	REF'D TO	COPY TO		REF'D TO	COPY TO
Mayor Tony Van Bynen			Development & Infrastructure Services, Commissioner of		
Reg. Councillor Taylor			Community Services, Commissioner of		
Councillor Vegh			Corporate Services, Commissioner of		
Councillor Kerwin			Planning & Building Services, Dir. of		
Councillor Twinney			Recreation & Culture, Dir. of		
Councillor Hempen			Human Resources, Dir. of		
Councillor Sponga			Engineering Services Dir. of		
Councillor Di Muccio			Public Works Services, Dfr. of		
Councillor Emanuel			Financial Services, Dir. of		
			Legal Services, Dir. of		
CAO			Legislative Services, Dir. of		
OTHER:			Corporate Communications, Dir. of		***
			Chief Building Official		
PENDING AGENDAS: COW			Economic Development Officer		
COUNCIL			Information Technology, Dir. of		
JCC			Fire Chief		
			Purchasing Manager		
Letter: File:			ORIGINAL REPORT IN DEPARTMENT BINDER	- J	

- 15. Corporate Services Joint Legislative Services & Information Technology Services Report 2013-43 dated November 29, 2013 regarding Voting Method Options, 2014 Municipal Election.
  - a) THAT Corporate Services Joint Legislative Services & Information Technology Services Report 2013-43 dated November 29, 2013 regarding Voting Method Options, 2014 Municipal Election be received and the following recommendations be considered at the January 13, 2014 Committee of the Whole meeting:
    - i) THAT Council endorse Option 2, "Use of Internet Voting" as outlined in this report for use in the 2014 municipal election;
    - ii) AND THAT a by-law be brought forward for consideration by Council to authorize the use of alternative voting equipment and an alternative voting method in the 2014 municipal election accordance with Section 42 1 (a) and (b) of the Municipal Elections Act, 1996;
    - iii) AND THAT the public be invited to comment on Joint Legislative Services & Information Technology Services Report 2013-43 in advance of the January 13, 2014 Committee of the Whole meeting and subsequent Council meeting where the report and authorizing by-law is considered.

	REF'D TO	COPY TO		REF'D TO	COPY
Mayor Tony Van Bynen		10	Development & Infrastructure Services, Commissioner of		
Reg. Councillor Taylor			Community Services, Commissioner of		
Councillor Vegh	i		Corporate Services, Commissioner of		
Councillor Kerwin			Planning & Building Services, Dir. of		
Councillor Twinney			Recreation & Culture, Dir. of		
Councillor Hempen			Human Resources, Dir. of		
Councillor Sponga			Engineering Services Dir. of		
Councillor Di Muccio			Public Works Services, Dir. of		
Councillor Emanuel			Financial Services, Dir. of		
			Legal Services, Dir. of		
CAO			Legislative Services, Dir. of		
OTHER:			Corporate Communications, Dir. of		
			Chief Building Official		······································
PENDING AGENDAS: COW			Economic Development Officer		
COUNCIL			Information Technology, Dir. of		
JCC			Fire Chief		
			Purchasing Manager	<del></del>	
Letter: File:			ORIGINAL REPORT IN DEPARTMENT BINDER	$\overline{}$	

A recorded vote was requested.

In Favour: C

Councillor Emanuel, Councillor Vegh, Councillor Kerwin, Councillor

Twinney, Regional Councillor Taylor, Councillor Hempen, Councillor

Sponga, Mayor Van Bynen

Opposed:

Councillor Di Muccio

8 in favour, 1 opposed

Carried



TOWN OF NEWMARKET 395 Mulock Drive P.O. Box 328 Newmarket, ON L3Y 4X7

www.newmarket.ca info@newmarket.ca 905.895.5193

November 29, 2013

### CORPORATE SERVICES – JOINT LEGISLATIVE SERVICES & INFORMATION TECHNOLOGY SERVICES – 2013-43

TO:

Committee of the Whole

SUBJECT:

Voting Method Options, 2014 Municipal Election

ORIGIN:

Director, Legislative Services/Town Clerk & Director, Information Technology

### **RECOMMENDATIONS**

THAT Corporate Services – Joint Legislative Services & Information Technology Services Report 2013-43 dated November 29, 2013 regarding "Voting Method Options, 2014 Municipal Election" be received and the following recommendations be considered at the January 13, 2014 Committee of the Whole meeting:

- 1. THAT Council endorse Option 2, "Use of Internet Voting" as outlined in this report for use in the 2014 municipal election;
- 2. AND THAT a by-law be brought forward for consideration by Council to authorize the use of alternative voting equipment and an alternative voting method in the 2014 municipal election accordance with Section 42 1 (a) and (b) of the *Municipal Elections Act*, 1996;
- 3. AND THAT the public be invited to comment on Joint Legislative Services & Information Technology Services Report 2013-43 in advance of the January 13, 2014 Committee of the Whole meeting and subsequent Council meeting where the report and authorizing by-law is considered.

### COMMENTS

### Purpose

The report recommends a voting method to be used in the October 27, 2014 municipal election to be considered at the January 13, 2014 Committee of the Whole meeting to allow Members of Council and the public the opportunity to consider the recommendations in the report, and forward any questions or concerns to staff in advance of discussion by Council.

### Background

The Municipal Elections Act, 2006 (the Act) requires Council to authorize the use of any alternative voting equipment (such as optical scan vote tabulators, touch screen tabulators) and alternative voting methods (such as vote by mail, telephone voting or internet voting).

The Act specifically requires Council approval of any alternative voting equipment, alternative voting method, special and advance voting opportunities. Council must pass a by-law authorizing any alternative voting equipment and/or valternative voting method by June 1, 2014.

The Clerk is charged with administering the election process and for providing for any procedure which in his or her opinion is necessary or desirable for conducting the election and where the Act does not already provide for a procedure. These procedures include any requirements related to identification, authentication, security, integrity and validation of results. June 1, 2014 is also the date by which the Clerk is required to establish written procedures regarding any alternative voting equipment or method.

