HALIFAX
REGIONAL MUNICIPALITY

Item No.   4
Halifax Regional Council
October 27, 2009

TO: Mayor Kelly and Members of Halifax Regional Council

SUBMITTED BY: _____

Geri Kaiser, Deputy Chief Administrative Officer - Corporate Services and Strategy

DATE: October 16, 2009

SUBJECT: District 6 Special Election

INFORMATION REPORT

ORIGIN

A Special Election was conducted on September 19, 2009 in District 6-East Dartmouth-The Lakes to fill a vacancy for district councillor.

BACKGROUND

During the 2008 Municipal and School Board Elections, HRM implemented a limited four-day advanced electronic voting option. The overall voter participation rate in October was 36.2% with 28.4% of the total who voted choosing to cast their ballot either by internet or telephone.

A vacancy on Regional Council occurred on June 9, 2009 in District 6-East Dartmouth-The Lakes due to the election of the Councillor to the Nova Scotia House of Assembly.

On June 30, 2009, Council approved the use of internet and telephone voting from the first day of advanced voting up to and including election day for the Special Election in District 6. In addition to the in-person polls located at the East Dartmouth Community Centre, this election was conducted with a real-time electronic voting option. The intent of the full E-voting pilot was to enable staff and Council to determine:
- if providing an electronic voting option up to and including election day would have an impact on voter turnout
- and, to identify what would be necessary to implement a fully integrated in-person and electronic voting option for the full municipal election in 2012 should Council so wish

Electronic voting services are provided to HRM under a three-year price agreement with Intelivote Systems Incorporated located in Burnside. As with the 2008 election, a specified and detailed audit of the electronic voting procedures and securities was conducted during the election (Appendix A). There were no issues with the system, securities or procedures and the integrity of the vote was fully verified.

DISCUSSION

Traditionally voter turnout for special elections has been low. In 1998 for a special election in District 14, voter turnout was 36.9% which was the highest turnout in an HRM special election. More recently in the Bedford Special Elections of 2006 and 2008, voter turnout was 27.1% and 21.5% , and in the 2007 District 8 Special Election, voter turnout was 10.2%. Voter participation in municipal and school board elections also have been declining with overall participation rates in 2000 at 43%, in 2004 at 48% (due to the Sunday Shopping Plebiscite) and in 2008 at 36%.

Official results (Appendix B) for the Special Election held in District 6 report a 35.2% overall voter turnout with 74.2% of those who voted voting electronically. Voter participation for the special election in District 6 appears to confirm that offering voters an alternative option, such as internet and phone voting through to election day, can have a positive impact on voter participation.

Voter trends show that voting remained steady during the entire voting period with the highest participation rates being on the first day of E-voting advanced poll with 18% of voters casting their ballots, as well as on election day with 23% of voters casting their ballots.
Another trend indicates that engaging younger voters (under 35) continues to be challenging.

A full demographic and statistical analysis for the E-voting period is shown in Appendix C of this report.

Cost drivers for the election were IT equipment and support for the in-person poll location, staffing the poll location with staff trained in the use of a real-time electronic electors list in the related technology, and increased advertising.

Implications for the 2012 Election
A fully integrated in-person and electronic ballot for the 2012 Municipal and School Board Election will require that all in-person poll locations have internet connection and computer terminals to access a real-time electors list and that election workers be trained to do on-line verification from a real-time electors list.

BUDGET IMPLICATIONS
Council approved a withdrawal from the election reserve of $85,000. The cost of conducting the District 6 Special Election was $84,892.

Budget Summary: Reserve Q313 Municipal Election Reserve

Uncommitted Balance	$658,897
Previously Approved Withdrawal	$ (84,892)
Projected Balance March 31, 2010	$574,005

There are no further budget implications at this time. Staff will be preparing a detailed analysis of costs associated with a fully-implemented electronic voting option for future elections and will bring forward a full financial analysis and recommedations in advance of the 2012 Municipal and School Board Election in order to ensure adequate funds are made available within the Election Reserve.

FINANCIAL MANAGEMENT POLICIES/BUSINESS PLAN
This report complies with the Municipality's Multi-Year Financial Strategy, the approved Operating, Capital and Reserve budgets, policies and procedures regarding withdrawals from the utilization of Capital and Operating reserves, as well as any relevant legislation.

ATTACHMENTS
Appendix A: Specified Procedures Audit for the Special Election-District 6-East Dartmouth-The Lakes
Appendix B: Official Results for Councillor District 6
Appendix C: Election Statistics-Intelivote Sytems Inc.

