CITY OF VANCOUVER

CITY CLERK'S DEPARTMENT
Access to Information & Privacy Division

File No.: 04-1000-20-2023-596

December 4, 2023

s.22(1)

Dear s.22(1)

Re: **Request for Access to Records under the Freedom of Information and Protection of Privacy Act (the "Act")**

I am responding to your request of September 23, 2023 under the ***Freedom of Information and Protection of Privacy Act*** for:

> **Records regarding the voting machines used in the most recent municipal election in Vancouver, including:**
> 1. **Manufacturer and model of machines used;**
> 2. **Assurance and proof of machine's integrity and reliability;**
> 3. **Procedure for auditing the machines;**
> 4. **Description of how the machine operates;**
> 5. **Information on whether the machines were connected to the internet, and**
> 6. **Process of oversight used to ensure transparency.**
>
> **Date range: Any dates relating to the municipal election held on October 15, 2022**

All responsive records are attached. Some information in the records has been severed (blacked out) under s.15(1)(l) of the Act. You can read or download this section here: http://www.bclaws.ca/EPLibraries/bclaws_new/document/ID/freeside/96165_00.

Under section 52 of the Act, and within 30 business days of receipt of this letter, you may ask the Information & Privacy Commissioner to review any matter related to the City's response to your FOI request by writing to: Office of the Information & Privacy Commissioner, info@oipc.bc.ca or by phoning 250-387-5629.

If you request a review, please provide the Commissioner's office with: 1) the request number (#04-1000-20-2023-596); 2) a copy of this letter; 3) a copy of your original request; and 4) detailed reasons why you are seeking the review.

Yours truly,

[Signed by Cobi Falconer]

Cobi Falconer, MAS, MLIS, CIPP/C
Director, Access to Information & Privacy
cobi.falconer@vancouver.ca
453 W. 12th Avenue Vancouver BC V5Y 1V4

If you have any questions, please email us at foi@vancouver.ca and we will respond to you as soon as possible. Or you can call the FOI Case Manager at 604-871-6584.

Encl. (Response Package)

:pm

CITY CLERK'S OFFICE
Election Office

MEMORANDUM

September 28, 2023

TO: Access to Information and Privacy Office

CC: Katerina Leckovic, City Clerk
Rosemary Hagiwara, Deputy City Clerk and 2022 Chief Election Official

FROM: Siobhian Heaney, Program Manager, Technology Services

SUBJECT: FOI Request File No. 2023-596

In response to the above noted FOI request, the requested information (for any dates relating the municipal election held on October 15, 2022) is outlined below.

	Information Requested	Response
1.	Manufacturer and model of machines used	**Manufacturer**: Dominion Voting Systems **Models**: three (3) models were used: • *ImageCast Precinct*: primary ballot reading device deployed are all physical voting places • *ImageCast Evolution*: ballot-marking device supporting accessible voting. One (1) of these devices was made available at each of two Advance Voting opportunities. • *ImageCast Central*: high-speed ballot reading device, deployed to support Vote-by-Mail program. These devices were used entirely within the City's Election Office where Vote-by-Mail ballot processing was available to view.
2.	Assurance and proof of manufacturer's	The manufacturer's integrity and reliability assurance is via the US Government's Election Assistance Commission and

	Information Requested	Response
	integrity and reliability	their system certification process. The list of registered manufacturers is publicly available here: https://www.eac.gov/voting-equipment/registered-manufacturers/dominion-voting-systems-corp Dominion Voting Systems' solutions are denoted under the Voting Systems column on the table as *Democracy Suite*.
3.	Procedure for auditing the machines	***Testing Before Voting*** **Logic & Accuracy Test:** Before the machines are deployed for voting, each device is tested for logic and accuracy. Logic & Accuracy testing encompasses the following: • Using formal, real ballots, vote ovals are filled across a set of ballots, known as a 'test desk'. The total number of ballots in a test deck is specific to each election and driven by total number of candidates. The vote ovals in a test deck are marked so that the following conditions can be verified: o Every oval on a ballot is filled in at least once within the test deck of ballots, and is read by the optical scanner on the voting machine o More ovals are filled for a given race than the maximum allowed (i.e., over-voted) o Fewer ovals are filled for a given race than the maximum allowed for that race (i.e., under-vote) o No ovals are filled for any race (i.e., blank ballot) o Random marks are made across the ballot both inside and outside the vote oval (i.e., ambiguous mark) o A repeatable pattern is produced on the results tape to ensure consistency • Each tester is provided with a test deck of ballots and testing worksheet. All test decks are marked in the exact same way and markings are checked both visually and by test runs through the voting machines, before formal