### Voting Method Options

It is recommended that Council make a determination as soon as possible to ensure adequate time for staff to prepare procedures and process requirements and to educate voters and candidates about the voting process.

The report outlines two voting method options, either of which may be implemented in the October 27, 2014 municipal election within the current election budget of \$300,000 and other applicable budgets. The following criteria were established in determining the selection of voting method options.

- Voting method complies with the requirements of the Act, related legislation such as the Accessibility for Ontarians with Disabilities Act and case law;
- Voting method demonstrates the court's principles often referred to when evaluating matters relative to the Act;
  - Secrecy/confidentiality of votes cast;
  - o Fairness, non-bias;
  - Accessibility;
  - o Integrity;
  - o Certainty of the vote result;
  - Voters and candidates treated fairly and consistently; and,
  - Majority vote governs, valid votes counted and invalid votes rejected where reasonably possible;
- Voting method can be implemented within available budget, staff and other resources;
- Voting method has been successfully deployed in binding Ontario municipal elections;
- Voting method can be readily understood and adopted by voters following a period of public education; and.
- Voting method continues to rely on the Act's principles of voter and candidate trust, responsibilities of voters and candidates and corresponding penalties and enforcement tools for offences.

Independent of staff's review and recommendations, at their September 30, 2013 meeting, Council specifically requested that internet voting be assessed for implementation in the 2014 municipal election and that the Accessibility Advisory Committee be consulted with respect to internet voting. At their October 15, 2013 meeting, the Accessibility Advisory Committee passed a motion with regard to internet voting (attached as Appendix C).

To assist Council with its decision, Appendix A outlines considerations for each voting option.

Other voting method options (e.g., vote by telephone, vote by mail, combination of voting methods such as internet and optical scan vote tabulators or internet and telephone voting) were not the focus of this report nor recommended at this time as an option for consideration. A subsequent report will be brought forward to Council regarding advanced and special voting (i.e., reduced hour voting for senior's residences, long term care facilities and voters in hospitals) based on Council's voting method direction. The report will also

request Council's authorization of a by-law to provide election information in languages other than English and French if required, as passed in previous elections.

### Option 1 – Use of Optical Scan Vote Tabulators

Where tested and programmed correctly, optical scan vote tabulators are able to accurately and efficiently read, interpret and count properly marked paper ballots. Optical scan vote tabulators are typically programmed to accept, read and tabulate marked ballots according to the procedures established by the Clerk.

Vote tabulators are often used in voting places or at a central location where marked ballots are transported to for tabulation. Tabulators have been used by many jurisdictions for a number of years, including Newmarket.

A survey of 415 of 444 municipalities in Ontario was conducted by the Association of Municipal Managers, Clerks and Treasurers of Ontario (AMCTO) following the 2010 municipal election. Of the 180 municipalities that responded, 46 deploy an optical scan vote tabulator in voting places and 9 in a central location where all marked ballots are tabulated.

Should Council select Option 1, a similar arrangement of voting places be established on voting day in line with what was arranged for in the 2010 municipal election (with the potential requirement for 2-3 additional voting places to account for growth, subject to the availability of accessible voting places). Each voting place will use at least one optical scan vote tabulator and be staffed with up to approximately 15 temporary election officials with various responsibilities. Advanced and special voting opportunities will be identified and recommended in a separate report to Council.

Leading up to the election, a program of public education will be implemented to advise voters and candidates about key dates, voter qualifications and identification requirements, where and how to vote, opportunities for advance, proxy and special voting, where accessible voting options are located and the like. The program will take advantage of existing and new media and find creative opportunities to inform and engage voters and candidates.

Opportunities for process improvements and service enhancements will be explored, including an easy to navigate voter information application for smart phones, use of an electronic voters list to allow for more efficient voter processing and improvements to accessibility in consultation with the Accessibility Advisory Committee.

After the close of voting on voting day, unofficial voting results will be telephoned or otherwise transmitted to the municipal office (and confirmed later through the upload of data from the optical scan vote tabulators). Unofficial election results will be streamed live through the Town's website as results are made available from each voting place and from advance and special voting. Once the Clerk has reviewed results relative to the requirements of the Act, official election results will be announced and the necessary steps will be taken to transition to the new Council.

Section 60 of the Act requires that a re-count be conducted in the same manner in which the election was held, and recent case law has upheld this provision. In the event of a recount in Option 1, the Clerk would provide for a procedure to re-tabulate marked ballots.

### Option 2 - Use of Internet Voting

According to research undertaken as part of the Shared Digital Infrastructure initiative, 100% of households in the Town of Newmarket have access to the internet and in a 2011 survey undertaken by the Town, 89%

of respondents indicated that they have access to the internet. Background information on internet voting is attached as Appendix B.

In staff's view, internet voting proposed in Option 2 (set out below) supports the following:

- The principles and requirements of the Municipal Elections Act, 1996;
- Enhanced convenience to voters by providing another voting method option;
- Changing demographics and lifestyles;
- Accessibility and independence for persons with disabilities;
- A new, virtually-engaged electorate; and,
- The Town's leadership in electronic service delivery.

Option 2 proposes that internet voting be made available as soon as possible after the Clerk's certification of nomination (e.g., Wednesday, September 17) through to voting day, October 27, 2014. This allows for 41 days of continuous voting.

Option 2 also proposes that a number of in-person voting opportunities be established during the advance voting period, for special voting purposes (such as seniors residences, long term care facilities and the hospital) and on voting day in each Ward (at least one in each Ward). The in-person voting option would involve the use of the same internet voting platform and voting choices would be made on a touch screen tablet or laptop. Establishing in-person voting provides choice and in-person assistance, and supports voters who do not have regular access to or comfort with using the internet at home or work.

Persons in special voting places will also use touch screen tablet devices to indicate their choices. Research has shown that touch choice devices are a more accessible tool than using a pen or pencil, particularly for persons who experience difficulty with motor skill and arm/hand coordination.

While possible to offer another voting method for in-person (such as the use of paper ballots and vote tabulators), managing parallel voting methods is not the preference of staff, from both a coordination and budget perspective.