A copy of this report can be obtained online at http://www.halifax.ca/council/agendasc/cagenda.html then choose the appropriate meeting date, or by contacting the Office of the Municipal Clerk at 490-4210, or Fax 490-4208.

Report Prepared by: Linda Grant, Returning Officer, Municipal Clerks Office, 490-8683
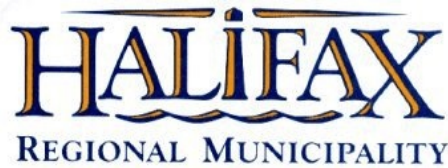
Report Approved by: _____

                      Cathy Mellett, A/Municipal Clerk, Municipal Clerks Office, 490-6456

Halifax Regional Municipality

Electronic Voting - 2009 Special Election

Final Report

September 25, 2009

REPORT ON RESULTS OF APPLYING SPECIFIED PROCEDURES ON THE ELECTRONIC VOTING SYSTEMS USED DURING THE HALIFAX REGIONAL MUNICIPALITY SPECIAL ELECTION FOR COUNCILLOR, DISTRICT 6, 2009.

To the Returning Officer
Halifax Regional Municipality

The Business Systems and Control Group with the Halifax Regional Municipality provided testing surrounding the procedures detailed in Appendix 1 (Detailed Testing) in connection with the electronic voting systems used during the Special Election for Councillor 2009.

The results of these tests are set out Appendix 1. BSC undertook independent testing of the data validation, electronic voting and reporting processes as defined by the Reporting Officer.

The tests conducted by BSC were limited in nature and not intended to, nor do they, represent any processes or procedures conducted outside of the September 12th, to September 19th, 2009 Special Election period.

David Marr
Business Consultant
Business Systems and Control

Catherine Osborne, CGA, CMM
Manager
Business Systems and Control

Halifax, Nova Scotia
September 25, 2009

Memorandum

To: Linda Grant, Returning Officer,
         Halifax Regional Municipality

cc: Dan English, Chief Administrative Officer,
         Halifax Regional Municipality

         Cathy Mellett, Assistant Returning Officer
         Halifax Regional Municipality

From: David Marr, Business Consultant, Business Systems and Control

Date: September 28, 2009

Re: Final Report - Testing Electronic Voting - Special Election 2009

As set out and agreed to in the Term of Reference ("TOR") dated July 27, 2009, Business Systems and Control conducted a series of tests surrounding "Electronic Voting - for the 2009 Special Election".

The enclosed table ("Appendix 1") of test results are based on the tasks from the Terms of Reference.

Introduction

This report, prepared for the Returning Officer, represents the final report after the completion of the 2009 Special Election. This report will summarize the results of the specific procedures conducted by Business Systems and Control ("BSC") relating to the Special Election. This report includes all testing conducted by BSC prior to, during and post Election.

Project Scope

Building upon the procedures[1] developed for the fall 2008 election, modifying them to allow for internet and telephone voting to occur for the duration of the Advance Poll up to and including the close of the Regular Poll on September 19, 2009, BSC has conducted tests and procedures to validate accuracy, completeness and security of the internet and telephone voting processes.

Summary of Findings

No significant areas of concern have been noted during the course of the testing period.

Specific Findings

The specific results for individual tests are summarized in the attached table.

Recommendations

1. A full set of documented procedures for all aspects of electronic voting within Halifax Regional Municipality's jurisdiction should be produced.   This recommendation comes from Test #8 were procedures were established and followed, but not committed to documentation.

2. Secured facilities, within any future Election office, should be available for only Election staff and Election equipment staging and storage between poll dates. This recommendation stems from Test #25.

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[1]   Original procedures developed for the 2008 Municipal Election with the Returning Officer and modified by HRM Election Office for 2009 Special Election.

Conclusions

Throughout the conduct of this review many HRM staff provided assistance to the review team, gathering information, providing explanation and discussing issues. In particular, information was readily provided by Election and BPIM Staff. Additionally information from the electronic voting system, Intelivote, and their staff was always timely and readily provided. The team would like to sincerely thank these employees and vendor for their support, cooperation and professionalism during the course of the review.