	Information Requested	Response
		testing begins, to confirm each test deck is exactly the same as every other test deck used • Logic & Accuracy testing is monitored by resources from the City's Internal Audit team Once testing begins: • The testing room is restricted to only designated testers • No tester is left alone in the testing room • The test decks remain in the testing room at all times • Each tester follows the steps on test worksheet (see record: *2022 Election - L&A Tester - Worksheet*) Voting machines remain in the secured room until issued to a Presiding Election Official (poll captain) for purposes of open the voting location. **Results Accumulation Test:** To ensure votes are correctly accumulated and accurate results are published, the vote accumulation process is tested using five (5) voting machines prior to the start of voting. The team, responsible for publishing results on the night of General Election Day after close of voting, is assembled. On the five (5) voting machines, this team follows the same steps as noted above for Logic & Accuracy testing to create vote data. Before the steps requiring the voting machine to be reset to zero (0), the testers: • remove the memory cards from the voting machines • download the practice vote data, using a memory card reader, into the proprietary devices and vote accumulation software • confirm that the vote data from each successive memory card is added to the previous data • confirm the aggregated results data is accurately formatted into the results display template • check that the data in the results display template is updated on the City's results web pages

	Information Requested	Response
		• advises the Chief Election Official of the successful completion of the vote accumulation process Upon successful completion of practice results, the vote accumulation software is restored to zero (0), in readiness for results after the close of voting on General Voting Day. Any voting machines used for the results accumulation test, are re-tested for logic & accuracy, re-zeroed and sealed as noted above. See record: *2022 Election - Results Accumulation Testing Form - 2022-10-05* ***After Voting*** After the close of voting, and in the lead up to statutory declaration of official results, a number of randomly chosen devices are selected for a logic and accuracy test to confirm machines are working in the same manner after the election as they were before the election. The testers follow the same steps as for the pre-vote Logic & Accuracy test to confirm the devices are working as expected. Upon successful completion of this post-vote test, the Chief Election Official is advised.
4.	Description of how the machine operates	Prior to voting: • Upon finalization of the candidate list and ballot layout, election races (i.e., Mayor, Councillor, Parks Commissioner, School Trustee) and candidate names are programmed onto encrypted memory cards which are inserted into the tabulator/ballot reader, tested and sealed into the machine as outlined above under Logic & Accuracy testing. At a physical voting place using the **ImageCast Precinct** model: • The voter's marked ballot is fed through the voting machine's optical scanner. The optical scanner detects

	Information Requested	Response

		markings within designated ovals adjacent to each candidate's name within each race.
		• The optical scanner identifies marks in the designated ovals and determines if there are any anomalies (i.e., over-vote, under-vote, blank ballot, ambiguous mark)
		  o If no anomalies, the voting machine accepts the ballot, displays "ballot cast" on the LCD screen, adds the new votes on the memory cards and drops the voted ballot into the sealed ballot box
		  o If an anomaly is detected the ballot will be returned out of the optical scanner's feed path and a message will display on the LCD screen and identify what actions are available:
		  ▪ If ballot is *over-voted*, the voter is given the option to re-mark a new ballot, or the over-vote can be over-ridden. If the voter chooses over-ride, then all votes will be counted except for those in the over-voted race
		  ▪ If the ballot is *under-voted*, the voter may take their existing ballot and add votes up to the maximum allowed for the given race, and return to have their ballot fed. The voter can also choose to over-ride, at which point the ballot is cast, and all votes are counted.
		  ▪ If a ballot is *blank*, the voter may take their existing ballot and add votes up to the maximum for a given race, and return to have their ballot fed. The voter can choose to over-ride, and the ballots is cast, and no vote totals are updated
		  ▪ If the ballot is deemed to have *ambiguous marks*, the ballot cannot be over-ridden. The voter can chose to have a replacement ballot issued or the existing ballot can be declared spoiled and returned to the Presiding Election Official.
		• Votes are accumulated on the programmed memory cards throughout the day and cast ballots remain in the

	Information Requested	Response
		attached ballot box. Memory cards remain sealed in the machines until they are returned to the Chief Election Official after the close of voting. More detail on how the ImageCast Precinct operates is available here: https://www.dominionvoting.com/imagecast-precinct/ Where a voter requires assistance to mark their ballot using the **ImageCast Evolution** ballot marking device: • The voter is issued a ballot and directed to the ImageCast Evolution • Using headphones, the voter listens to the audio listing of the races and candidate names. • Using the available accessibility tools (i.e., paddles, sip/puff device) and following the audio prompts, the voter makes their selection. • Once the voter indicates that their selection is complete, the machine will mark their votes on the voter's ballot and return the ballot to the voter • The voter then proceeds to the ImageCast Precinct where they feed their ballot, as other voters have done. The ballot marked by the ImageCast Evolution device is indistinguishable from other marked ballots More detail on how the ImageCast Evolution operates is available here: https://www.dominionvoting.com/imagecast-evolution/ When voting via the Vote-by-Mail program: • The voter submits their ballot in accordance with Vote-by-Mail program instructions • Once the Vote-by-Mail package has been received and appropriate verification steps completed, the ballot is gathered with other mail ballots into bundles of a specified size.