To allow for concurrent remote and in-person voting, a web-based electronic voters list allowing for live strike-off would be required in voting places to ensure that the voter's list is automatically updated. The application supporting a web-based electronic voters list is already in use by the Town and accommodated within the election budget. Laptop and/or tablet devices required form a part of the Town's existing asset replacement strategy and present no additional costs to election budget. A preliminary technical assessment of voting places used in the 2010 municipal election demonstrates dependable internet service. In addition to assessing technical capacity in each voting place, accessibility, parking, room layout and convenience will also be assessed.

There will be an estimated 60,000 eligible voters in the 2014 municipal election. Using an estimated turnout of 40% (or 24,000 voters) for planning purposes, staff have made a conservative assumption of 30% remote voters (or 7,200) and 70% (or 16,800) in-person voters. Staff anticipate that following a period of public education, more than 30% of participating voters will vote remotely. To ensure the voting process is smooth and voters can be efficiently processed, staff feel that a conservative assumption of participation by remote voters for planning purposes is preferred.

Like Option 1, leading up to the election, a program of public education will be implemented to advise voters and candidates about key dates, voter qualifications and identification requirements, where and how to vote, opportunities for advance and special voting, accessible voting options and the like. The program will take advantage of existing and new media and find creative opportunities to inform and engage voters and candidates.

Like the provisions outlined in Option 1, opportunities for process improvements and service enhancements will be explored, including an easy to navigate voter information application for smart phones, use of an electronic voters list to allow for more efficient voter processing and improvements to accessibility in consultation with the Accessibility Advisory Committee.

After the close of voting on voting day, unofficial results will be downloaded from the secure results server through an established authorization protocol, including results from advance and special voting opportunities. The unofficial election results will be made available live through the Town's website. Once the Clerk has reviewed results relative to the requirements of the Act, official election results will be announced.

Section 60 of the Act requires that a re-count be conducted in the same manner in which the election was held, and recent case law has upheld this provision. In the event of a recount in Option 2, the Clerk would provide for a procedure to re-generate internet votes. A government election recount of ballots cast by internet voting has not occurred in Canada to staff's knowledge. Staff are aware of a recount of 127,000 of the 240,000 ballots cast by internet voting in the election of the Assembly of French Citizens Abroad (Assemblée des Français de l'Etranger), a French government institution representing French citizens abroad on the French Senate. The recount procedure resulted in identical results without mismatches.

### Next Steps

The recommendations in this report will be formally considered at the January 13, 2014 Committee of the Whole meeting. The public will be Invited to provide their comments on the recommendations in advance of the January 13, 2014 Committee of the Whole meeting where the recommendations and authorizing bylaw are considered.

Following direction from Council on the preferred Option in the form of an authorizing by-law, staff will review and determine purchasing options. The City of Markham has released a Request for Proposals (RFP) for internet, telephone and optical scan vote tabulator solutions for the 2014 municipal election. The RFP includes a "piggy back" clause whereby the Town can consider and (if deemed appropriate) award a contract to same firm(s) awarded by the City of Markham. Town staff have reviewed and agree to the RFP's general, functional, security, auditing, privacy, client support and other requirements with regard to internet voting. Alternatively, staff could issue its own RFP for an internet voting solution or vote tabulators. Staff will also consider any other arrangement provided for in the Town's purchasing protocols, including sole source award to a previously contracted service provider. In 2010, the Town awarded a contract for tabulator equipment to Dominion Voting. Dominion Voting has agreed to honour its 2010 pricing in 2014.

Staff would then initiate the necessary steps to develop and deliver a program of public education and engagement.

As noted, the Clerk would then develop election method procedures by June 1, 2014.

### **BUSINESS PLAN AND STRATEGIC PLAN LINKAGES**

A review of vote method options supports the Town's strategic directions of a well-equipped, managed and respected municipality by ensuring service excellence and promoting engagement in civic affairs.

### CONSULTATION

Municipal clerks in the GTA and Dr. Nicole Goodman, Assistant Professor McMaster University were consulted in the preparation of this report. The Accessibility Advisory Committee was consulted with

respect to their input on internet voting. Internally, the Communications and Purchasing departments were consulted.

### **HUMAN RESOURCE CONSIDERATIONS**

There are no human resource considerations associated with this report.

### **BUDGET IMPACT**

The total election budget for 2014 is \$300,000; the same amount approved for the 2010 election. In the 2010 election, approximately \$278,000 was spent. A draft budget for 2014 for Option 1 and 2 is outlined as follows:

Option 1		Comments	Option 2		Comments
Tabulator equipment	\$64,000	Based on 2010 arrangements & market survey, subject to confirmation	Internet voting platform	\$150,000	(~\$2.50/elector), based on market survey, subject to confirmation
Ballots	\$32,000	Opportunity for cooperative purchasing allowing for cost savings	Security audit	\$12,000	Opportunity for cooperative purchasing allowing for cost savings
Communications	\$15,000		Communications	\$20,000	Accounts for additional communications required in transitioning to internet voting
Voter notification & postage	\$40,000	Opportunity for cooperative purchasing for the voter notification allowing for costs savings	Voter notification & postage	\$40,000	Opportunity for cooperative purchasing for voter notification allowing for cost savings
Staff support	\$85,000	Assumes: - 7 days of advance voting - 17 voting places on voting day: - 2 voting places in Wards 2, 3, 4 & 5, 3 voting places in Wards 1, 6 & 7 - Location of voting places TBC	Staff support	\$55,000	Assumes: - 41 days continuous remote internet voting - Number of advance voting days TBC - Number of voting places on voting day TBC - Location of voting places TBC - Possible to reduce staff costs given staff will be assigned to support voting places
Stationery, supplies & miscellaneous	\$50,000		Stationery, supplies & miscellaneous	\$10,000	Includes stationery, supplies & miscellaneous
Approximate Total	\$290,000		Approximate Total	\$290,000	

Computer hardware (laptops, tablets and related equipment) will be required to facilitate an electronic voter's list (Option 1 advance voting and Option 2 advance voting and voting day) and in-person online voting (Option 2 voting day). Any new computer hardware purchased for the election will be funded from

the 2014 IT Capital Budget and is part of the Town's annual equipment replacement program. Following the election, computer hardware will be redeployed elsewhere in the Town. Therefore, any new computer hardware purchases will not have an impact on the election budget.

