulation staff who manually count the number of votes cast for each candidate.

The municipalities that used this method of voting in the last election were satisfied with the result, however, only small municipalities used the system. One matter of concern was the delays which resulted because envelopes containing ballots could not be opened until after the close of the polls. Each of the municipalities that used the mail-in system in 1997 conducted the count manually.

Since ballots are mailed out and returned by mail, there is no opportunity to ensure the integrity of the process. There is no guarantee that the mailed-out ballot will reach the designated elector. In addition the possibility exists that anyone could cast a ballot that was intended for another elector.

Advantages

- ease of use for elector
- convenient for elector, voting at any place at any time
- traditional means of marking of ballot
- no polling locations
- eliminates traditional staffing at the polls

Disadvantages

- integrity and confidentiality of the election process not ensured
- unsupervised voting. No secure way of indicating who has voted
- once ballots are mailed out there is no control as to where they end up
- logistical problems with ballots arriving at city hall after the specified time frame
- large tabulating team required at the close of the polls to open, sort and count the ballots
- delayed results
- recounts are time consuming and costly
- tight deadlines when preparing ballots, mailout, and ensuring sufficient time for ballots to be returned
- the marking of the ballot by the elector can be open to interpretation

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At present, startup costs are unknown.

Unsupervised voting is a questionable process. Elections are based on confidentiality and secrecy of the process. Voting by mail may have administrative benefits but the system is not recommended due to its logistical nature and also that it jeopardizes the integrity of the process.

TELEVOTING

How It Works

Prior to the election, staff mail out a package to all electors on the voters' list. The package includes a guide on how to vote by telephone, a list of candidates for each office, and a Personal Identification Number (PIN) that is unique to that elector.

During the election period, the individual may vote at any time 24 hours/day, 7 days/week. Voting is done by dialling the number provided, entering the PIN number and then following the instructions to vote.

After the close of the polls, the vendor runs a tabulation program to count the votes for each candidate. The program produces a report of the final results which is sent by fax to the City.

During the 1997 municipal election, some municipalities conducted their elections or the advance polling using the televoting system. Generally, the municipalities using this system were smaller municipalities with a large number of non-resident electors. The system was reported as working fairly well, however the municipalities that used this system had a limited number of candidates running for office. Concern was expressed that if there were a greater number of candidates, the system may have encountered difficulties processing the volume. While the voting period was extended over a 10-day period, the majority of the votes were cast on election day. Generally, the voter turnout remained the same and no increase was noted. The vendor has also indicated that they may not have the capabilities at the present time to accommodate the needs of larger municipalities such as Mississauga for a full municipal election. North York used televoting in a non-election year for their referendum and the system performed quite well, however it was used for one question (YES or NO).

It is interesting to note that North York did not use televoting at their subsequent municipal election.

Since PINs are mailed out, there is no guarantee that the PIN will reach the designated elector, and there is a possibility that someone else could cast a vote using a PIN intended for another elector.

Advantages

- results are timely and accurate
- recount is rapid and accurate
- ease of use for elector
- convenient for elector, voting at any place at any time
- no polling locations
- eliminates poll workers

Disadvantages

- secrecy and confidentiality of the election process not ensured
- unsupervised voting. No secure way of indicating who has voted
- once PIN numbers are mailed out there is no control as to where they end up
- vendor has indicated that they may not be able to service a municipality as large as Mississauga
- no traditional hardcopy of ballot

At present, startup costs are unknown.

Given the concerns about the ability of the vendor to service a municipality of the size of Mississauga, and the possible breach of secrecy that could result from mailing the PIN, it is recommended that this option not be pursued.

PAPER BALLOTS

The Paper Ballot process was used by the City prior to 1980. It is a very straightforward process for the elector and for election workers, however it is extremely labour intensive. Ballots are counted manually, which could lead to incorrect counts either due to subjective interpretation of how a ballot is marked, or due to the human error involved in a task of this magnitude.