	Information Requested	Response
		• The bundles of ballots are fed into the optical scanner of the ImageCast Central, and votes are captured on memory devices in the same manner as that for the ImageCast Precinct devices. More detail on how the ImageCast Evolution operates is available here: https://www.dominionvoting.com/imagecast-central/
5.	Information on whether the machines are connected to the internet	None of the voting machines are ever connected to the internet. The voting machines, or tabulators, are stand-alone devices, they do not have internal modems and therefore no connection to the internet is enabled.
6.	Process of oversight used to ensure transparency	A variety of protocols are in place to ensure integrity and transparency: • Candidate names and filing papers are published as part of the candidate nomination process • The drawing of candidate names to determine random order of names on the ballot, for each race, is a public event and is livestreamed. Physical security: • Final approved ballots are physically secured in a restricted area, during the entire voting lifecycle and through the statutory challenge and judicial recount periods. Issuing of ballots to voting place locations is carefully logged and all ballots, whether voted or unused, are returned to the Election Office • Upon receipt of voting machines, machine serial numbers are logged and used to track machines throughout the election process (see attached record *Vote Counting Equipment Testing & Verification Form - Excerpt Pg 1*) • Once received onsite by the Chief Election Official at the City's Election Office, all ballot tabulators are secured in a restricted area with access limited to the Chief Election

	Information Requested	Response
		Official, Deputy Chief Election Official, the Voting Technology Team (program manager and business analyst). Entry to the physical space is controlled via access cards/control panels. • Programmed memory cards are secured inside the voting machine upon successful completion of logic & accuracy testing on that machine. Memory media is secured within the voting machine by affixing serial numbered tamper-proof seal over the memory media slots; the serial number for the tamper-proof seal is tracked along with the device to which it is affixed (see attached record: *Vote Counting Equipment Testing & Verification Form - Excerpt Pg 1*) • Memory cards remains sealed within each device until the voting machine is returned to the Chief Election Official after close of voting. • In the event that a voting machine experiences operating challenges, it may need to be repaired or replaced in order for voting to continue. A technical support resource is sent to the location, then determines the corrective action required to restore voting and may need to access the memory cards or memory cards slot, and in turn, the tamper-proof seal may need to be broken. Where the seal needs to be broken to complete a repair, or to replace an inoperable device, the technician and Presiding Election Official follow the replacement procedure and document the updates to the device and/or tamper-proof seal serial numbers. (See attached records: *2022 Election -Voting Technology - Tabulator Replacement Procedures - 2022-09-30* and *2022 Election - Declaration of Broken Seal - VP2 Carnarvon - 2022-10-15*) • Upon receipt of machines after close of voting, device is inspected for tampering, both the device and tamper-proof seal serial numbers are checked against a master log, before authorized resources break the seal and remove the memory media for purposes of extracting and publishing results data • When machines need to be moved from the secure area for purposes of voting, they are issued into the custody of

	Information Requested	Response
		the Presiding Election Official for that voting location. The voting machine remains in the custody of the Presiding Election Official and is returned to secure custody upon completion of voting. • Vote-by-Mail ballot processing was undertaken at specified times in public view Data security: • Machine logic resides on the programmed memory media; machines cannot function without a programmed memory cards • Memory cards are encrypted • Each voting machine has a primary memory card and a back-up memory card; both are sealed in the voting machine • Critical voting machine functions require passcodes (i.e., open poll, close poll, etc.). Passcodes are only provided to those Election Officials who are specifically responsible for those specific tasks. • Security features are embedded in the ballot design and restrict the ballots the machine will read to only those ballots authorized for that particular election event. Unauthorized ballots or ballots from another jurisdiction will be returned by the voting machine. • Vote data remains encrypted throughout the post-voting downloads and can only be read by proprietary software on a computer whose network/wifi connection functions have been disabled • Memory cards are physically secured on City of Vancouver premises after the close of voting and download of the vote data. Data is maintained in accordance with statutory requirements outlined in the relevant legislation o Local Elections Campaign Finance Act o Vancouver Charter o City's Election By-law • Multiple copies of the results tape are produced after close of voting with each copy of the tape having a designated location (i.e., with voting machine, with poll

	Information Requested	Response
		captain's portfolio, with secured voted ballots, etc.). The results tapes are used for cross-reference purposes in other processes (i.e., confirmation data during results accumulation, reconciling total ballots cast or returned, etc.)

IMAGECAST® CENTRAL

Efficient & Scalable Central Count System.

EFFICIENT

Uses industry-leading COTS hardware to decrease costs and minimize risk of failure.

SIMPLE

Intuitive software that uses touchscreen navigation and requires minimal training.

FLEXIBLE

Modular and scalable to an election of any size - meeting the needs of all jurisdictions.

SECURE

Meets EAC security standards to preserve integrity and auditability.

Get in touch
1. 866. 654. VOTE (8683)
sales@dominionvoting.com
www.dominionvoting.com

DOMINION VOTING

FEATURES & BENEFITS

Streamline Central Count Processes

- Ballots, scanned in batches, are processed based on jurisdictional requirements and preferences.
- Once scanned, ballots with out-stack conditions are automatically sent to the Adjudication application for digital ballot review.

Engineered Simplicity

- The operator loads a batch and presses "scan" - simple! When the batch is complete, the operator presses "accept" - easy!
- Simple set-up procedures and easy to follow maintenance schedules ensure ongoing performance throughout your election cycles.

System Flexibility To Meet All Needs

- Provides ample flexibility to meet the needs of small, medium and large jurisdictions.
- Ability to add multiple commercial scanners to increase efficiency without breaking the bank.