Should the RFP for the internet voting platform result in costs which cannot be accommodated within the draft budget, staff will report back.

CONTACT

For more information on this report, contact Andrew Brouwer, Director of Legislative Services/Town Clerk at abrouwer@newmarket.ca or 905-477-7000, ext. 2211.

Andrew Brouwer, Director of Legislative Services/Town Clerk

Susan Chase, Director, Information Technology

Anita Moore, Commissioner of Corporate Services

Consideration		Option 1		Option 2
Security of voting method	Pros		Pros	
,	1	Established model	ı	Security of system (hosted
	1	Perception among some that a		environment, web application, voting
	ماستان والمراوي	"supervised" voting environment		process and device) carefully planned
		offers fewer risks than internet voting		and risks/threats identified and
	ı	Relatively few occurrences of issues or		mitigated to the greatest extent
		concerns with process in Newmarket		possible (see Appendix B)
	eranole voldi		i	Voter must register to vote online
	Cons			first, prior to voting which provides for
	)	Although infrequent, unintended		security and integrity of the vote
		human errors can occur resulting in	,	Two-factor (minimum), two step
		errors (e.g., incorrectly programmed		process reduces opportunity for
		tabulators, incorrectly processed		impersonation of remote internet
		electors, unreported errors, etc.)		voter
	ŧ	Procedures must be put in place to	1	Third party firm hired to review
		ensure the proper management and		security and integrity of internet
		secure transfer of ballots, voters' lists,		voting platform
		forms and tabulators from the voting	ı	Reduces human error issues, potential
		place to the municipal office to ensure		for tampering, loss or stealing secure
		there is not tampering, theft or loss		information
	ŧ	Despite testing, technical or other	E	Option for in-person voting in a
		performance issues with tabulation		"supervised" environment
	. <del></del>	equipment can occur. Newmarket has		
		had good experiences with mitigating	Cons	
		technical issues associated with	ŧ	"Unsupervised" voting has been
,		tabulation equipment		perceived by some as being more
	****		•	risky than a "supervised" voting
				environment
			•	Refer to Appendix B for detailed
				account of typical additional security
el card de de la Constantina del Constantina de la Constantina de la Constantina de la Constantina de la Constantina del Constantina de la				and integrity considerations
			1	Process to vote remotely may be
				perceived as cumbersome, given that

			<b>~</b> +	the voter must register to vote online
	· · · · · · · · · · · · · · · · · · ·		1	the voter inust register to vote orining Additional efforts in communicating will be required to ensure voters
	p			will be required to ensure voters understand security of internet voting
				process and to ensure their voting
				device is protected
	-			Unplanned online threats are a reality
	www.cc.coe		-	with any website
				Requires new procedures to be
				developed
Authentication of voter	Pros		Pros	
	1	Established model, voters generally		Authentication process convenient for
		accustomed to presenting acceptable		voter (i.e., may be done remotely)
		identification to election officials to	1	Voters have control over their own
		receive a ballot		credentials
			1	Town staff involved in authenticating
	Cons			voters are more responsible and
		Authentication of voter occurs in a		experienced than election officials
		public setting between a voter and an		hired on a temporary basis with basic
	<u></u>	election official who has been hired		training
		on a temporary basis with basic	ì	Voters who feel more comfortable
		training. Despite training and		exchanging credentials and
		oversight, errors in understanding and		authenticating themselves in person
		communicating authentication		have that option
		requirements do occur		
			Cons	
			ı	Process to vote remotely may be
				perceived as cumbersome, given that
				the voter must register to vote online
				first, prior to voting
			ı	Additional efforts in communicating
				will be required to ensure voters

Guide a Summon	resulting in inaccurate voting records	lists can occur despite training,	- Human errors in managing the voters'	interruptions continue to occur	Despite communication on this rule,	cannot interrupt the voting process.	determine who has voted, but this	occasionally view the voters' lists to	- Candidates and scrutineers can	management	importance of voters' list	Election official training emphasizes	easily misplaced, stolen or copied	on voting day which may be more	- Election officials use paper voters' lists	lists by Clerk on voting day	- Reduced span of control of voters	Cons		procedure	familiar with list management	officials and candidates generally		Voters' list management Pros									
	*******	reduces interruption of voting process	rs' practical tool for candidates and	appoint scrutineers, provides a more	reduces requirement for candidates to	typically every 3 hours). This generally	determines; on voting day, this is	Excel format (as often as Clerk	candidates and their scrutineers in	(by Ward, poll, etc.) having voted for	quickly generate a report of persons	- An electronic voters' list is able to	voters	list to quickly locate and process	sts combination with electronic voters'	- Bar code scanners can be used in	Clerk	security of the voters' lists by the	enhancing the span of control and	whether remotely or in person,	live updates as each voter votes,	electronic voters' list which provides	<ul> <li>Option 2 uses a secure, web-based</li> </ul>	Pros	undeliverable mail and email	moved; and management of	deceased or persons who have	responses to unique questions;	PINs, forgotten passwords and	protocols for issuance of misplaced	<ul> <li>Requires new procedures addressing</li> </ul>	understand authentication process	