Test Results - Appendix 1							
			Test Period				
Test #	Procedure	Results	Pre 2009/09/12	Advance Poll Period	Election Day	Post Election	PASS
1	Review Provincial (PONS) Data Extract and Data Load to Intelivote are identical. Compare the total number of records, Name, Address, Date of Birth and District fields for all records in the 2 data extracts.	12,674 records were on the original data set provided to Intelivote from HRM. Inspection on 2009/08/17 showed 12,684 records. The difference of 10 records were identified and flagged in the system as legitimate additions after the transfer.	X				Yes
2	Using the PONS data extract, randomly select a sample of 25 records and visually compare on screen that the Name, Address, Date of Birth, and District is consistent with original data from PONS.	Test completed 2009/08/31. No issues found in sample.	X				Yes
3	Using the PONS data extract compare the total number of records in the data extract and visually compare on screen to the total number of records in the Intelivote system.	Test completed 2009/08/21. No issues found in sample. Extract balanced with Intelivote records with deleted/disabled flag.	X				Yes
4	Using the HRM data extract, calculate the potential number of duplicate records by performing the following:	Tests completed 2009/07/28.	X				Yes
5	Sub-Procedure A – Calculate the number of records with the identical full last name, full first name and date of birth.	14 duplicate records were identified. These results mirrored Intelivote's.	X				Yes
6	Sub-Procedure B – Calculate the number of records with the identical full last name, first initial of the first name and date of birth	26 duplicate records were identified. These results mirrored Intelivote's.	X				Yes
7	Sub-Procedure C – Calculate the number of records with the identical main address and date of birth	46 duplicate records were identified. These results found 3 additional records over that of Intelivote's, however the additional records were picked up in Sub A and/or B as well. Duplicate records were corrected by HRM Elections Office and PINs disabled and not issued for the duplicated records	X				Yes

Test Results - Appendix 1

Test #	Procedure	Results	Pre 2009/09/12	Advance Poll Period	Election Day	Post Election	PASS
			Test Period				
8	Obtain e-enumeration process from Returning Officer, validate change requests to file, from source document	The electronic enumeration process existed but had not been committed to paper when BSC asked the Returning Officer. The Intelivote system logs all user activity and changes, this was confirmed by Intelivote, and review of data extracts.	X				Yes
9	Review contingency plans should electronic polls need to be shutdown during advance poll and/or election day	Documentation regarding contingency plans for a failure in technology was provided and reviewed.	X				Yes
10	Inspect the confirmation from the mail out Vendor. Compare the confirmed total number of envelopes mailed to the recorded number of HRM voters in the HRM data extract.	12,488 names were provided to printer for mail prepartion. 12,486 pieces of mail were processed. The difference of two were identified to the RO by the vendor as having incorrect postal information. The two records with incorrect postal information were manually processed.	X				Yes
11	Inspect the data file sent to vendor for mail out for disabled PINs.	File contained only valid, non disabled voter reocrds. PINs were issued only to active entries in data file.	X				Yes
12	Observe that all 4 Test Account PINS were included in the mail out and note the date the mail was received.	All Audit letters, inserted into the mail out file, were delivered on the date expected.	X				Yes
13	Obtain an extract of PINS generated from the Intelivote information system. "Look For Duplicates" function, identify whether duplicate PINs exist in the data extract.	There were no duplicate pins noted.	X				Yes
14	Obtain a listing of all system users who can access the electronic voting system (application, operating system and database).	List provided to BSC 2009/09/20.	X				Yes

Test Results - Appendix 1

Test #	Procedure	Results	Pre 2009/09/12	Advance Poll Period	Election Day	Post Election	PASS
15	Obtain representation from the HRM Project Manager (application) and Intelivote System Representative (database and operating system) that those listed users are appropriate.	Verified with Returning Officer that the list of systems access was valid and appropriate.	X				Yes
16	Using a Test Account, log onto the electronic voting system via telephone to attempt to cast votes prior to the advance polling period.	Voting through Public Channel not allowed. Using bypass code test votes were cast.	X				Yes
17	Public Channel: Attempt to log onto the electronic voting system via telephone to attempt to cast votes prior to the advance polling period.	Successful access to test system granted with Audit Pins. Test votes cast and recorded without issue.	X				Yes
18	Using a Test Account, log onto the electronic voting system via Internet to attempt to cast votes prior to the advance polling period.	Access denied to Public Channel in advance of event. Test Votes cast using Auditor profile.	X				Yes
19	Public Channel: Attempt to log onto the electronic voting system via Internet to attempt to cast votes prior to the advance polling period.	Successful access to test system granted with Audit Pins. Test votes cast and recorded without issue.	X				Yes
20	Obtain a listing of all candidates from HRM. Using Test Accounts:	Access denied to Public Channel in advance of event.	X				Yes
21	Sub-Procedure A - Visually inspect that all candidate names are set up in the Internet system.	All candidate names match documention provided by Returining Officer.	X				Yes
22	Sub-Procedure B - Listen and validate that the candidate names are audible/ set up in the IVR system.	All audible representation of candidate names are clear and match documentation provided by Returning Officer.	X				Yes
23	Attempt to log onto the IVR and Internet system with a PIN that is set to Rogue status.	Access to election system denied, with non descript message, with "rogue" PIN using both the IVR and WEB channels		X			Yes
24	Test Voter help line for compliance with policy	Calls to and on site inspection with Voter Help line complied with established policies.		X			Yes

