



STAFF REPORT ACTION REQUIRED

Feasibility of Extending Use of Current Vote Counting Equipment and Technology

Date:	June 15, 2015
To:	Executive Committee
From:	City Clerk Director, Purchasing and Materials Management
Wards:	All
Reference Number:	21495

SUMMARY

This report is in response to the request that the City Clerk investigate the cost to extend the life cycle of the existing tabulators for an additional one, two or three terms of City Council, as well as the direction for the City Clerk to have regard for ranked-ballot elections when considering the acquisition of new voting tabulators.

The City owns 1,850 tabulators that are at the end of their anticipated life cycle. City Clerk's Office staff negotiated with Election Systems & Software Canada, ULC (ES&S), the single source provider for the City's tabulators, on the potential of extending the use of the existing tabulators as well as incorporating ranked choice voting.

The cost for ES&S to retrofit the existing tabulators to be used for the next two municipal elections in 2018 and 2022 and to include ranked choice voting for the 2018 election is \$2.5 million net of HST (\$2,544,000 net of HST recoveries). Following the 2022 election, ES&S and the City Clerk will re-evaluate the then-current tabulators to determine if it is feasible to maintain them for the 2026 election.

In addition to the costs for ES&S to upgrade the existing tabulators, the City will incur estimated costs of \$1.15 million net of HST (\$1,170,240 net of HST recoveries) performing proof-of-concept testing, server and software upgrades, system integration and an external audit of the upgraded voting system. Any external services will be procured through a competitive process.

RECOMMENDATIONS

The City Clerk and Director, Purchasing & Materials Management recommend that Council:

1. Approve the upgrade of the existing tabulators to enable their use in the 2018 and 2022 Municipal Elections.
2. Authorize the City Clerk to negotiate and enter into an agreement with Election Systems & Software Canada, ULC (ES&S) for:
 - a. The upgrade and replacement of modems, parts and software to meet current and future technology standards compatible with City systems in the estimated amount of \$1,400,000 net of HST (\$1,424,640 net of HST recoveries) on terms and conditions satisfactory to the City Clerk and in a form satisfactory to the City Solicitor; and
 - b. The retrofit of the tabulators to enable the processing of Ranked Choice Voting (RCV) in the estimated amount of \$1,100,000 net of HST (\$1,119,360 net of HST recoveries), on terms and conditions satisfactory to the City Clerk and in a form satisfactory to the City Solicitor, contingent upon the Province amending the *Municipal Elections Act, 1996 (MEA)* to authorize the use of RCV in municipal elections and Council's decision to proceed with RCV.
3. Approve \$1,150,000 net of HST (\$1,170,240 net of HST recoveries) in funding to perform proof-of-concept testing, server and software upgrades, system integration and an external audit of the upgraded voting system. Any external services will be procured through a competitive process.
4. Approve the adjustment of the City Clerk's Office 2015 – 2024 capital plan so that the Replacement of Vote Counting Equipment Capital Project is renamed the Voting Equipment Upgrade project with an adjusted project cost of \$3,650,000 net of HST (\$3,714,240 net of HST recoveries).

Implementation Points

If Council authorizes the City Clerk to enter into an agreement with ES&S to upgrade the existing 1,850 tabulators and associated systems, the following estimated timeline is proposed in preparation for the 2018 Municipal Election:

	From	To
Contract negotiations	Q4 – 2015	Q1 – 2016
Agreement with vendor in place with scope of work	Q1 – 2016	Q2 – 2016
Proof-of-Concept (required as part of agreement)	Q2 – 2016	Q3 – 2016
Upgrades and modifications to tabulators	Q3 – 2016	Q1 – 2017
Complete testing of tabulators and systems	Q2 – 2017	Q4 – 2017
Preparation for 2018 Municipal Election	Q1 – 2018	Q2 – 2018

If Council approves upgrading the current tabulators, there is a tremendous amount of work that must be completed in preparation for the 2018 Municipal Election, not only to ensure that they are properly tested, but also integrated with the City's Election Management System.

Financial Impact

The total estimated cost for ES&S to upgrade the tabulators for use in the 2018 and 2022 Municipal Elections and to enable RCV capability is \$2,500,000 net of HST (\$2,544,000 net of HST recoveries). The total estimated cost for the City to conduct proof-of-concept testing, server and software upgrades, system integration and an external audit of the upgraded voting system is \$1,150,000 net of HST (\$1,170,240 net of HST recoveries).

