Electronic Voting Task Force
Report
31 December 2021

To investigate the feasibility, security, costs, and outcomes of electronic voting technology and processes.

History
In 2019 the Longmeadow Rules Committee took to the task of researching electronic voting. In doing so, they identified a significant number of towns throughout the Commonwealth of Massachusetts that have converted their voting by ballots, raising hands, raising paper voting cards and even vocal voting to a more simpler and efficient voting system. They also identified four vendors/service providers of such systems to wit: Quizdom, Option Tech, Turning Point and Meridia.

The Rules Committee contacted these vendors and requested they conduct separate one-hour presentations to committee members in session and provide any and all information related to how their systems may be applicable to the needs of the town of Longmeadow as it relates to the voting in town meetings. The presentations were conducted and committee members queried the different companys in matters as to security, accuracy, speed, convenience, integrity, the potential for external unauthorized manipulation ("hacking") and pricing. As we ran into 2020 and the beginning of the COVID-19 pandemic, all work came to a temporary halt.

During the first few months of 2021 as protocols and Online platform meetings provided access and work resumption, the Town Moderator issued a call for applicants and convened this task force in April 2021 to further the efforts in researching the applicability of electronic voting.

In its charge, the task force was to investigate the feasibility, security, costs, and outcomes of electronic voting technology and processes.

Again, an invitation was sent to all previously identified vendors for a presentation to the task force. Turning Point and Meridia were the only ones to respond and accept the invitation. In an additional effort to open the competition, an invitation was also posted on social media. Crawlpost answered and offered a presentation as well.

On or about 16 April 2021 Meridia conducted their presentation via an online video platform.

On or about 30 April 2021 Turning Point conducted their presentation via an online video platform.

On or about 7 May 2021 Crawlpost conducted their presentation via an online video platform.

In all of these sessions, the vendors were queried on the criteria set forth by the task force in order to consider moving forward.

Crawlposts' platform and software, as internet driven, at this time lacks the security and integrity

parameters necessary for the application that we are seeking. Therefore, this vendor fails to meet our criteria.

Turning Point and Meridia have similar competing systems that meet all of our criteria. They both provide voting cards with dedicated receivers, dedicated radio frequencies, exclusive software, and data control.

Meridia vs Turning Point where they differ:

Meridias' voting card has fewer buttons and a confirmation signal right on the device for voter reassurance.
Meridia offers their cards for a set price to include software-updating service at no additional costs. (See pricing below)

List of towns that have contracted with Meridia
1. Leicester, MA
2. Stow, MA
3. Sterling, MA
4. Rutland, MA
5. Lanesborough, MA
6. Charlton, MA
7. Uxbridge, MA
8. Bellingham. MA
9. Hamilton, MA
10. Wenham, MA
11. Lunnenburg, MA
12. Boylston, MA
13. Lancaster, MA
14. Princeton, MA
15. Sturbridge, MA
16. Berlin, MA
17. Holden, MA
18. Lee, MA
19. Conway, MA
20. South Hadley, MA
21. Orange, MA
22. Northbridge, MA
23. Ware, MA
24. Raynham, MA

Turning Point offers their cards and software at a cost but also requires a yearly licensing fee (see pricing below)

List of towns that have contracted with Turning Point
1. Avon
2. Belmont
3. Dover

4. Dudley
5. Duxbury
6. Falmouth
7. Ipswich
8. Lynnfield
9. Manchester-By-The-Sea
10. Newbury
11. Rockport
12. Sherborn
13. Stoughton
14. Webster
15. Westwood
16. Whitman
17. Winchendon
18. Nahant

Criteria
Easy/uncomplicated
An independent device (a.k.a. Voting card) with Yes or No or Abstain buttons to depress upon exercising their vote

Security
An independent software not tied to the internet controlled exclusively by town officials (ie: Town Clerk or designee) with dedicated receiving devices also controlled by town officials. The voting cards transmit their signal to the receiver on a dedicated frequency only while the question or warrant is open for voting for approximately 15 - 30 seconds more or less at the Town Moderators' discretion.