Scanning Reliability

- Features AuditMark® ballot image auditing capability that retains a secure digital image of every ballot cast.
- Can be used in conjunction with the Adjudication digital ballot review application.

FLEXIBLE HARDWARE

CANON M260

Low Cost and Highly Scalable

Fully Integrated with ImageCast Central Software

Scans single-sided and double-sided 11" to 22" ballots

Up to 120 images per minute depending on settings

CANON G2140

Mid-range Cost and Highly Scalable

Fully Integrated with ImageCast Central Software

Scans single-sided and double-sided 11" to 22" ballots

Up to 200 images per minute depending on settings

INTERSCAN HIPRO

Single unit for high capacity needs

Fully integrated with our ImageCast Central Software

Small footprint of approximately 16 square feet

Scans single-sided and double-sided 11" to 22" ballots

Dual input trays for continuous scanning

Up to 300 images per minute depending on settings

Different Capacity Hardware Options

Makes use of industry-leading commercial off-the-shelf (COTS) hardware to decrease capital costs, minimize risk of hardware failure and improve maintainability.

Most central count solutions that exist in the market today are large, expensive, proprietary solutions that are not scalable, efficient, or easy to maintain - the ImageCast® Central is the opposite.

SCALABLE & EFFICIENT

The ImageCast® Central is the most **cost-effective system that offers efficiency, scalability and flexibility;** no matter the size or complexity of the jurisdiction.

"The new system has enhanced our ability to deliver efficient elections for the citizens of Denver. We achieved our key objectives, which included innovating the voter's experience, increasing operational efficiencies, and enhancing transparency."

Amber McReynolds, former Director of Elections, Denver Elections Division

"The HiPro has been a reliable workhorse for us. In November 2018 we scanned 2.5 million ballot cards on the HiPro in the same amount of time it took us to scan 500,000 cards on a different system in 2016. I have no hesitation in recommending the HiPro to other election officials as a solution for the need to accurately scan high volumes of ballots in a short amount of time."

Scott O. Konopasek, Assistant Registrar Contra Costa County California

The ImageCast® Central tabulates paper ballots, quickly, accurately, and transparently. Engineered for simplicity, the system images each ballot, documents all marks, and appends the digital ballot image with an AuditMark summary of voter selections. COTS hardware decreases capital costs and minimizes hardware risks. When paired with our **ImageCast® Adjudication,** ballots that require voter intent resolution are handled efficiently and transparently, helping you maintain maximum throughput with minimal effort.

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www.dominionvoting.com

IMAGECAST® EVOLUTION

The most advanced all-in-one optical scan tabulator & ballot marking device.

ACCESSIBLE

Only one unit to deploy for standard and accessible voting that also uses a single ballot path.

EFFICIENT

Features a single unit for all your precinct voting needs - saving you time, money & storage space.

SIMPLE

Attractive and intuitive 19" touchscreen for easy navigation by poll workers and voters.

SECURE

Meets EAC security standards to preserve integrity and auditability.

Get in touch
1. 866. 654. VOTE (8683)
sales@dominionvoting.com
www.dominionvoting.com

FEATURES & BENEFITS

Streamline In-person Voting

- All-in-one tabulator and accessible ballot marking device, that is easier to maintain, store and transport while reducing annual operational costs.
- Clear voter messages to enable second-chance voting and minimize spoiled ballots.
- Features AuditMark® ballot image auditing capability that retains a secure digital image of every ballot cast.