																				Tabulation & reporting of results		and a server												Consideration
voting place	results, particularly if telephoned from	in the unoritical dansmission of	in the amofficial transmission of	Newmarket, discrepancies can occur	<ul> <li>Although not the experience in</li> </ul>	Cons		municipal office	results Town's website and at the	- Effective system to stream unofficial	been available by 8:45-9 p.m.	tabulators, unofficial results have	<ul> <li>Given relatively few voting places and</li> </ul>	have occurred in Newmarket	concerns with tabulator equipment	<ul> <li>Relatively few occurrences of issues or</li> </ul>	candidates and public	process understood by staff,	<ul> <li>Established model, procedures and</li> </ul>	Pros												ngan, yanna		Option 1
					places	supplies reduced with fewer voting	<ul> <li>Coordination of equipment, forms and</li> </ul>	system available	<ul> <li>Similar unofficial results streaming</li> </ul>	efficient unofficial results reporting	unofficial results, allows for more	drives from voting places to verify	<ul> <li>Not dependent on return of memory</li> </ul>	and reporting	opportunity for errors in tabulation	human involvement greatly reduces	<ul> <li>Closed nature of system, minimal</li> </ul>	shortly after 8 p.m.	<ul> <li>Total results should be available</li> </ul>	Pros	for election officials and candidates	<ul> <li>Requires new training and procedures</li> </ul>	laptops and tablets	hardware and cabling, including	<ul> <li>Requires installation of various</li> </ul>	electronic voters' list	connections can support use of	testing to ensure internet and power	<ul> <li>Requires additional planning and</li> </ul>	Cons	records	more accurate and complete voting	use of electronic voters' lists supports	Option 2

Consideration

Consideration		Option 1		Option 2
Accessibility for persons with disabilities	Pros		Pros	
	ı	Established model, voters familiar	1	Web sites built on WC3 Standard and
		with process		Web 2.0 as required by the
	,	In-person support available from		Accessibility for Ontarians with
		election officials who have been		Disabilities Act making the voting
		provided basic training in customer		experience more accessible, especially
	agus of militing	service support for persons with		for persons with disabilities
		disabilities	ı	Web sites may be read using an
	(	Supportive voting equipment available		individual's preferred software at
		in limited number of voting places,		their work or home environment,
		typically only during advance voting		enhancing potential for privacy and
		period		independence
	1	Special voting options available for	,	Remote internet voting does not rely
		seniors, long term care residents,		on coordinating transportation
		hospital patients	ı	Option for support at voting places
	Cons			have been provided basic training in
		Process does not provide for a		customer service support for persons
		completely private, independent		with disabilities
		means of voting, particularly on voting	ı	Tablets used to cast ballot improve
		day		voting experience for persons with a
	ı	Supportive voting equipment may be	***************************************	motor skills coordination disability
	************	helpful, but may not accommodate	·······	Special voting options available for
	.,,	unique needs of individual voter's		seniors, long term care residents,
		Tools to cast ballot (paper, pen) can		
		be challenging for persons with a	Cons	
		motor skill coordination disability	ı	No system can completely address the
				unique needs of individual voter's
error in ministra				disability

Consideration E	Pros	Option 1	Pros	Option 2
	ş	Established model, familiar to	•	Candidates invited to attend testing of
		candidates and their scrutineers		internet voting platform and
	*	Candidates invited to attend testing of		procedures are shared with
		tabulators and procedures are shared		candidates to understand process
		with candidates to understand	ı	Third party review of security of
		process		voting platform shared with
				candidates and public for
	Cons			transparency
	ı	Candidates may find it challenging to	1	A convenient option may be well
		coordinate appointment of		received by voters as candidates
		scrutineers in voting places		campaign
		(particularly Mayoral or Regional	1	Effectively eliminates need to
		Councillor candidates)		coordinate proxy votes
			1	Fewer scrutineers required by
				candidate, particularly Mayoral or
				Regional Councillor candidates
			1	Candidates will receive list of persons
				having voted in a regular and
				convenient format, assisting with
				campaign coordination
			Cons	
			ı	Change in nature of candidate and
				scrutineer involvement may be
				perceived negatively
			ı	Communication and education of
				candidates required to understand
				how system performs
Communication & public education	Pros		Pros	
	ŕ	Established model, ease/familiarity	ı	New mode of voting generates public
		with communications deliverables		interest
	ı	Can repurpose some existing	1	Will generate more public
		communications depending on		interest/awareness because it is an

																Cons											manda desento					Consideration
			regardless	irrelevant - would need to revise	<ul> <li>Existing materials could be dated or</li> </ul>	restricted options = limited messaging	don't work traditional 9 to 5 jobs -	<ul> <li>More difficult to reach those who</li> </ul>	demographics/residents	variety of different	interest or buzz or interest from a	<ul> <li>Won't generate as much media</li> </ul>	or attention to key dates and activities	necessarily generate renewed interest	<ul> <li>Established process does not</li> </ul>	15		vote	guide voters when, where and how to	tactics, including mobile application to	communications and public education	<ul> <li>Opportunity to explore new</li> </ul>	residents	messages – less confusion among	<ul> <li>Direct and easy to understand key</li> </ul>	straightforward messaging	communicate to public – more	<ul> <li>Less information overall to</li> </ul>	down/require fewer resources	Town Page ads) which will keep costs	content (banners, graphics, templates,	Option 1
•	communications and public education	managed through a robust	<ul> <li>Perception about risks must be</li> </ul>	Cons		vote	guide voters when, where and how to	tactics, including mobile application to	communications and public education	<ul> <li>Opportunity to explore new</li> </ul>	messaging, generating interest	communications materials and	<ul> <li>Opportunity to create fresh</li> </ul>	municipal elections	<ul> <li>Potential to generate more interest in</li> </ul>	persons with disabilities)	working or living abroad temporarily,	requiring child care, elderly, persons	with longer commute times, parents	somewhere and vote (including those	time or resources to physically go	people who don't typically have the	<ul> <li>Convenience option appealing to</li> </ul>	being a "greener" alternative	innovation; good messaging around it	Newmarket as a digital leader in	<ul> <li>Good messaging around promoting</li> </ul>	after the election	regional media before, during and	<ul><li>could get more "pick-up" from</li></ul>	interesting and new model for voting	Option 2