Advantages

- secrecy and confidentiality of the election process is ensured

Disadvantages

- delayed results
- increased number of poll workers required
- increased number of polling subdivisions
- spoiled ballots not detected until after the close of the polls
- recount is time consuming and costly
- the marking of the ballot by the elector can be open to interpretation

The Paper Ballot System has been the traditional method of casting ballots, but the tabulation process is very labour intensive and not as accurate as automated systems. With the size of Mississauga, the counting process would be very time consuming and open to human error. Although there are no start-up costs for acquiring and implementing such a system, the additional labour and administration costs associated with a paper ballot election would be in excess of \$500,000.

Due to the labour intensity of the tabulation process, the possibility of misinterpreting the mark on ballots, and the subsequent delays in reporting results, it is recommended that the Paper Ballot System not be pursued as an alternative to the existing system.

PREFERRED OPTIONS

The project team has concluded that the following alternatives are viable and that a Request for Proposals should be issued for the implementation of one of the following voting methods:

VOTOMATIC PUNCH CARD SYSTEM- CENTRALIZED COUNT (Currently used by the City)

How It Works

The elector at the polling location is processed by a Deputy Returning Officer (DRO), given a punch card (ballot), and directed to the voting booth. The elector goes behind a privacy screen, inserts the ballot into the vote recorder, and for each page uses a stylus to punch a hole in the card beside the name of the selected candidate. When the elector has finished voting, the punch card is placed in a secrecy folder and dropped into a ballot box.

At the close of the polls, the DRO removes the ballots from the ballot box, reconciles them, and places them in a transfer box for delivery to the counting area at the Civic Centre. At the Civic Centre, staff track and verify incoming ballots. When the transfer boxes reach the counting area, the sealed boxes are opened and the ballots removed. The cards are fed through high-speed card readers, and the votes are counted and results displayed as ballots are received throughout the evening.

The Votomatic unit consists of a vote recorder that contains a series of pages where each page shows the candidates' names for a particular office. The ballot is a computer punch card designed and programmed to be counted by card readers. Although a manual count is possible, it would be very time consuming and costly, with a significant risk of error.

Advantages

- upholds the integrity and confidentiality of the election process
- results are very accurate
- automated recount is rapid and accurate

Disadvantages

- delayed results
- election preparation is labour intensive due in part to the effort required to prepare and assemble the vote recorders
- sole user in Canada
- dated technology
- spoiled ballots not detected until they reach the counting area
- ballots must be transported to the central counting area for tabulation

Due to delays in reporting of timely results, the need to reduce labour and preparation time, and the lack of a backup site as previously indicated, the Votomatic Punch Card System - Central Count will no longer meet the needs of the City of Mississauga unless some investment is made to upgrade and prepare the system, and to acquire additional equipment for the setup of a backup facility. Costs are unknown at present time.

VOTOMATIC PUNCH CARD SYSTEM - POLL COUNT

How It Works

Each polling location requires a poll count unit in addition to the vote recorder. The elector marks the ballot in the traditional Votomatic method. When voting is completed, the elector removes the ballot from the vote recorder, exits the voting booth and proceeds to the unit where the ballot is deposited. The ballot may be inserted in any orientation with the stub attached. The unit immediately records and tallies the ballot and provides an audio-visual confirmation that the ballot has been accepted and processed properly. At the close of the polls, the assigned election worker generates a "totals" tape by pressing the "print totals" button. The totals are transferred to the central counting area (Civic Centre) via modem.

This system is an upgrade to the current Votomatic Punch Card System - Central Count. The system is currently being used in the United States.

This upgrade would solve the issue of attaining timely results but would not address nor solve the labour intensity of the system. The ballot is a computer punch card designed to be counted by card readers. The system can recount the punch cards if required, however if a manual count is required it would be very time consuming and costly, with a significant risk of error.