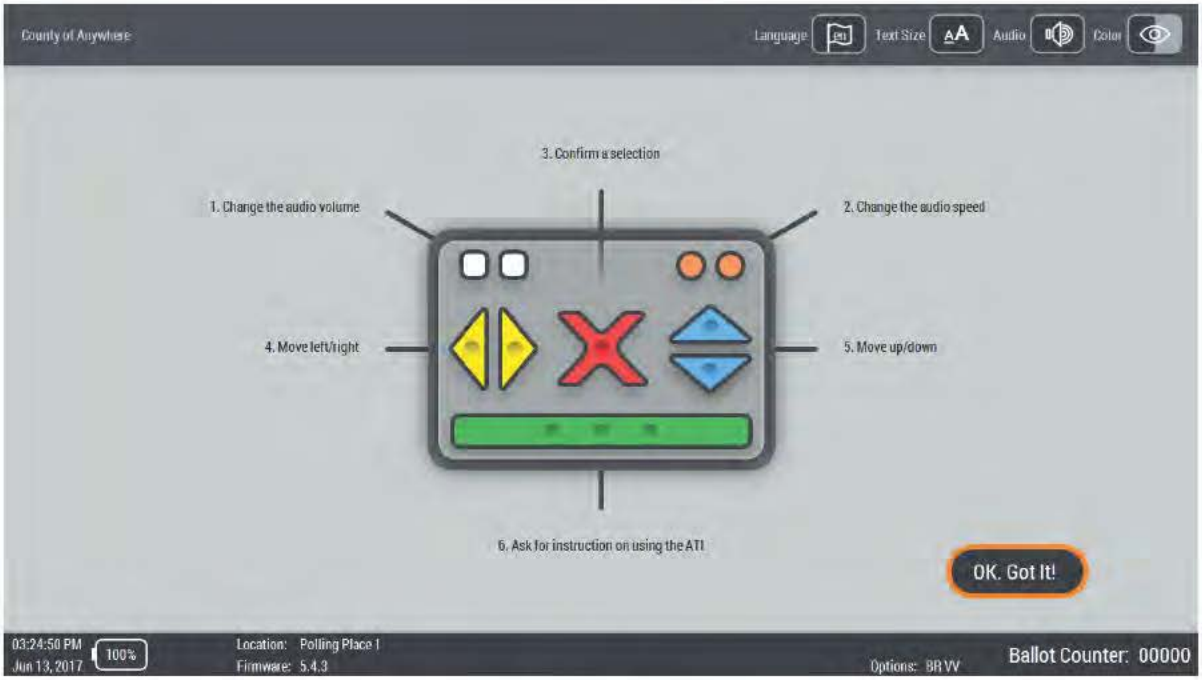
Engineered Simplicity

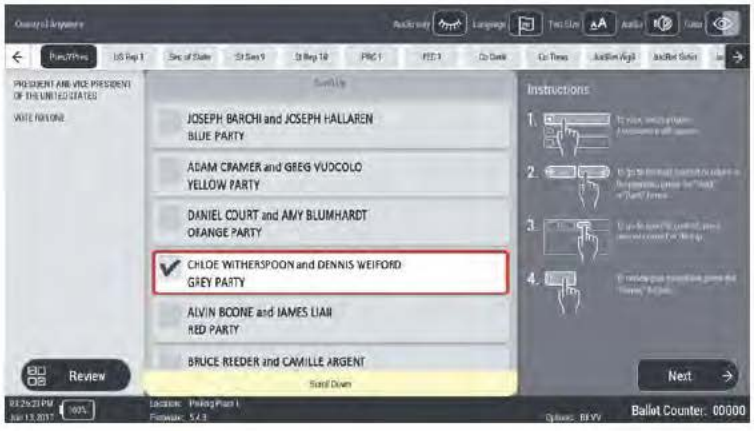
- Designed to be plug-and-play, making it easier for poll workers to understand and set up.
- Intuitive 19" touchscreen for easy navigation.
- Reads single and double-sided ballots in all four orientations.
- Safely stores and tabulates hand-marked ballots and ballots marked using the ImageCast® X.

Universal Voting Technology

- Optional integrated ADA compliant configurations, providing all voters with privacy and independence.
- Everyone uses the same ballot on the same machine, eliminating the use of multiple machines when voting.
- A library of human-hand marks and writing is used to mark ballots, further protecting voter privacy.

ACCESSIBILITY OPTIONS





Accessible Marking Solutions

Accessible, audio-visual ballot marking interface, supporting a range of assistive input devices, including ATI (Audio-Tactile Interface), sip-and-puff, paddles, etc., that can be used simultaneously with the touchscreen display on the ImageCast® Evolution.

The ImageCast® Evolution can continuously scan ballots while the optional secondary display is used for an accessible voting session.

ONE SYSTEM FOR ALL

OBSERVERS

AuditMark® technology provides complete transparency and auditability. The system digitally stores an image of every ballot cast, along with a clear record of how the tabulator interpreted each vote.

VOTERS

Everyone uses the same paper ballot on the same device.

One unit to set up and train on.

POLL WORKERS

LOGISTICS STAFF

One unit to store and transport.

Save time with lower annual costs.

ELECTION OFFICIALS

The ImageCast® Evolution is the only all-in-one **precinct-based optical scan tabulator featuring a fully integrated ballot-marking device,** making it a universal voting system that provides genuine equal access to all voters, with the added benefit of having one unit for all of your precinct voting needs.

Get in touch
1. 866. 654. VOTE (8683)
sales@dominionvoting.com
www.dominionvoting.com

DOMINION VOTING

IMAGECAST® PRECINCT 2

EFFICIENT

Compact, lightweight, easy to store, and low maintenance.

SIMPLE

Color LCD touchscreen displays intuitive instructions for ease of use.

SECURE

Lockable doors and multi-factor authentication prevents unauthorized access.

INTEGRATED

Driven by Democracy Suite® EMS software, with flexible configurations.

Get in touch

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sales@dominionvoting.com
www.dominionvoting.com

LIGHTWEIGHT AND VERSATILE

Upgraded with today's technology, the ImageCast® Precinct 2 builds upon the legacy of its trusted and proven predecessor. A faster processor, quicker scan speeds, longer battery life, and more intuitive functionality, the ImageCast® Precinct 2 sets the new standard for optical scan tabulators in the elections industry.

FEATURES AND BENEFITS

Engineered Simplicity

- Color LCD screen displays clear voter messages enabling second-chance voting and minimizing spoiled ballots.
- Reads single and double-sided ballots in all four orientations.
- Accepts hand-marked ballots and ballots marked using the ImageCast® X.
- Integrated physical diverter that automatically segregates ballots containing write-ins, saving time after the polls close.
- Scans double sided ballots in 3-5 seconds.
- LED lights easily identify power and port status.
- Compatible with a variety of collapsible and rolling secure ballot boxes.