Upgrade Current Tabulators for use in 2018 and 2022 Municipal Elections and to Process RCV

	2015	2016	2017	Total
Upgrade existing tabulators and software	-	-	\$1,400,000	
Upgrade to process ranked-choice voting	-	\$1,100,000	-	
Perform proof-of-concept	\$150,000	-	-	
Testing	-	\$150,000	\$100,000	
External Audit	-	\$100,000	\$150,000	
Servers and Software Upgrades	-	\$150,000	\$50,000	
Set up and integration of systems	-	\$150,000	\$150,000	
TOTAL (Net of HST):	\$150,000	\$1,650,000	\$1,850,000	\$3,650,000
Total (Net of HST recoveries):	\$152,640	\$1,679,040	\$1,882,560	\$3,714,240

These costs are based on estimates provided by ES&S in May, 2015 (Refer to Attachment 1) and include \$1.4 million for the upgrade to the existing tabulators and software, \$1.1 million for the upgrade to process RCV and \$1.15 million for proof of concept testing, external audit, server and software upgrades and system integration.

The City Clerk's Office 2015 – 2024 capital plan, approved by City Council at its meeting on March 10 and 11, 2015, included the project titled 'Vote Counting Equipment Replacement'. City Council approved the project cost of \$15.61 million, funded from debt, with cash flow of \$0.150 million in 2015, \$14.98 million in 2016 and \$0.480 million in 2018.

If City Council approves the upgrade of the existing vote counting equipment, the City Clerk's Office 2015-2024 capital plan will be adjusted. The Vote Counting Equipment Replacement project will be renamed the Vote Counting Equipment Upgrade project, with an adjusted cash flow of \$0.150 million in 2015, \$1.65 million in 2016 and \$1.85 million in 2017. The adjusted project will be included in the City Clerk's Office 2016-2025 capital budget submission.

Following the 2022 election, ES&S and the City Clerk will re-evaluate the then-current tabulators to determine if it is feasible to maintain them for the 2026 election. Depending on the results of this evaluation, the City Clerk will, if required, include funds for the purchase of new voting equipment in the 2023 – 2026 budgets. This will be considered in future year capital budget deliberations.

Should Council not approve upgrading the current tabulators, the City Clerk will issue an RFP for new vote counting equipment and associated systems. The current capital approved project cost of \$15.6 million to replace the vote counting equipment in the City Clerk's Office 2015-2024 capital plan will remain unchanged.

The Deputy City Manager and Chief Financial Officer has reviewed this report and agrees with the financial impact information.

DECISION HISTORY

At its meeting on September 30, 2009, City Council authorized the City Clerk to enter into an agreement with Election Systems & Software Canada, ULC for the supply and installation of upgraded modems (Election Results Transmission Equipment) in the City's tabulators.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2009.GM24.15>

At its meeting on December 8, 2009, City Council adopted the 2011 – 2019 Capital Plan. The Capital Plan for the City Clerk's Office includes \$15M for the replacement of the City's vote counting equipment. Council also directed the City Clerk to develop a business plan on options for the replacement of the City's vote counting equipment after the 2014 Municipal Election and that the City Clerk begin her research and investigation immediately following the 2010 Municipal Election.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2009.EX38.1>

At its meeting on June 11, 12 & 13, 2013, City Council requested the Province of Ontario to amend the *Municipal Elections Act* to authorize the use and establish the framework of Ranked Choice Voting to permit Toronto City Council to use ranked ballots and instant runoff voting in municipal elections.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2013.GM22.15>

At its meeting on December 16, 17 & 18, 2013, City Council authorized the City Clerk to enter into an agreement with Election Systems & Software Canada, ULC for the provision of proprietary maintenance and support of vote counting equipment and the supply of their associated goods and services for a period of four years, from January 1, 2014, to December 31, 2017.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2013.GM26.9>

At its meeting on June 16, 2014, City Council referred Motion MM52.11 to the Government Management Committee that the City Clerk have regard for ranked-ballot elections when proceeding with upgrades to the City of Toronto's vote counting equipment.

<http://www.toronto.ca/legdocs/mmis/2014/gm/bgrd/backgroundfile-70740.pdf>

At its meeting on August 11, 2014, the City's Government Management Committee requested the City Clerk to investigate the cost to extend the life cycle of the existing tabulators for an additional one, two or three terms of City Council and report back to Government Management Committee in 2015.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2014.GM32.31>

At its meeting on March 10 and 11, 2015, City Council approved EX 3.4, 2015 Capital and Operating Budgets and approved the Project Cost of \$15.61 million for the Vote Counting Equipment Replacement Project, fully funded from debt.