Accuracy
Once the question is opened for a vote, legally registered constituents who have received a voting card will vote "Yes" or "No" or "Abstain" by depressing the appropriate button. Voters may change their vote only while the question or warrant is open for voting. Once the Town Moderator closes the voting, all votes are locked in and no further changes can be made.

Secrecy
Every voter is entitled to cast a secret vote and this is accomplished by simply depressing a button on a small device in the absence of peer pressure. If at any point, the voters deem necessary to cast a paper ballot vote, that prerogative remains intact and executable via the town's By Law 3-324.

Speed
Any and all questions to be voted on will be afforded ample time for voters to make their selection. However, once the matter has been explained and discussed and brought to a vote, it only takes a few seconds to secure an accurate and precise vote. Should there surface a need for a recount, it would only require a few more seconds for the vote in lieu of the previous hand count process by designated "counters".

Integrity
The system must afford transparency, honesty and fairness with restrictive access and exclusive operational control by authorized town officials ie: Town Moderator, Town Clerk or designee.

Pricing
Turning Point
To rent 1,000 keypads, lanyards, sleeves, software, and a receiver: $4,000 plus shipping. (Basically, $4 per card per day).
Onsite assistance would require an additional $3,990 plus actual travel costs of flights, lodging, transportation, and $65 per diem for each day. Typically onsite costs would be half this price, but we would need two technicians to properly accommodate the expected number of people.

No subscription with renting. Only subscriptions with purchase. A standard quote we provide to towns is $25/card, $4/subscription seat. multi-year deals for $0.50 discount/seat/year are offered. (See chart below)
Purchasing a 5-year subscription essentially saves you $6,000.

Renting often makes sense for larger towns but some of the larger towns are able to use TurningPoint throughout their town. They purchase the subscription and rent if/when they need additional clickers at that $4 price.

Meridia

EZ-VOTE 5 SYSTEM QUOTE
Item
EZ-VOTE 5 Keypad 1000 USB $25.00ea $25,000.00
Receiver 2 $295.00ea $590.00
50-KP Soft-Shell Bag 20 $35.00ea $700.00
EZ-VOTE Software -
No Subscription, No Annual Fees $0.00
12-Month Support and Instructor-Led Training $0.00
Promotion Discount -$250.00

Onsite Training and Staffed Support
for First Town Meeting. $4,500.00 Included
Shipping* $185.00
Tax $0.00
Total in USD: $26,225.00

During the course of the research, the Task Force queried the vendors as to the security of the systems as it relates to encryption. Curiously, Turning Point wasn't aware of the capability to encrypt data and or radio frequencies. Herein a brief definition and applicability of the concept.

Encryption is the process of encoding information (in this case audio signals) in such a way that eavesdroppers or hackers cannot understand it, but authorized parties can access it. In two-way radios, encryption modifies a voice signal using a coding algorithm. This algorithm is controlled by an encryption key.

Data encryption translates data into another form, or code, so that only people with access to a secret key (formally called a decryption key) or password can read it. Encrypted data is commonly referred to as cipher text, while unencrypted data is called plaintext.

Encrypted data can be hacked or decrypted with enough time and computing resources, revealing the original content. Hackers prefer to steal encryption keys or intercept data before encryption or after decryption. The most common way to hack encrypted data is to add an encryption layer using an attacker's key.

Encryption in radio communications enables secure communication between parties and is achieved by loading the same key into all radios in a group. The key is like a secret number or password that must be known in order to decrypt the call. ... DES uses a 56-bit encryption key and AES uses a 256-bit encryption key.

The microcontroller converts the data into unreadable form i.e., encrypts the data and then passes the encrypted data to the RF transmitter. At the receiver end, the RF receiver receives the data from air. The same data is sent to the microcontroller. ... This decrypted data can be seen on the receiver PC.