Test Results - Appendix 1

Test #	Procedure	Results	Pre 2009/09/12	Advance Poll Period	Election Day	Post Election	PASS
				Test Period			
25	At HRM Elections Central, observe that an alarm system has been installed and is enabled for the building or the area where election support terminals are housed.	A building wide security system is in place. The top floor, where the elections workers are located, is not isolated by locked door from the main building.		X			Yes
26	Visit HRM Elections Central four times during the electronic advanced polling period, observe instances of people entering or exiting the premises and validate that only authorized people with HRM identification are allowed to enter and that visitors are escorted upon entering and are required to log time in and out.	Building is secured with restricted access. Guests must be met and signed in. Storage area for election equipment / supplies further restricted within a locked room.		X			Yes
27	Obtain a list of all personnel with access to HRM Elections Central. Obtain representation from HRM Project Manager that those users are authorized and their access levels are appropriate.	Representation obtained that the individuals having access to the facility and elections systems were appropriate.		X			Yes
28	Test Candidate Module for access, features and lock down	Module tested for access and security. Each candidate's access is unique to their representation of the data.		X			Yes
29	Using Test Accounts, cast a vote for each candidate using the IVR system. Observe that a vote could be cast for each candidate.	From the Audit PINs successful votes were cast for all candidates. No more than a single candidate could be voted in any session.		X	X		Yes
30	Using Test Accounts, cast a vote for each candidate using the Internet system. Observe that a vote could be cast for each candidate.	From the Audit PINs successful votes were cast for all candidates. No more than a single candidate could be voted in any session.		X	X		Yes
31	Using a Test Account that has already been used to cast a vote, observe whether additional votes can be cast and recorded in the IVR system.	Unable to validate PINs on IVR system.		X	X		Yes
32	Sub-Procedure A: Attempt to vote for the same candidate as the original vote.	Unable to validate PINs on IVR system.		X	X		Yes
33	Sub-Procedure B: Attempt to vote for a different candidate in the same race.	Unable to validate PINs on IVR system.		X	X		Yes

Test Results - Appendix 1

Test #	Procedure	Results	Test Period				PASS
			Pre 2009/09/12	Advance Poll Period	Election Day	Post Election	
34	Using a Test Account that has already been used to cast a vote, observe whether additional votes can be cast and recorded in the electronic voting system via the Internet system.	Unable to validate PINs on WEB based voting system.		X	X		Yes
35	Sub-Procedure A: Attempt to vote to the same candidate as the original vote.	Unable to validate PINs on WEB based voting system.		X	X		Yes
36	Sub-Procedure B: Attempt to vote for a different candidate in the same race.	Unable to validate PINs on WEB based voting system.		X	X		Yes
37	Using a computer that was already used to cast a complete electronic voting session, conduct two additional complete electronic voting sessions from the same computer using unused voter credentials. Observe whether the Internet system will record the electronic votes from three unique Test Accounts using the same device.	From the Audit PINs successful votes were cast for all candidates. No more than a single candidate could be voted in any session. Multiple sessions could be initiated from a single computer, and voting occurred as expected.		X	X		Yes
38	Sub-Procedure A: Using a Test Account, complete an electronic voting session by voting in all eligible races using the Internet system.	From the Audit PINs successful votes were cast for all candidates. No more than a single candidate could be voted in any session.		X	X		Yes
39	Sub-Procedure B: Using the same Test Account, attempt to use the IVR system to conduct an additional complete electronic voting session by voting for the same candidates as voted for using the Internet system. Observe whether additional votes can be cast for those candidates.	Unable to validate previously used PINs.		X	X		Yes
40	Sub-Procedure A: Using a Test Account, complete an electronic voting session by voting in all eligible races using the IVR system.	From the Audit PINs successful votes were cast for all candidates. No more than a single candidate could be voted in any session.		X	X		Yes