<http://app.toronto.ca/tmmis/viewAgendaItemHistory.do?item=2015.EX3.4>

ISSUE BACKGROUND

In 2000, the City of Toronto purchased 1,850 tabulators from Election Systems & Software Canada, ULC (ES&S) to count and record votes for municipal elections. Between 2000 and 2014, these tabulators were used in five general municipal elections, four by-elections and rented to other jurisdictions for their use. When the tabulators were purchased, their life cycle was estimated to be 15 years.

In the 2014 Municipal Election, the tabulators performed very well. Despite this excellent performance however, it is essential that key components be upgraded to enable their use in future elections.

1. **Wireless modems and associated SIM cards.** The tabulators' wireless modems permit the quick and accurate electronic transmission of election results after the close of voting. The current modems, upgraded in 2009 to utilize 2G wireless technology, are now outdated and likely will not be supported in 2018. If the modems and SIM cards are not replaced and 2G wireless technology is no longer supported, the tabulators will be unable to transmit the election results after the close of voting; significantly delaying the posting of the results.
2. **Software and server upgrades.** In addition to the modem and SIM card upgrade, the associated software and servers must be upgraded and in some cases replaced, to conform to the City's current standards. The current servers that receive incoming tabulator transmissions are only certified to run on an operating system that will not be supported beyond 2015.

Given the ongoing discussions with the Province regarding changes to the *MEA* and the possibility of ranked choice voting (RCV), the City Clerk consulted with ES&S to determine the feasibility of retrofitting the existing tabulators to process RCV. ES&S indicated that by upgrading their technology and software, the tabulators can be programmed to process RCV. The upgrades required to process RCV can be done in conjunction with or separately from the essential upgrades.

COMMENTS

As requested, the City Clerk investigated the feasibility and costs associated with:

- Extending the life cycle of the existing tabulators for an additional one, two and three terms of Council;
- Upgrading the tabulators to process RCV;
- Integrating the proposed tabulator upgrades with the City's technology systems; and
- Ongoing maintenance and support for the existing tabulators.

ES&S is the single source provider for the maintenance, materials, services and software products for the City's tabulators and has sole access to the proprietary intellectual property (Refer to Attachment 2). The City Clerk requested ES&S to provide a formal response on the feasibility of the upgrades noted above (Refer to Attachment 1).

Extending Use of Existing Tabulators

ES&S has confirmed that the current tabulators can be upgraded for use in the 2018 and 2022 Municipal Elections (Refer to Attachment 1). The components of the tabulators that require upgrades include the:

- Modems and SIM cards; and
- Software and servers.

ES&S has indicated that it is technologically feasible to retrofit the tabulators to process RCV (Refer to Attachment 1). As the Province has not yet determined the framework for its implementation, it is impossible to determine the full impact of RCV. The City Clerk will provide a report to Council on the feasibility of implementing RCV when the Province passes enabling legislation providing for its use.

To support extending the use of the existing tabulators, the City will:

- Require upgrades to City owned servers and software;
- Facilitate integration between City and vendor systems;
- Procure the services of an external auditor to assess the functionality and security of the upgraded equipment; and
- Conduct a proof-of-concept of the upgraded tabulators to validate the feasibility of the system prior to final acceptance of the upgrades. The proof-of-concept will involve completing an end-to-end test of the entire system.

Information & Technology (Technology Infrastructure Services) Review

The City's Information & Technology (I&T) Division was consulted and provided their technical evaluation of extending the use of the existing tabulators for an additional one, two or three terms of Council and upgrading them to process RCV. This evaluation consisted of

an analysis of the risks and issues associated with the existing system and the upgrades required in order for the tabulators to be used in 2018 and 2022. The City Clerk will work closely with I&T and ES&S throughout implementation to ensure that all components of the upgraded tabulators are thoroughly tested and fully documented and integrated with the Election Management System.

Ongoing Preventative Maintenance & Software Support

In January 2013, the City entered into a 4-year agreement with ES&S to maintain and support the existing tabulators in the event of by-elections, contract elections or referenda. This agreement ends December 31, 2017. If these upgrades are implemented, this support agreement will be re-negotiated to cover the period from January 1, 2018 to December 31, 2022.

The City Clerk has consulted with the City Solicitor, who has confirmed that the existing contract with ES&S can be extended.

If Council approves upgrading the current tabulators, there is a tremendous amount of work that must be completed in order to upgrade and test the current tabulators and confirm their functionality in preparation for the 2018 Municipal Election.