Funding
Cares Act vs Recovery Act

Throughout the course of the two year study of this matter, the Rules Committee as well as the Electronic Task Force learned of numerous towns that have obtained funding for the implementation of these systems in compliance with the eligibility requirements of the Cares Act. As we have also been informed that most of these funds have already been committed we find that there is the opportunity to fund the implementation of this system via the new American Recovery Act as, in the opinion of this task force, it is equally eligible.

Notwithstanding our assessment the task force refers this matter to the office of the Town Manager for analysis and guidance.

Voting

The analysis of presumptive administrative vs town approval

Our study has led to the question of the approval process for the implementation of electronic voting. Following are the MGL, Town Charter and town Bylaws (textually imported from their legal references) relative to methods of voting at town meetings.

Relevant Town Bylaw

Section 3-324. Counting Votes.
If a vote is taken in a Town Meeting and if the decision of the Moderator is doubted by seven (7) or more voters, the Moderator shall request the house to be seated and shall appoint tellers. The Moderator shall announce that only those voters who occupy seats on the floor of the meeting are eligible to be counted on the vote; but the Moderator has authority to instruct the tellers to count the votes of specific voters who are unable to obtain seats on the floor of the meeting. The Moderator shall cause the question before the meeting to be distinctly and clearly stated and, in sequence, the Moderator shall request those who choose to vote in the affirmative and those who choose to vote in the negative to raise their voting cards in the air until they are counted by the tellers. The tellers shall carefully count the voters' raised cards and shall report to the Moderator. The Moderator shall announce the number of voters in the affirmative and in the negative. If a two-thirds vote for an action at a Town meeting is required by statute, the moderator, in accordance with General Laws Chapter 39, Section 15, as amended, may dispense with the requirement of taking a count of the vote if the moderator, in his discretion and without taking a count, determines that two-thirds of those voting supported this action.

Relevant Charter Rules and Dispositions

Section 2-2 Presiding Officer
A moderator, elected as provided in section 3-4, shall preside at all sessions of the town meeting. The moderator shall regulate the proceedings, decide all questions of order, make public declaration of all votes and may exercise such additional powers and duties as may be given to moderators under the constitution and general laws of the Commonwealth, by this charter, by by-law, or by other vote of the town meeting.

Section 2-5 Rules of Procedure
(a) The conduct of the town meeting shall be governed by the most recent edition of Town Meeting Time and such other rules and procedures as, from time to time, may be adopted by town meeting vote.
(b) There shall be a standing rules committee of five voters appointed by the town moderator for terms of three years, so arranged that as nearly an equal number of terms as possible shall expire each year. The rules committee shall recommend to the town moderator a set of rules for the conduct of the business of the town meeting and may propose amendments to the by-laws pertaining to the time and date and format of town meeting. This summary of the rules shall be published in the warrant.

Section 2-6 General Powers and Duties
All powers of the town shall be vested in the town meeting, except as otherwise provided by law or by this charter. The town meeting shall provide for the exercise of all powers of the town and for the performance of all duties and obligations imposed upon the town.

Section 3-4 Moderator
(a) Term of Office - There shall be a moderator elected for a term of three years.
(b) Powers and Duties - The moderator, as provided in article two, shall preside over and regulate the proceedings at all sessions of the town meeting in accordance with rules of

procedure, shall participate in the appointment of the finance committee in accordance with section 2-10 (a); and shall have all of the powers and duties given to moderators under the constitution and general laws of the Commonwealth and such additional powers and duties as may be authorized by the charter, by by-law or by other town meeting vote.