Test Results - Appendix 1

Test #	Procedure	Results	Test Period				PASS
			Pre 2009/09/12	Advance Poll Period	Election Day	Post Election	
41	Sub-Procedure B: Using the same Test Account, attempt to use the Internet system to conduct an additional complete electronic voting session by voting for the same candidates as voted for using the IVR system. Observe whether additional votes can be cast for those candidates.	Unable to validate previously used PINs.		X	X		Yes
42	Using a Test Account, begin an IVR system voting session.	PIN credentials accepted, no vote conducted.		X	X		Yes
43	Using a different physical telephone, attempt to log onto the IVR system using the same set of credentials and observe whether the system will allow the log on.	Unable to validate previously used PINs.		X	X		Yes
44	Using a Test Account, begin an Internet system voting session.	PIN credentials accepted, no vote conducted.		X	X		Yes
45	Using a different physical computer, attempt to log onto the Internet system using the same set of credentials and observe whether the system will allow the log on.	Unable to validate previously used PINs.		X	X		Yes
46	Using a Test Account, begin an Internet system voting session and attempt to select multiple candidates for the district. Observe whether the system will allow multiple candidates to be selected.	From the Audit PINs successful votes were cast for all candidates. No more than a single candidate could be voted in any session.		X	X		Yes
47	Verify Intelivote Kiosk - hardened mode	Kiosks are locked down preventing any use other than voting.		X	X		Yes
48	At Poll attempt to vote voided PIN.	Not allowed. PIN was identified as voided.		X	X		Yes
49	At Poll attempt to vote a voted PIN. Vote from phone, then visit poll.	Not allowed. PIN was identified as participated.		X	X		Yes
50	Public Channel: Attempt to log onto the IVR system to attempt to cast votes after regular polling period has ended.	Attempted both the IVR and WEB channels just past 1900 hrs on 2009/09/19. Both channels were unavailable.				X	Yes
51	Public Channel: Attempt to log onto the Internet system to attempt to cast votes after regular polling period has ended.	Attempted both the IVR and WEB channels just past 1900 hrs on 2009/09/19. Both channels were unavailable.				X	Yes

Test Results - Appendix 1

Test #	Procedure	Results	Pre 2009/09/12	Advance Poll Period	Election Day	Post Election	PASS
				Test Period			
52	At the close of the electronic advance and regular polling period, observe the following: Appropriate transfer of results	Intelivote encrypted a file containing the electronic polling results. The encrypted disk and separate key were provided to A/RO.				X	Yes
53	At the close of the electronic advance and regular polling period, observe the following: Posting of Results	Results were recorded, verified and posted to the HRM web site.				X	Yes
54	Using the Election Close Files - observe whether all Test Account voting activity has been eliminated from the final electronic advanced polling results.	A review of the election activity shows that all Audit voting had been eliminated from the final electronic voting results.				X	Yes
55	After close of polls attempt to cast a vote using both the e-vote and telephone channel.	Attempted both the IVR and WEB channels just past 1900 hrs on 2009/09/19. Both channels were unavailable.				X	Yes
56	After close of polls verify List of Electors file returned to Elections Nova Scotia contains original records, additions, with no records deleted.	Examination for known changes and/or deletions indicates records are flagged but remain in file for transmission. For example records noted as duplicated in step 5,6 &7 remained on file but appropriately flagged for Elections NS.				X	Yes

OFFICIAL RESULTS

For: **Halifax Regional Municipality**

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District 6 – East Dartmouth – The Lakes

Poll	Table	Rejected Ballots	Eligible Voters	Total Votes	% Turnout	ALLEN, Robin L.	BROWN, Phil	DAFOE, Shane	DEVEREAUX, Tracey	FISHER, Darren	MCMILLAN, John	WARSHICK, Brian
0601 East Dartmouth Community Centre	1	0		260	2.08%	17	34	3	35	118	4	49
	2	0		325	2.61%	9	41	6	49	141	6	73
	3	0		239	1.92%	6	29	7	32	113	3	49
06APE Electronic Voting	1	5		3259	26.12%	143	226	52	655	1476	82	625
06AP1 East Dartmouth Community Centre	1	1		159	1.27%	8	10	6	26	77	3	29
	2	0		149	1.19%	4	9	4	29	69	3	31
Total (Candidate)						**187**	**349**	**78**	**826**	**1994**	**101**	**856**
District Totals:		**6**	**12476**	**4391**	**35.20%**	**4.26%**	**7.96%**	**1.78%**	**18.84%**	**45.47%**	**2.30%**	**19.52%**

*Rejected Ballots are ballots which were cast but not counted.