CONTACT

Bonita Pietrangelo
Director, Elections and Registry Services
City Clerk's Office
Tel: 416-392-8019
Email: bpietran@toronto.ca

Jacque Breen
Manager, Corporate Purchasing, Policy &
Quality Assurance
Purchasing and Materials Management
Tel: 416-392-0387, Email: jbreen@toronto.ca

SIGNATURES

Ulli S. Watkiss
City Clerk

Michael Pacholok
Director, Purchasing & Materials
Management Division

ATTACHMENTS

Attachment 1 – Estimate to Upgrade Voting Equipment from ES&S
Attachment 2 – Proprietary Letter from ES&S

Attachment 1

Estimate to Upgrade Voting Equipment from ES&S



May 21, 2015

VIA FACSIMILE (416) 395-1300
AND REGULAR MAIL

Mrs. Bonita Pietrangelo
Director of Election Services
City of Toronto - Elections & Registry Services
89 Northline Road.
Toronto, ON. Canada
M4B 3G1

RE: Future support of the current Model 100 voting system for the 2018, 2022, and 2026 elections.

Dear Mrs. Pietrangelo:

This letter sets forth Election Systems & Software Canada, ULC's ("ES&S CANADA") proposal for future support of the ES&S/City of Toronto current Model 100 voting system for the City's 2018, 2022, and 2026 elections.

ES&S CANADA and the City of Toronto have enjoyed more than 15 years of successful elections and we appreciate the investments the City has made in both ES&S CANADA and our market proven technologies.

Considering the changing voting environments within the City, the below estimations will help to outline the tasks required to maintain the current solution through the next two general elections.

Election Years 2018 and 2022:

1. Upgrade current wireless modems to comply with new technology standards

- Upgrade M100 to new wireless modem (hardware and software)
- Upgrade DAM to current Windows platform
- Test and validate new wireless protocol

Estimated Cost – \$1.4 million

2. RCV Capability

- Upgrade M100 firmware to create and save cast vote records
- Upgrade DS200 to create and save cast vote records
- Revive RCV support in HPM and ERM
- Support M100 & DS200 data in ERM RCV modules
- Create RCV export file in ERM
- Purchase of a 4MB PCMCIA card to hold CVR's

Estimated Cost - \$ 1.1 million

Footnotes for 2018 and 2022 elections:

- The above changes would require a 2018 -2022 HMA extension similar to the current 2015-2017 offering.
- The wireless modem upgrade will be effective for as long as wireless technology allows.
- A formal agreement that reflects greater specifics around the deliverables and timelines would be executed between the parties prior to any work being performed.

Election Year 2026:

Past the 2022 elections, ES&S and the City would evaluate the then current solution to determine if it is feasible to maintain the voting solution into 2026.

ES&S CANADA truly values our relationship with the City of Toronto. We look forward to continuing this mutual rewarding relationship through dedication and solution expertise.

If you have any concerns or questions, please do not hesitate to contact me.

Very truly yours,



Glenn Foote
Director, Canadian Operations
Election Systems & Software Canada, ULC

cc. Tom O'Brien
cc. Gene Seets

Attachment 2 Proprietary Letter from ES&S



April 27th, 2015

VIA FACSIMILE (416) 395-1300
AND REGULAR MAIL

Mrs. Bonita Pietrangelo
Director of Election Services
City of Toronto - Elections & Registry Services
89 Northline Road.
Toronto, ON. Canada
M4B 3G1

Dear Mrs. Pietrangelo:

This letter explains Election Systems & Software, Inc.'s ("ES&S") position as the sole source developer, manufacturer and provider of ES&S' proprietary voting tabulation hardware and software systems, as well as the associated components contained therein. The ES&S voting system that the City of Toronto purchased and currently operates as well as rents, uses ES&S proprietary software and hardware which has been specifically designed, developed, tested and manufactured by ES&S. ES&S' proprietary voting system and software is not licensed and/or sold by any other vendor in the election industry. In order to obtain ES&S' products and services, customers are required to continue to purchase and/or license such products and services directly from ES&S.

As ES&S is the only company who truly understands the intricacies of its products, ES&S requires the City of Toronto allow only certified ES&S Trainers and Support Professionals to successfully prepare and support Toronto Elections staff through the preparation and operation of its voting system products for their future City general or City by-elections.

As part of our ongoing efforts in remaining an industry leader, we can ensure the City that the unit prices offered by ES&S are no higher than those charged to any other of our customers of similar size and equipment configuration. ES&S makes annual efforts to ensure our market pricing is reflective of the current market constraints in order to bring to our clients pricing which will allow them to invest with ES&S.

We at ES&S appreciate and value our relationship with The City of Toronto. We look to the future and the release of new and exciting technologies which will allow us to better serve the needs of our partners.

If I can be of any further assistance, please let me know.

Very truly yours,

Dick Jablonski
VP, Finance

cc. Glenn Foote
cc. Gene Seets