Consideration		Option 1		Option 2
- Act District Section 1				Additional communication and public
				education efforts required to ensure
				voters and candidates understand
				when, where are how to vote online,
				frequently asked questions,
a audalana e				demographic-based tactics
			Í	There will be the need to produce
				new communications materials
			1	More technical training needed for
				election staff and volunteers – public
Annu visit shi ki				education needed for them as well
			•	Public education component will be
				more detailed and complex to roll out
			1	Potential for negative feedback as a
				result of a change in process in the
				media and on social media before,
				during and after the election
Corrupt practices (e.g., coercion,	Pros		Pros	
impersonation, stealing or tampering with	1	Communications and public education	F	Communications and public education
voter information letters, ballots, voters' lists		efforts will include information about		efforts will include information about
and voting equipment, vote buying)		corrupt practices		corrupt practices
	ı	Some perceive that a supervised	į	Centrally controlled, secure-access
		voting environment reduces coercion		based system involves fewer human
				errors and opportunities to
	Cons			compromise the security of election
	ı	Despite training and oversight, ballots,		records (e.g., voters' list, vote records)
		voters' lists and voting equipment	1	Voting website can include a
		may be tampered with, stolen or		requirement to acknowledge a
		misplaced. To staff's knowledge,		declaration of acknowledgement of
		there have been no occurrences of		corrupt practices
		such corrupt practices	ı	No evidence of voter information
	ı	Coercion may still be present in a		letters having been stolen in other
		"supervised" voting environment		municipalities having offered internet

			Consideration
		- Corrupt practices possible with any voting method. Any claims will be reported to the Police for an investigation	Option 1
investigation	Cons - Perception that "unsupervised" (remote internet) voting may facilitate coercion - Corrupt practices possible with any voting method. Any claims will be reported to the Police for an	voting. However, envelope can include a statement advising of criminal offence associated with stealing or tampering with mail In-person voting option available for persons who feel more comfortable doing so in a supervised environment	Option 2

### <u>Purpose</u>

Appendix B is intended to summarize available background research and the experience of municipalities having successfully deployed internet voting, in particular with regard to commonly identified themes. Reports and studies referenced in Appendix B are available through the Clerk.

### Introduction

Internet voting is gaining popularity for use by many electoral jurisdictions in Canada and around the world. Internet voting may be used as the sole means to vote throughout an election, or together with other methods of voting, such as in-person voting at a voting place using the internet voting platform on a laptop, desktop or touch screen computer or paper ballots using an optical scan vote tabulator. Some municipalities use internet voting during the advance voting period only, and deploy another voting method on voting day. Others deploy internet voting and telephone voting, which are typically based on the same back end tabulation platform.

A number of private information technology firms offer an internet voting platform solution to various government jurisdictions, member and shareholder based organizations such as political parties, unlons, non-profit organizations and publicly traded firms. Given the infrequent nature of elections, very few government jurisdictions have invested in resources to develop their own internet voting platform, although both Elections Ontario and Elections Canada have taken an interest in identifying firms for this purpose. The government of Estonia is one exception, which has created and deployed an integrated platform for the secure online transaction of a variety of government services, including voting.

According to research prepared by McMaster University Assistant Professor Nicole Goodman, internationally, jurisdictions have chosen to deploy internet voting to support the objectives of: increasing voter tumout; creating or expanding upon a leadership role in e-government; and enhancing accessibility and convenience. To a lesser extent, the same research shows internet voting has been deployed to support the objectives of enhancing citizen-centred service, increasing youth voter turnout and providing for an accurate and efficient vote counting system.

In Ontario, statistics indicate that the use of internet voting by municipalities has grown from 12 in 2003 (representing 255,837 eligible voters), to 20 municipalities in 2006 (representing 397,537 eligible voters) and 44 in 2010 (representing 783,887 eligible voters). Larger Canadian municipalities having used internet voting include the cities of Burlington (2010), Halifax (2008, 2012), and Markham (2003, 2006, 2010). Municipalities of a similar or larger size to the Town of Newmarket having approved internet voting for use in the 2014 municipal election include the Town of Ajax and the cities of Cambridge, Guelph, and Sudbury.

### Commonly identified advantages

- Provides a convenient channel to vote remotely from home, work or elsewhere;
- Provides voting options for persons who may find it difficult to attend a voting place, including students, vacationers and business travellers;
- Supports an independent and private option to vote by persons with disabilities;
- Supports a "green" option where less paper and fuel emissions are generated;
- Advances goals related to e-government leadership and community technology advancement;
- Supports the potential for increased voter turnout or voter engagement among a broader spectrum of voters; and,
- Provides for an accurate and fast system of vote tabulation.

### Commonly identified disadvantages

- Perception of security and process concerns;
- Change in traditional nature of electoral participation by voter and candidate;
- Accommodation for persons with limited or no internet access or who have challenges using technology;
- Additional efforts required to inform and educate public about transition to internet voting; and,
- Costs, particularly when internet voting is offered with another election method.

### Participation

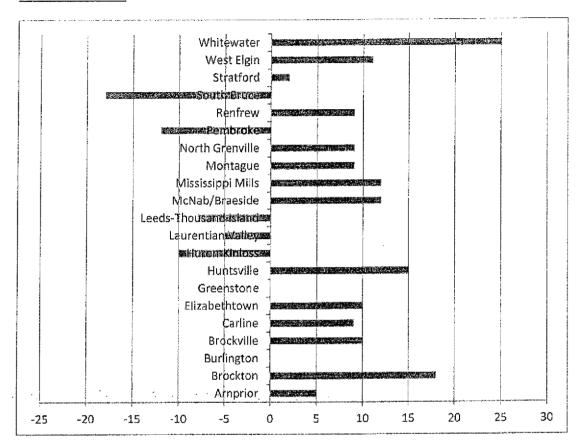
Canadian research on the demographics of those participating in internet voting for municipal elections is limited, but available research demonstrates internet voting users to be of the same or similar age demographic as previous elections using other voting methods (generally, persons in their 40s, 50s and 60s). To some extent, the research appears to mitigate concerns that middle age or older persons are less tech savvy and more likely to experience difficulty using internet voting.