Advantages

- upholds the integrity and confidentiality of the election process
- results are timely and accurate
- automated recount is rapid and accurate
- spoiled ballots can be detected at the polls giving the elector the opportunity to correct the ballot
- ballots are counted at the polling locations,

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Disadvantages

- election preparation is very labour intensive
- sole user in Canada
- dated technology
- manual recount is possible but would be very time consuming and costly
- units are fairly large, storage and transporting of the units may be an issue

With the City being the sole user of the system in Canada, additional equipment would be required to establish a backup facility. The cost of this backup equipment is not known. To implement and acquire the Votomatic Punch Card - Poll Count system will require a one-time startup cost of approximately \$1,700,000 - \$2,000,000.

OPTICAL SCAN - CENTRALIZED COUNT

How It Works

The election process for Optical Scan - Centralized Count is virtually the same as that used for the Votomatic - Central Count System with the exception of the marking of the ballot.

Optical Scan System - Central Count provides the elector with a ballot which is similar to a paper ballot. The elector is instructed to place a marking on the ballot adjacent to the candidate's name. There is no special equipment required to mark the ballot except for a pen provided in each voting booth.

After the polls close, the DRO removes the ballots from the ballot box, reconciles them, and prepares them for transfer to the counting area at the Civic Centre. At the Civic Centre, staff track and verify incoming ballots. When the ballots reach the counting area, the ballots are fed through high-speed scanners, and the votes are counted and totals displayed as ballots are received throughout the evening.

The ballots can be recounted either using the tabulating system or manually.

Advantages

- upholds the integrity and confidentiality of the election process
- results are very accurate
- automated recounts are rapid and accurate
- equipment preparation is less labour intensive

Disadvantages

- delayed results
- spoiled ballots not detected until they reach the counting area
- ballots must be transported to the central counting area to be counted
- the marking of the ballot by the elector can be open to interpretation

This process is comparable to the existing Votomatic Punch Card System - Central Count. Results are still delayed because ballots must be transported to the central counting area. To acquire and implement this system will require a one-time startup cost of approximately \$500,000 - \$1,000,000.

OPTICAL SCAN - POLL COUNT

How It Works

An optical scan unit is provided at each polling location. The elector is provided with a ballot, similar to a paper ballot, and with a secrecy folder. The elector marks the ballot, places it into the secrecy folder and proceeds to the unit. The election worker operating the unit verifies the ballot and the ballot is then fed into a scanner. The unit immediately records and tallies the ballot and provides an audio-visual confirmation that the ballot has been accepted and processed properly. All numbers are stored on the unit until the close of the polls.

At the close of the polls the total number of ballots is reconciled and the unit is activated to tabulate the totals. Once the hard copy is printed, the results are transferred to the central counting area (Civic Centre) via modem.

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Advantages

- upholds the integrity and confidentiality of the election process
- results are timely and accurate
- automated recount is rapid and accurate
- equipment preparation less labour intensive
- spoiled ballots can be detected at the polls giving the elector the opportunity to correct the ballot
- ballots are counted at the polling locations

Disadvantages

- the marking of the ballot by the elector can be open to interpretation

This system addresses the needs of upholding the integrity of the process, attaining timely and accurate results, and ease of use for both the elector and administrative staff. To implement and acquire this system there will be a one-time startup cost of approximately \$1,700,000- \$2,000,000.

NEXT STEP

The next step in the process is to issue a Request For Proposal consistent with the City's purchasing process. Responses to the proposal will be evaluated to determine the most cost-effective solution that best meets the City's needs.

Various municipalities across Ontario are undergoing this process and staff will monitor their efforts. For example, the City of Toronto recently announced that they have chosen to use the Optical Scan - Poll Count System for the next municipal elections.

CONCLUSION:

The City of Mississauga has used the Votomatic Punch Card Central Count Election Ballot Tabulation process since the 1980 election. During this time, the system was the most advanced method of casting and tallying ballots.