I certify that the foregoing statement is the correct result of the polling at the election held on the (19 of September 2009)

_September 23, 2009_____

Dated at Halifax, Nova Scotia

Linda Grant, Returning Officer

Halifax Regional Municipality - District 6 By Election 2009

	Information Base	Number	%
1	Number of eligible electors setup in system.	12,476	
2	Number of electors who cast at least one ballot.	4,397	
3	Participation rate.	35.2%	
4	Voters who cast paper ballots.	1,133	25.8%
5	Voters who cast their ballot electronically.	3,264	74.2%
6	Voters who are female and voted electronically.	1,749	53.6%
7	Voters who are male and voted electronically.	1,515	46.4%
8	Voters who cast their ballot electronically via the Internet.	2,604	79.8%
9	Voters who cast their ballot electronically via the phone.	660	20.2%
10	Average amount of time a voter spent voting using the internet.	43 seconds	
11	Average amount of time a voter spent voting using the telephone.	52 seconds	
12	Voters entering credentials a second time after successfully voting	95	2.9%
13	Total internet votes from outside Canada (Spain-2, Sweden, Norway).	4	
14	Total phone votes cast from outside Nova Scotia.	4	
15	Total Internet votes from outside Nova Scotia (majority from Universities)	56	
15	CO_2 carbon emmissions reduction - result of voters not using vehicles.	1,632 kilograms	

Age Breakdown of Who Voted

Age	ELIG.	VOTED	WEB	IVR	MAN	% Part.
18-19	137	52	42	4	6	38.0%
20s	1,595	253	191	35	27	15.9%
30s	1,926	407	314	40	53	21.1%
40s	2,715	898	644	93	161	33.1%
50s	2,641	1,058	701	137	220	40.1%
60s	1,655	836	464	130	242	50.5%
70s	1,134	650	192	147	311	57.3%
80s	510	226	53	67	106	44.3%
90s	70	16	3	7	6	22.9%
UK*	93	1	0	0	1	1.1%
Total	12,476	4,397	2,604	660	1,133	35.2%

*UK = Unknown age - not listed on elector's list.

E-voting period September 12th, 2009 - 8am until 7pm on September 19th.

Methods of E-Voting by Age

All Ages Methods of Voting
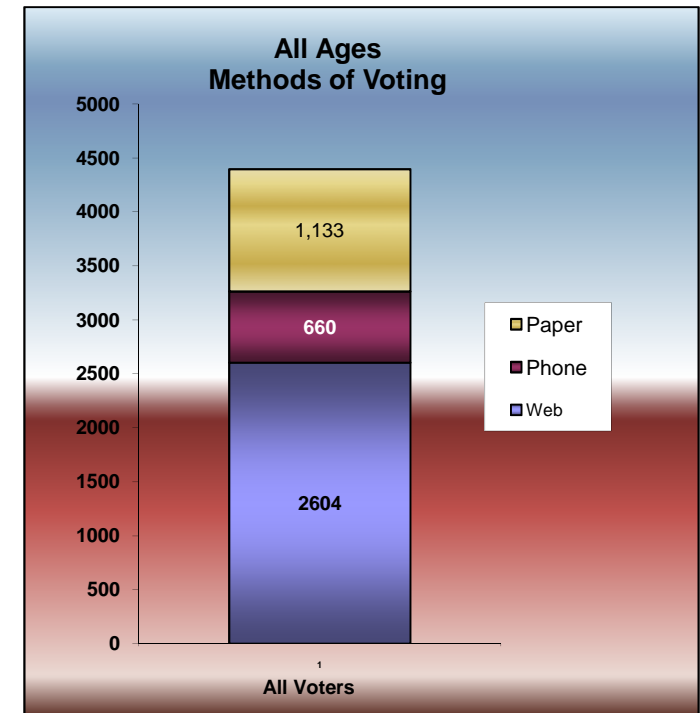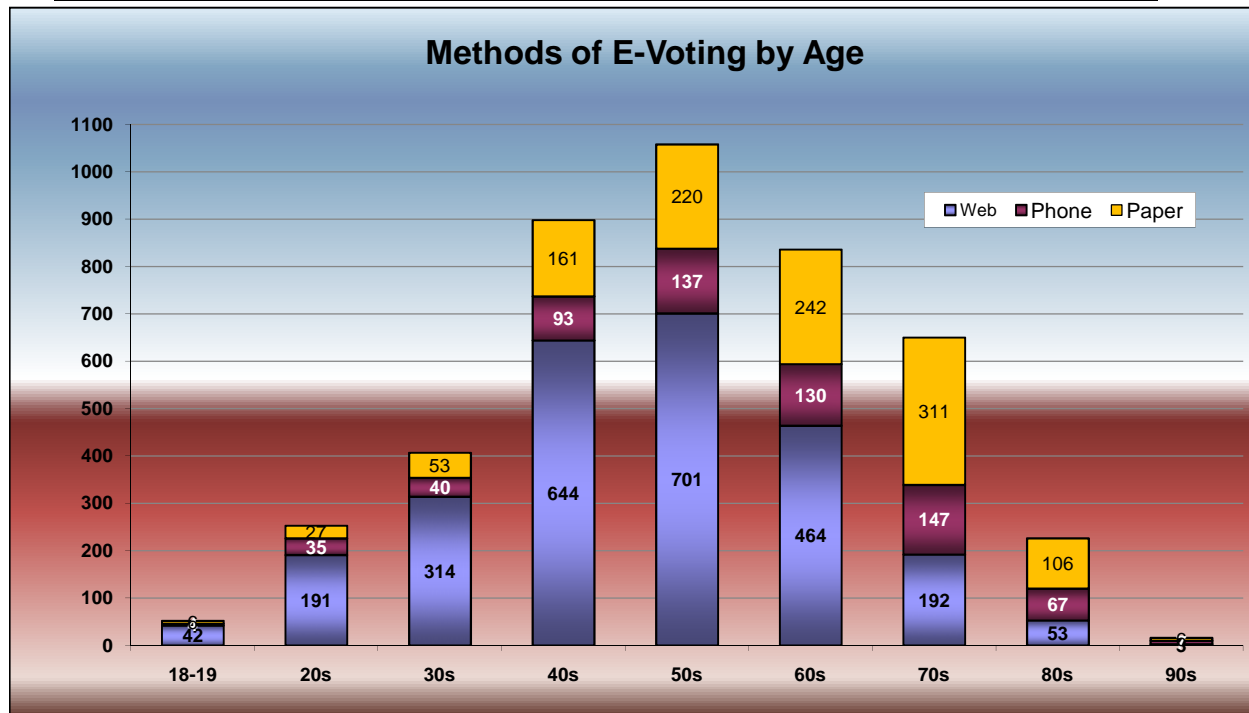
2008 Municipal and School Board Election
Election Statistics - Intelivote Systems
Municipality - HRM Activity