Staff understand that historically, participation among youth in municipal elections is low, often attributed to the perception by youth that municipal government is less relevant or impactful to their life than other orders of government accountable for social welfare, education and human rights. At the same time, a 2011 survey by Elections Canada demonstrated that 57% of non-voters would have voted had it been possible to do so over the internet, a statistic that increased to 67% for non-voters between the ages of 18 to 24. More jurisdictions would be required to offer internet voting in order to validate actual voter behavior.

Professor Goodman is leading an internet voting research initiative involving 14 Ontario municipalities (at the time of publishing this report) which includes an optional survey to be completed by internet voting participants. This research will assist in better understanding participation in internet voting among Ontario municipalities.

### Voter turnout

Professor Goodman's research includes the following % change in voter turnout between 2006 and 2010 among Ontario municipalities having deployed internet voting for the first time in 2010:



The City of Markham has a longer history with regard to the deployment of internet voting in Canada. When the City first introduced internet voting in 2003, there was a 300% increase in voter turnout; a 43% increase in 2006 and no change in turnout in 2010 (noting that internet voting in the City of Markham has been made available during advance voting only). Although there appears to be positive voter turnout trend among municipalities having deployed internet voting for the first time, staff understand that voter turnout is difficult to predict and may be more likely to be linked to factors such as current issues and the nature of the races than a particular voting method.

### Security & integrity

Concerns have been expressed about various fraudulent activities that may attempt to compromise the security or integrity of internet voting platform such as Distributed Denial of Service attacks (DDoS), Trojan horses, viruses and website spoofing. While legitimate to raise such concerns, best practices have emerged among municipalities

and other jurisdictions to protect the internet voting platform from attempts to compromise its security and integrity.

A plan to address or mitigate concerns on a technical or process level should be established from multiple security perspectives, including (in summary):

- Security of the hosting environment:
  - Standards of security are established to ensure controlled access to the hosting environment, including security personnel, controlled and rolebased access and criminal background checks.
  - Network infrastructure is protected through managed and monitored firewalls.
  - Environmental hazards are addressed, including redundant power and cooling; smoke/fire detection and suppression as well as special building construction features.
  - A "Tier III" or "Tier IV" data facility has been identified as a best practice among municipalities.
- Security of the web application:
  - An arms-length web application security consultant is engaged to:
    - Perform a vulnerability assessment on the external IP address of the web server hosting the internet voting application;
    - Perform a web application security audit of the online voting application; and,
    - Perform penetration testing to exploit select vulnerabilities discovered.
- Voting process security:
  - Establish an acceptable means of identifying and authenticating voters in an "unsupervised" remote internet based election. In Canada, a "twostep" and <u>at least</u> two-factor authentication process is common, particularly among larger municipalities. Variations on the process and credentials required can vary, depending on the nature of a particular vendor's system and the requirements of the municipality.
  - o In a one-step process, typically, a secure voting URL is shared with the voter through the voter notification letter and after providing the required credentials (including a unique PIN provided to the voter and personal identifier credential such as a birthdate) the voter accesses their internet ballot.

- o In a two-step process, typically, the voter registers their intent to vote online before being providing with a secure voting URL. Through the voter notification letter, the voter is provided with a unique PIN which is used together with a person identifier credential (such as a birthdate) and/or an uploaded piece of acceptable identification to register. The voter may also be required to create their own password or response to a unique question when registering. If registration is successful, the voter is mailed or sent an encrypted email with a second PIN which is used together with the password or response to a unique question created in the registration step to access their internet ballot through a secure voting URL.
- Where the online voting platform is used in a "supervised" context such as at a voting place, generally fewer credentials are required to verify and provide access to the voter.
- o Procedures are established by the Clerk with regard to the issuance of misplaced PINs, forgotten passwords and responses to unique questions; deceased or persons who have moved; and management of undeliverable mail and email. Municipalities having undertaken internet voting have developed best practice procedures which support the principles of the Municipal Elections Act, 1996.
- It is the responsibility of the Clerk to assess and establish voting process security procedures, including identifying and authenticating voters.
- o An internet voting platform is required to accommodate the ability to perform and verify the following:
  - Attest the correct assignment of the vote to the proper candidate;
  - Attest the fact that the vote was counted;
  - Attest the fact that the voter can only vote once;
  - Ensure the vote cannot be tracked to the voter;
  - Ensure the secure transfer of data:
  - Ensure data is not stored on a client computer; and
  - Provide a process based audit trail.
- Voting device security:
  - Any device accessing the internet may be susceptible to online threats (e.g., viruses, Trojan horses, spyware, phishing attempts and other attacks) where steps are not taken to protect the device through anti-virus software.
  - Like other secure online transactions, an internet voting platform must be able to demonstrate cryptography and identify verification.

- o It is recognized that there is greater control of online threats with devices deployed by the municipality (i.e., online voting using municipal tablets or laptops in a supervised environment).
- o In an internet election, the voter is accountable for ensuring the device they use to cast their ballot has incorporated current anti-virus software. Through a program of public education prior to registration, the public is informed about how to access such software and take reasonable steps to mitigate online threats.

The Request for Proposals (RFP) document should identify a detailed set of general, functional, security, auditing, privacy, client support and other standards and requirements. An inter-disciplinary/inter-departmental team is typically assigned to evaluate and select an appropriate vendor. Proper testing and auditing throughout the various implementation phases also serves to protect the internet voting platform from external threats.