Security Features

DOMINION SECURE

- Multi-factor authentication.
- I-Button Security Key programmed for each unique election event.
- Lockable port and memory card doors.
- Audit Trail records all tabulator activity.
- Built in Infrared Sensor reads IR Security Paper to detect fraudulent ballots.

SPECIFICATIONS

- Unit Dimensions (17" x 13" x 3.5")
- Storage Dimensions (18" x 18" x 8")
- Weight (14 lbs)
- Upgraded iMX6 Dual Core Processor
- Scans double sided ballots in 3-5 seconds
- 5.7" Color Touchscreen LCD
- 1GB DDR3L Memory
- Up to 4 USB 3.0 and 2 USB 2.0 Ports
- Thermal Report Printer
- Color LED Indicators
- Internal battery life of 6 hours

Ensuring Accurate & Transparent Elections

Every ballot image is appended with Dominion's exclusive AuditMark® technology. The system digitally stores an image of every ballot cast along with a clear record of how the tabulator interpreted each vote, ensuring a completely transparent and auditable election.

All results and ballot images are stored on encrypted memory cards. No identifying information about the voter is recorded by the tabulator.

V-3.9.2023

Get in touch
1. 866. 654. VOTE (8683)
sales@dominionvoting.com
www.dominionvoting.com

Logic & Accuracy Testing – Tester Worksheet

Tester Name: _____

Logic & Accuracy Testers should use this worksheet to ensure each step has been completed for each device. Testers should note the Voting Place number at the top of each column, and check ☑ each box as they proceed through the steps.

Testers please note:

- Testers will test the first 3-5 ballot tabulators as a group to confirm test instructions are accurate and ensure consistency between testers' procedures
- Use *only* blue ink pens for this worksheet and the testing log
- NEVER power up device before memory cards are fully inserted
- Use power adaptor for each device to test ALL adaptors
- Always do L&A with device plugged into power
- Use individual security keys to test ALL security keys
- No one is to be alone in the ballot tabulator room during the L&A period
- For security reasons, L&A materials, including Tester Worksheets must remain in the Tabulator Room at all times

Proceed to the testing instructions below.

#	Steps	Voting Place #														
1.	Select ballot tabulator to be tested from a shelf, and the corresponding set of two (2) memory cards:															
	• Confirm that the serial number noted on the *Verification Form* is correct (see panel on right side of device)															
	• Open the front panels to the memory card slots, insert Cards 1 and 2 into their respective slots. Cards should be facing down; ensure ejector tabs are fully extended															
	• Plug the adaptor into a power bar, then the port at the rear of the device; device will boot up. If device does not boot up automatically, press the Power On at the back of the device															
2.	When prompted by beeping and LCD screen message, hold the tabulator key to the **Security Key** spot: • Enter **Open Poll** passcode: **XXXXXX**, then Enter															

3.	Prompt to check time and date appears: • Check that the time is accurate – reference the time on your mobile phone o If not, press *No* and follow prompts to correct time o If yes, press *Yes* • Screen indicates verifying election files																
4.	Admin menu appears: • Select **Open Poll** from menu on screen, then **Enter** • Zero tape prints, press **No** to decline further copies																
5.	Screen reads **System Ready**																
6.	Feed test deck of ballots into ImageCast Precinct device: • Ballot Style #1 (City) – xx** ballots • Ballot Style #2 (UEL) – xx** ballots ***Note**: the total number of ballots in the test decks is driven primarily by the total number of candidates*																
7.	Hold tabulator key to **Security Key** spot: • select **Close Poll** from screen • enter **Close Poll** passcode: **XXXXXX**																

8.	Results tapes auto-generate – device is programmed to print 4 tapes so allow all 4 copies to print to test that programmed number of tapes print. Cut tape off at end of 1st results tape and discard the rest															
9.	Check tape results data against spreadsheet to confirm accuracy: • If accurate, proceed to step 10 • If NOT accurate, review test deck, confirm full deck has been fed, confirm total ballots cast total, confer with other testers, vendor support resource, etc.															
10.	Re-zero the tabulator be following these steps: • Select **Utilities** from the screen • Enter re-zero passcode: **XXXXXX**, then **Enter** • Check that ballot counter on Admin menu reads '0' • Write on tape "rezeroed – initials – date/time" • Fold tape accordion-style, so that top of tape with header info is easily visible • Place folded tape in box provided															
11.	Select a numbered tamper-proof seal: • Record seal number on **Verification Form** • Affix numbered seal to memory card panel slots															

12.	Remove power adapter from rear of device: • Confirm that plug icon at top left of screen changes to battery icon • Confirm that battery icon reflects full charge															
13.	Lift panel over thermal paper roll, check level of paper left; replace roll as needed															
14.	Press **Power Down**, press **Yes**															
15.	Affix small **City of Vancouver** label over the hinged door on the right side of the tabulator and return ICP to its designated shelf – there is no need to plug devices into power; coil power cord/adaptor to ready for packing of bag															

CITY OF VANCOUVER

CITY CLERK'S DEPARTMENT
Election Office

Results Accumulation & Display Testing

On Wednesday, October 5th, 2022, a Results Accumulation & Display Test was conducted in accordance with Election By-law No. 9070 and as outlined in the *2022 By-election Testing Procedures for Vote Counting Equipment* document. The purpose of this test is to confirm that the process for accumulating vote data, and publishing of same, is working accurately.