Halifax Regional Municipality - District 6 Special Election 2009											
Session Hr.	M-6am	6am-7am	8am-9am	10am-11am	12pm-1pm	2pm-3pm	4pm-5pm	6pm-7pm	8pm-9pm	10pm-11pm	Total	% Sessions
Sat-12-Sep	0	0	105	114	127	89	58	54	26	10	583	18%
Sun-13-Sep	2	2	24	61	56	41	38	44	33	3	304	9%
Mon-14-Sep	7	3	41	33	40	30	43	46	58	16	317	10%
Tue-15-Sep	3	7	35	40	50	45	39	71	41	7	338	10%
Wed-16-Sep	2	7	38	42	24	30	46	45	44	8	286	9%
Ths-17-Sep	3	6	25	36	23	18	39	42	56	23	271	8%
Fri-18-Sep	5	10	40	47	49	52	69	63	55	34	424	13%
Sat-19-Sep	4	7	80	158	142	111	147	92	0	0	741	23%
Total	26	42	388	531	511	416	479	457	313	101	3264	100%
	0.8%	1%	12%	16%	16%	13%	15%	14%	10%	3%	100%	

Note: A vote session is defined as a connection to the system where a person entered valid voter credentials. This includes audit votes and voters returning to the system additional times to try to re-vote. This number does not equal the valid votes cast but rather is an indication of connection activity by hour and day to the system.