Although there have been documented cases of malicious attempts designed to compromise an internet voting platform, there have been no incidents of a controverted election. Internet voting results from all Canadian electoral jurisdictions have been final and binding. There are three commonly referred to incidents where the robustness of internet voting has been called into question:

- 2010 Washington, DC Election. Prior to the 2010 Washington, DC elections the public was invited to test the rigor of the internet voting platform. Through weaknesses in the internet voting platform's source code, a professor and graduate students from the University of Michigan were successful in penetrating and compromising the election servers, resulting in cancellation of the internet voting option for the 2010 Washington, D.C. Election. Since this occurrence, private firms have created more robust source code and platform security frameworks and jurisdictions have also adopted a best practice of employing third party security audit firms to provide an independent analysis of the internet voting platform including its source code to ensure current threats are protected.
- 2010 Township of Arnprior, ON Municipal Election. Here, the internet voting platform froze for 57 minutes near the end of voting day. The glitch was attributed to a system add-on that allowed candidates to monitor their progress in real time, creating a system capacity issue. The occurrence was not a breach of security and voting was extended for another hour the following day to compensate for the lost time (similar response to a power failure or emergency in a voting place). System capacity should have been identified earlier in the planning process for the election, which could have avoided the circumstance.
- 2012 NDP Leadership Election. A distributed denial of service attack occurred
  on the voting website for the 2012 NDP Leadership Election, slowing down the
  ability to cast a ballot online, but not compromising the security of the internet

voting platform itself. An audit performed by Price Waterhouse Cooper indicated that no ballots had been altered, subtracted or added. Such a malicious attack has been attributed to the attention garnered to this particular election. A November, 2012 internet voting issues guide commissioned by the City of Edmonton, Centre for Public Involvement and University of Alberta indicated that "every jurisdiction is unique and must individually assess its own contextual factors and whether the necessary conditions are present to ensure the successful deployment of an internet voting system".

Dr. Henry Kim, Associate Professor of Information Systems and Management Science at York University prepared a comprehensive risk assessment of various voting methods for the City of Markham prior to the 2006 municipal election and literature review on evolving security threats to internet voting prior to the 2010 election. The risk assessment identified that a traditional "supervised" voting method in a voting place presented fewer risks than remote internet voting; however, not considerably higher and considerably less risky than vote by mail. The literature review revealed that there were no unaccounted security threats to internet voting prior to the 2010 municipal election.

Concerns have been raised that internet voting presents the potential for impersonation, coercion, vote buying and other corrupt practices associated with an "unsupervised" voting. Some have also suggested that internet voting does not fully support the principles of the *Municipal Elections Act*, 1996 (the Act) in a circumstance where voters are not fully supervised.

Section 89 of the *Municipal Elections Act, 1996* clearly identifies the responsibilities of the individual voter, such as ensuring that one is entitled to vote prior to doing so, as well as ensuring that one does not vote more times than allowable. Some have expressed concern that an unsupervised form of voting like internet voting facilitates the potentiality of those offences, but others have stated that unsupervised voting emphasizes the accountability of individual voters inherent in the Act. Moreover, the Act is based on the democratic principles of voter and candidate trust. Trust in voters is evident in the very few instances of voter impersonation, coercion, vote buying and other corrupt practices in Canadian elections. The majority of municipal election law offences have involved municipal election candidates.

Where there is evidence of impersonation, coercion, vote buying or other corrupt practices, as in any other method of voting, the Clerk will contact the Police and take other such actions necessary in accordance with the law.

Municipalities having implemented internet voting adopt a community education plan where voters become aware of their duties, options to participate and channels to identify questions and concerns including those related to impersonation, coercion, vote buying or other corrupt practices, as well as steps required to protect their own devices from online threats.

The balance of risk and access/convenience afforded by internet voting is evident in a quote in a report entitled "Comparative Assessment of Electronic Voting" written for Elections Canada by the Strategic Knowledge Cluster Canada-Europe Transatlantic Dialogue:

"Careful examination of the literature on internet voting as well as the pilot experiences of many jurisdictions suggests that both the extremely optimistic and pessimistic position about the effect of internet voting are overstated. Internet voting will not act as a panacea for the social causes responsible for electoral disengagement, nor will it remedy negative attitudes toward political entities. It will, however, increase voting opportunities for electors and make casting a vote more accessible. On the other side internet voting will not erode democracy or result in vote buying and election fraud any more than does the existing system".

The November, 2012 internet voting issues guide commissioned by the City of Edmonton, Centre for Public Involvement and University of Alberta reflected on risks related to internet voting:

"Of all the types of internet voting, remote internet voting offers the least amount of control for election officials. Generally less control implies greater security risks, but it does not have to denote an unacceptable increase in these risks. The testing of electronic voting worldwide and its use in binding elections has shown that the greatest technical difficulties have been with voting machines in voting stations or kiosks, and not all of these used the internet". The voting machines referred to in this quote speak to issues related to vote tabulators.

### Satisfaction with internet voting

The Association of Municipal Managers, Clerks and Treasurers of Ontario undertook a comprehensive survey on municipal election practices and experiences following the 2010 municipal election. Of the 30 municipalities having used internet voting, 70% noted they were extremely satisfied; 26% noted they were very satisfied; and 4% noted they were satisfied. No municipalities responded with negative experiences.

### Community adaptation

Like any service with wide impact on the public, it is important for a municipality to develop a community adaptation plan, which includes communication tactics, procedures and support to transition the community to internet voting.

Municipalities having implemented internet voting have included such measures as:

 Communications tactics including web and mobile web content; ongoing notices in local newspapers and publications; an instructional video; public service announcements around key dates, requirements and activities; and theme based collateral such as pens and magnets.

### Appendix B – Background on Internet Voting

- Outreach and education for key stakeholders, including candidates and their scrutineers, seniors, Accessibility Advisory Committee and support organizations for persons with disabilities.
- Online, telephone and in-person voter support, provided through the Customer Service Centre, including weekend and evening hours leading up to and including election period.

### Appendix C

### ACCESSIBILITY ADVISORY COMMITTEE MINUTES - OCTOBER 15, 2013 - ITEM 5

The Deputy Clerk provided a verbal update regarding the planning for the 2014 Municipal Election and the option of using internet voting. The Committee indicated that while this would increase accessibility to those who aren't able to attend voting locations it should not preclude offering paper ballots at voting locations. There was discussion around the accessibility of the voting locations and large print ballots during the last election.

Moved by Councillor Twinney Seconded by Diane Bladek-Willet

The Newmarket Accessibility Advisory Committee recommends to Council:

THAT the Newmarket Accessibility Advisory Committee supports the addition of internet voting to the current model.

CARRIED