With recent advancements in technology and changes in legislation to permit the use of alternative voting methods, a project team of City Clerk and Information Technology staff undertook a review of the following eight alternative voting methods:

- Touch Screen
- Mail-in Voting
- Televoting
- Paper Ballot
- Votomatic - Punch Card Centralized Count
- Votomatic - Punch Card Poll Count.
- Optical Scan - Centralized Count
- Optical Scan - Poll Count

The comprehensive evaluation was based on the following criteria:

- Security of System
- Security relating to Ballots
- Accuracy
- Elector Confidentiality
- Ease of Use for the Elector
- Administrative Impact
- Cost Implications (System)
- Cost Implications (Administration)
- Availability of Results (On Voting Day)
- Impact on election workers
- Special printing requirements
- System contingencies to deal with operational difficulties on Voting Day
- Recount issues
- Timely processing of high volumes

A table showing key advantages and disadvantages of each method (See Appendix "A"), and a Summary of Findings (See Appendix "B") is attached to this report. Based on the evaluation of the eight voting methods, the project team concluded that the following voting methods should not be pursued as viable solutions for the City of Mississauga.

1. Touch Screen - due to the amount of time required to cast a ballot, resulting in lineups at polling locations during peak periods, and the high cost of acquiring the system.
2. Mail-in Voting - due to concerns about the timeliness of delivery of packages to the electors, return of ballots for tabulation, the labour intensity of manually tabulating the results, the delays in reporting of results, and concerns about the integrity of the process.
3. Televoting - due to concerns that the supplier will not be able to process the volume of ballots cast at the City, and the integrity of the process.
4. Paper Ballot - due to the labour intensity of the method, which includes manual tabulation of the results, and the subsequent delay in reporting the results.

The project team however concluded that vendors should be asked to submit proposals for the implementation of one of the following voting methods:

1. Votomatic - Central Count - due to the accuracy of the results and the integrity of the process.
2. Votomatic - Poll Count - due to the timeliness and accuracy of the results, the integrity of the process and the opportunity for the Elector to correct a spoiled ballot.
3. Optical Scan - Central Count - due to the accuracy of the results and the integrity of the process.
4. Optical Scan - Poll Count - due to the timeliness and accuracy of the results, the integrity of the process, and the opportunity for the Elector to correct a spoiled ballot.

As part of the evaluation, staff will also investigate creative approaches for minimizing costs through options such as leasing or sharing equipment with other out-of-province municipalities, and by providing tabulation services. The requirement to look at only out-of-province municipalities is a result of all Ontario municipalities being legislated to conduct elections on the same date. If changes to the Municipal Elections Act could be made to allow Ontario municipalities to conduct their elections on different dates, this would create more opportunities for sharing election systems within the province, and ultimately reduce election costs.

Once a vendor is selected and negotiations completed, staff will report to Council describing the recommended voting system, along with a request for funding allocation to accommodate purchase of the new voting system in 1999.

RECOMMENDATION: That the Purchasing Agent be authorized to issue a Request for Proposals relating to the purchase or lease of the following voting systems:

Optical Scan - Centralized Count
Optical Scan - Poll Count
Votomatic - Centralized Count
Votomatic - Poll Count



Janice M. Baker, C.A.
Commissioner of Corporate Services and Clerk/Treasurer

Attachments

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GENERAL COMMITTEE AGENDA
AUG 4 1999

APPENDIX "A"

VOTOMATIC - CENTRAL COUNT	
ADVANTAGES	DISADVANTAGES
upholds the integrity/confidentiality of the process	delayed results
results are accurate	labour intensive
automated recount is rapid and accurate	sole user in Canada
	dated technology
	spoiled ballots not detected at the polls
	ballots must be transported to central counting area
	manual recount possible but time consuming & costly
VOTOMATIC - POLL COUNT	
ADVANTAGES	DISADVANTAGES
upholds the integrity/confidentiality of the process	labour intensive
results are accurate and timely	sole user in Canada
automated recount is rapid and accurate	dated technology
spoiled ballots detected at the polls	manual recount possible but time consuming & costly
ballots tallied at the polls	units fairly large- transportation & storage issues
electors have the opportunity to correct spoiled ballots	
OPTICAL SCAN - CENTRAL COUNT	
ADVANTAGES	DISADVANTAGES
upholds the integrity/confidentiality of the process	delayed results
results are accurate	spoiled ballots not detected at the polls
automated recounts are rapid and accurate	ballots must be transported to central counting area
less labour intensive	marking of the ballot is open to interpretation