Vote Sessions by Time of Day

Voter Activity by Date
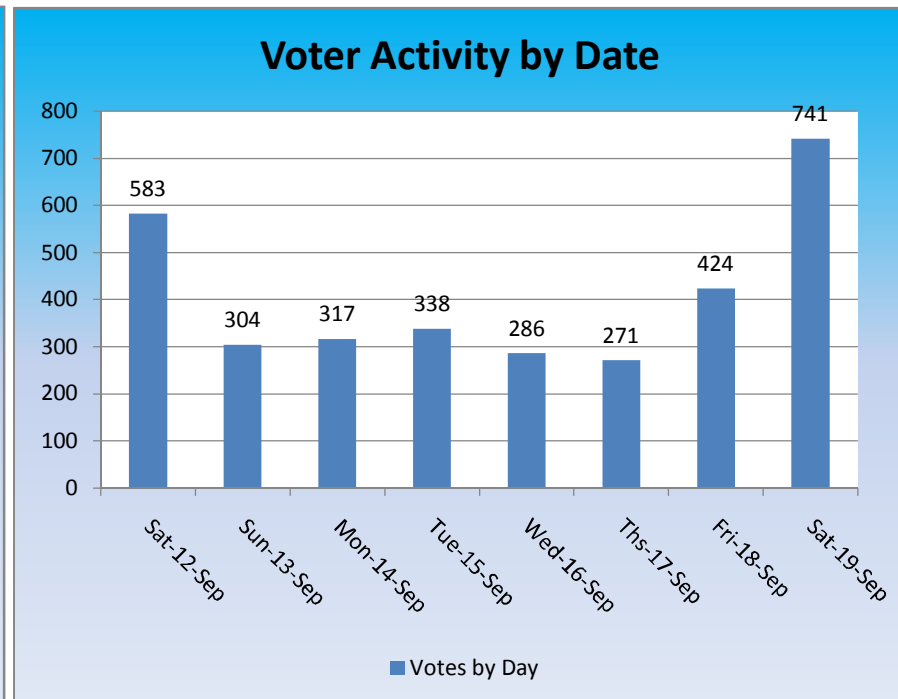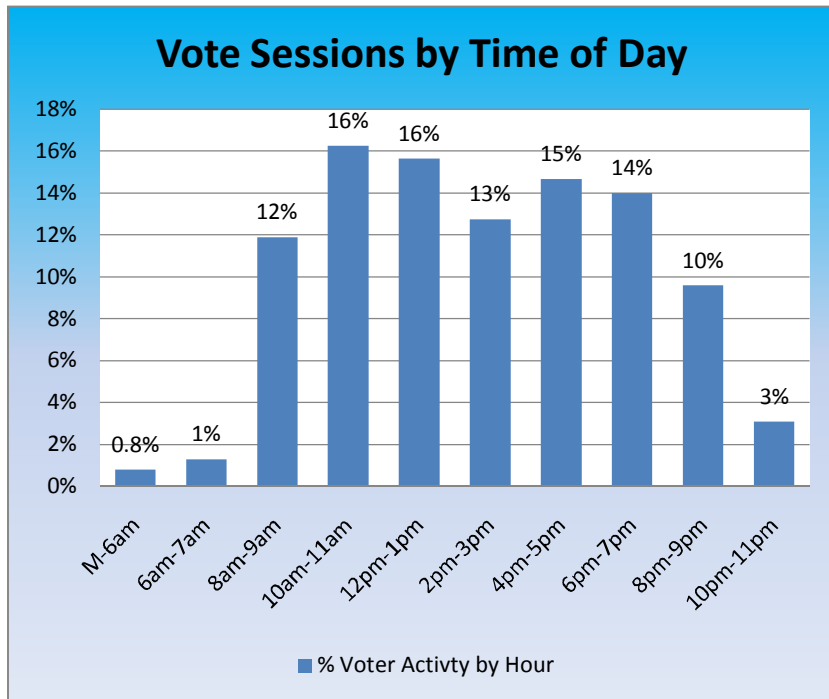
Age	ELIGIBLE	VOTED	% VOTED	MANUAL	% Man.	EVOTE	% Evote	WEB	% Web	IVR	% IVR
18-19	137	52	37.68%	6	11.5%	46	88.5%	42	91.3%	4	8.7%
20-29	1,595	253	15.41%	27	10.7%	226	89.3%	191	84.5%	35	15.5%
30-39	1,926	407	20.43%	53	13.0%	354	87.0%	314	88.7%	40	11.3%
40-49	2,715	898	32.35%	161	17.9%	737	82.1%	644	87.4%	93	12.6%
50-59	2,641	1,058	39.27%	220	20.8%	838	79.2%	701	83.7%	137	16.3%
60-69	1,655	836	49.67%	242	28.9%	594	71.1%	464	78.1%	130	21.9%
70-79	1,134	650	56.82%	311	47.8%	339	52.2%	192	56.6%	147	43.4%
80-89	510	226	43.38%	106	46.9%	120	53.1%	53	44.2%	67	55.8%
90-99	70	16	22.22%	6	37.5%	10	62.5%	3	30.0%	7	70.0%
Unknown	93	1	1.00%	1	100.0%	0	0.0%	0	0.0%	0	0.0%
Total	12,476	4,397	35.24%	1,133	25.8%	3,264	74.2%	2,604	79.8%	660	20.2%