The test is performed using the same components (i.e., software, computers, memory cards, etc.) to be used on the night of General Voting, Saturday, October 15, 2022.

The following devices were used in the Results Accumulation & Display Test conducted on Wednesday, October 5th, 2022:

- Dominion Voting Systems, Lenovo T430 laptop, s/n #00330-71249-64323-AAOEM
- Democracy Suite, version 5.5
- City of Vancouver, PC unit #172427
- Kingston, DataTraveler Exodia, 128GB USB memory sticks

The following City of Vancouver resources participated in the results accumulation and display process test:

- Tamarra Wong, Deputy Chief Election Official
- Siobhian Heaney, Program Manager - Elections, City Clerk's & Council
- Maria Pin, Business Analyst - Elections, City Clerk's & Council
- Kelvin Lau, Technical Lead, Digital Channels
- Burnice Cheung, Programmer/Analyst, Digital Channels

Oct 5/22

Siobhian Heaney
Technology Services,
Program Manager, Elections, City Clerk's & Council
City of Vancouver

Date

CITY OF VANCOUVER

Vote Counting Equipment Testing & Verification Form

Voting Place #	Voting Place Location	Tabulator SERIAL Number	Tamper-proof SEAL Number	Logic and Accuracy Test: Certified by (initials)	Logic and Accuracy Test: Test Date	Election Day Verification (Oct 15, 2022): New SERIAL Number if different	New Tamper-proof SEAL number, if different	No Results Tape (X)	Verified by (pls initial)	Verification Time
1	Prince of Wales Secondary School	AAFAJHU0407	97618	LMP	9/22					
2	Carnarvon Community Elementary School	AAFAJHU0127	86470	LMP	9/22	~~AAFAJHS0095~~	93279 SH		LB	10:49p
2	Carnarvon Community Elementary School	AAFAJHH0103	86468	LMP	9/22.					
3	Gathering Place Community Centre	AAFAJGU8146	86469	LMP	9/22					
3	Gathering Place Community Centre	AAFAJFR0107	75504	LMP	9/22	AAFAJFR0107	75504		LB	11:12p
4	Carnegie Community Centre	AAFAJHJ0112	92181	SH	SEP 23					
4	Carnegie Community Centre	AAFAJHU0015	76558	LMP	Sept 23	AAFAJHU0015	76558			
5	Coal Harbour Community Centre	AAFAJGU8244	76554	RH	sep 23	AAFAJGU8244	76554		LB	10:07p
5	Coal Harbour Community Centre	AAFAJHU0320	76553	RH	Sep 23					
6	Crosstown Elementary School	AAFAJHU0361	68040	SH	SEP 23	AAFAJHU0361	68040		LB	9:45p
6	Crosstown Elementary School	AAFAJHV0023	76555	RH	Sep 23					
7	Vancouver Public Library - Central Branch	AAFAJHO0505	76556	RH	Sep 23					
7	Vancouver Public Library - Central Branch	AAFAJHS0277	92182	SH	SEP 23	AAFAJHS0277	92182		LB	9:52p
8	Roundhouse Community Arts & Recreation Centre	AAFAJHW0154	76557	RH	Sep 23					
8	Roundhouse Community Arts & Recreation Centre	AAFAJFR0116	86402	LMP	Sep 23	AAFAJFR0116	86402		LB	10:18p
8	Roundhouse Community Arts & Recreation Centre	AAFAJHC0143	86401	LMP	Sep 23	AAFAJHC0143	86401		LB	11:-
9	Musqueam Community Centre	AAFAJFR0105	82023	SH	SEP 23					
10	Lord Kitchener Elementary School	AAFAJGA0440	82021	SH	SEP 23					
10	Lord Kitchener Elementary School	AAFAJHS0141	88337	LMP	Sep 23	AAFAJHS0141	88337		LB	9:47p
11	Dunbar Community Centre	AAFAHM0278	86477	LMP	Sep 23	AAFAHM0278	86477		LB	9:47
11	Dunbar Community Centre	AAFAJHS0359	82025	SH	SEP 23	AAFAJHS0359	82025		LB	11:17p
11	Dunbar Community Centre	AAFAJHT0002	175635	SH	SEP 23					
12	False Creek Elementary School	AAFAJGM7662	85418	LMP	Sep 23	AAFAJGM7662	85418			
12	False Creek Elementary School	AAFAJHC0144	86478	LMP	Sep 23	AAFAJHC0144	86478			
13	False Creek Community Centre	AAFAJHS0436	88333	SH	SEP 23	AAFAJHS0436	88333		LB	9:44p
13	False Creek Community Centre	AAFAJHU0101	88334	SH	SEP 23					
14	Holy Trinity Anglican Church	AAFAJGZ8886	85415	LMP	Sep 22	AAFAJGZ8886	85415		LB	10:52p
14	Holy Trinity Anglican Church	AAFAJHD0179	86479	LMP	Sep 23.					
15	L'Ecole Bilingue Elementary School	AAFAJHP0210	73479	tbm	Sep 23/22					
15	L'Ecole Bilingue Elementary School	AAFAJGZ9027	86480	tbm	Sep 23/22	9027	86480		LB	9:24p

CITY OF VANCOUVER

Voting Place #: 2

Voting Place Name: Carnarvon Community Elementary School

DECLARATION OF BROKEN SEAL

PLEASE PRINT

Instructions: This form is to be used in the event of Ballot Tabulator problems and the voting unit is replaced by a technician. Please call the Election Office immediately to notify of a replacement unit.