APPENDIX "A"

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OPTICAL SCAN - POLL COUNT	
ADVANTAGES	DISADVANTAGES
upholds the integrity/confidentiality of the process	marking of the ballot is open to interpretation
results are accurate and timely	
automated recounts are rapid and accurate	
less labour intensive	
spoiled ballots can be detected at the polls	
ballots tallied at the polls	
TOUCH SCREEN	
ADVANTAGES	DISADVANTAGES
upholds the integrity/confidentiality of the process	storage and transportation of units
results are accurate and timely	not a traditional (hardcopy) ballot
less labour intensive	possibility of lineups
fewer poll workers required	highest cost to acquire/implement
fewer supplies required	
MAIL-IN	
ADVANTAGES	DISADVANTAGES
ease of use for elector	integrity/confidentiality of the process not ensured
convenient for elector	unsupervised voting
traditional means of marking ballot	no control over mailed ballots
eliminate voting locations	logistical problems, ballots arriving after voting deadline
poll workers not required	large tabulating team required at the close of the polls
	delayed results
	tight deadlines when preparing ballots
	marking of ballot open to interpretation

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APPENDIX "A"

TELEVOTING	
ADVANTAGES	DISADVANTAGES
results are accurate and timely	integrity/confidentiality of the process not ensured
recounts are rapid and accurate	unsupervised voting
ease of use for elector	no control over PIN numbers that are mailed out
convenient for elector	vendor may not be able to service Mississauga
no polling locations	no traditional (hardcopy) ballot
poll workers not required	

PAPER	
ADVANTAGES	DISADVANTAGES
upholds the integrity/confidentiality of the process	Delayed results
	Increase poll workers
	spoiled ballots not detected at the polls
	recount is time consuming and costly
	marking of ballot open to interpretation

Summary of Findings

APPENDIX "B"

Voting Method Evaluation Criteria	Mail- in	Optical Scan -Central Count	Optical Scan - Poll Count	Paper Ballot	Televoting	Touch Screen	Votomatic - Central Count	Votomatic - Poll Count
System Security	N	Y	Y	Y	N	N	Y	Y
Security of Ballots	N	Y	Y	Y	Y	Y	Y	Y
Accuracy	N	Y	Y	N	Y	Y	Y	Y
Elector Confidentiality	N	Y	Y	Y	N	Y	Y	Y
Ease of Use (Elector)	Y	Y	Y	Y	Y	N	Y	Y
Minimal Admin. Effort	N	N	Y	N	Y	Y	N	Y
Cost Effectiveness (System)	Y	Y	N	Y	N	N	Y	N
Timely results (Voting Day)	N	N	Y	N	Y	Y	N	Y
Minimal Election Worker Effort	N	N	Y	N	Y	Y	N	Y
Eliminates Special Printing requirements	Y	N	N	Y	Y	Y	N	N
System contingencies available	N	Y	Y	N	N	Y	Y	Y
Accurate, timely recount process	N	Y	Y	N	Y	Y	Y	Y
Can process high volume of ballots in a timely manner	N	N	Y	N	N	N	N	Y
Cost Effectiveness (Admin.)	N	N	Y	N	Y	Y	N	Y
Totals (All Criteria)	3	8	12	6	9	10	8	12
'N'	11	6	2	8	5	4	6	2
Totals (Critical Criteria)	2	7	9	4	6	7	7	9
'N'	8	3	1	6	4	3	3	1

Legend: 'Y' - Method fully satisfies criteria; 'N' - Method does not satisfy criteria
Bolded criteria are considered critical.