I, Colleen Hua ; declare that:
NAME OF PEO OR APEO

Tabulator unit, serial number 40-AAFAJHH0103

Number of votes/public count 4

Barcode sticker security seal numbers 86468

was removed under the following circumstances:

CONSTANT MIS-READS

and a replacement unit was installed.

The new serial number of the replacement tabulator unit is AAFAJHS0095. (Tab 150)

The new barcode sticker security seal number(s) are 93279.

Oct 15, 2022
DATE

10:25 am
TIME

Colleen Hua
SIGNATURE OF PRESIDING ELECTION OFFICIAL OR ALTERNATE PRESIDING ELECTION OFFICIAL

SIGNATURE OF WITNESS

2022 Election – Procedures for Replacing a Ballot Tabulator During Voting

In the rare event that a tabulator becomes inoperable during voting, the tabulator may need to be replaced. To ensure the integrity of the election is maintained, it is critical that the steps to replace a non-working device are clear, transparent and conducted publically, so that no cause for suspicion is created.

Presiding Election Official (PEO) Responsibility

- Should your tabulator stop working, follow the steps to open the Auxiliary compartment of the ballot box; secure electors' marked ballots there until tabulator service is restored
- Ensure any onsite Scrutineers are advised of the steps taking place as the technician works
- Once tabulator service has been restored, ensure all ballots secured in the Auxiliary compartment are retrieved and fed through the tabulator, then seal the compartment and affix yours and the witness' signature to the seal
- Ensure the *Declaration of Broken Seal* form is completed; file it in your PEO Portfolio

Technician Responsibility

- Upon arrival at Voting Place, find the PEO and identify yourself
- Assess technical issue and remediate the issue, if possible
- If not possible, advise the PEO that replacement is the only option to restore tabulator availability
- In conjunction with PEO, follow replacement procedures
- Ensure the non-working tabulator is returned to its original case before returning it to the Election Office, along with a copy of the *Declaration of Broken Seal* form

IMPORTANT: ALL votes captured from ballots cast on tabulator remain on the memory cards inserted into the tabulator, and not in the device itself.
NO VOTE DATA WILL BE LOST

Procedures for Replacing a Tabulator

The following steps should be conducted in plain view of any Scrutineers onsite, with verbal descriptions of the steps in the procedure being undertaken and the resulting action. If no Scrutineers are present in the Voting Place, the PEO should invite the APEO to witness the procedure.

The PEO and technician should take all reasonable steps possible to minimize exposing any voted ballots, whether in the cast ballot compartment or the Auxiliary ballot compartment.

Steps to Replace a Tabulator During Voting

☑	#	Steps
	1.	On the *Declaration of Broken Seal* form, record the: • Voting Place # • Voting Place Name • Tabulator serial number • Tamper-proof seal number that is securing the memory card compartment
	2.	On the device that is to be replaced, check the **Ballots Cast** indicator on the tabulator screen, and record number of votes
	3.	Pull the tabulator unit forward slightly on the ballot box, unplug the power cord
	4.	Remove the tamper-proof seal from the memory card compartment doors and open both doors
	5.	Push the black ejection button inside each memory card compartment - this will eject the memory cards from the slots
	6.	Remove the two (2) memory cards by pulling them forward - hand them to the PEO to hold
	7.	Place the non-working tabulator in its original case
	8.	Place the replacement tabulator on the ballot box
	9.	Insert the same memory cards removed from the first unit. Ensure the memory cards are returned to the correct slots (i.e., Card 1 in Slot 1, Card 2 in Slot 2)
	10.	Close doors on both memory card compartments
	11.	Plug power adapter into the replacement ballot tabulator, and slide the tabulator carefully back onto the ballot box. The tabulator may take several minutes to power up.
	12.	Once the tabulator is powered up, the PEO should re-open the polls on the device
	13.	The PEO should record the following on the *Declaration of Broken Seal* form: • The serial number of the replacement tabulator • The serial number of the NEW tamper-proof seal affixed to the memory card compartment
	14.	The PEO and witness sign the Declaration to verify that the above procedure was followed and the new unit is operating as expected.
	15.	The technician returns the non-working tabulator to its original case, and brings them and their copy of the completed form back to the Election Office
	16.	At the Election Office, the *Vote Counting Equipment Testing & Verification Form* are updated to reflect the new serial and tamper-proof seal numbers for that Voting Place location. (This form is referenced by the audit/check-in team after close of voting on General Voting Day before memory cards are extracted and results are generated for publishing.)

Voting Technology Assistance Line: s.15(1)(l)