Relevant MGL Dispositions

Moderators: Powers and Duties

Section 15. The moderator shall preside and regulate the proceedings, decide all questions of order, and make public declaration of all votes, and may administer in open meeting the oath of office to any town officer chosen thereat. If a vote so declared is immediately questioned by seven or more voters, he shall verify it by polling the voters or by dividing the meeting unless the town has by a previous order or by-law provided another method. If a two thirds, four fifths or nine tenths vote of a town meeting is required by statute, the count shall be taken, and the vote shall be recorded in the records by the clerk; provided, however, that a town may decide by by-law or vote not to take a count and record the vote if a two-thirds vote of a town meeting is required by statute; and provided, further, that if the vote is unanimous, a count need not be taken, and the clerk shall record the vote as unanimous.
A town may pass by-laws, subject to this section, for the regulation of the proceedings at town meetings. Such by-laws shall be approved and published in the manner prescribed by section thirty-two of chapter forty.
In any town having a representative town meeting form of government the town meeting members shall not use the secret ballot when voting in the exercise of the corporate powers of said town or on any motion unless two thirds of the town meeting members present and voting thereon vote that a secret ballot be used.

Town Clerks: powers and Duties

Section 15. The town clerk shall record all votes passed at town meetings held during his term of office. He shall administer the oaths of office to all town officers who apply to him to be sworn, and shall make a record thereof and of the oaths of office taken before justices of the peace of which certificates are filed. He shall, immediately after every annual election of town officers, transmit to the state secretary, on blanks to be furnished by him, a complete list of all town officers elected and qualified and shall promptly report to the secretary any changes in such officers. He shall, except in the county of Suffolk, within seven days after the qualification of a constable make return of his name to the clerk of the courts and to the sheriff of the county. He shall make and keep an index of instruments entered with him required by law to be recorded, which shall be divided into five columns, with appropriate headings for recording the date of reception, the names of parties and the book and page on which each instrument is recorded. It shall be open to public inspection.

Analysis

Nothing in these references/dispositions limit the powers of the Town Moderator to determine the method of voting at town meetings. Repeatedly, it states that "The moderator shall preside and regulate the proceedings, decide all questions of order...". In our search, we did not find any

reference specifying any particular method of voting clearly empowering the Town Moderator to make that determination as deemed appropriate and warranted in the best interest/convenience of the town unless preempted or restricted in the constitution, MGL, town charter or bylaws.

By comparison, under the authority invested in the Town Clerk a poll pad registration system was implemented for the town meetings to facilitate, accelerate and accurately document voter registration. Absent from the implementation process was the ulterior approval of any other authority. We have also learned that the poll pads' service provider (LPS) has agreed to synchronize the system with the electronic voting cards so as to assign a card to the voter immediately upon registering for the meeting. This feature will accelerate inscription, keep inventory and promote accountability.

Our review of the applicable statutes leads us to believe that the Town Moderator has been invested with the power, authority and discretion to implement the method of voting for the town barring preemption by the constitution, MGL, the town charter or its bylaws.

Dissemination of Information

The Task Force will develop an informational strategy to disseminate the findings and conclusions of this task force to all interested parties.

Additionally, Meridia agreed to perform two in person demonstrations one towards the later part of August 2021 and another limited demo at the 2021 Fall Town Meeting. Our commitment is to provide dates and times in anticipation.

Conclusions

In our effort to simplify and at the same time enhance the speed, secrecy, and privacy of the voting method for the Town of Longmeadow, this task force concludes that Meridia meets and exceeds all of the town constituents' exigencies and demands to provide a more efficient voting process.

Since no evidence has been found to limit, preempt or curtail the power, authority or discretion of the Town Moderator as to the implementation or modification of the voting method at town meetings, we conclude this to fall under the Moderators' purview and consequently authorized to implement electronic voting without any ulterior approval or consideration. Implementation of an electronic voting method for the town, in our view, falls under the discretion and authority of the Town Moderator without any additional approvals required.

Update

On 9 September 2021, Meridia Interactive Solutions conducted an in person demo with various residents and town committee members in attendance. After a detailed discussion of the system's capabilities and integrity, a survey was conducted to explore the participants' reaction. In each and every question posed as to the ease of use, speed, and secrecy the audience voted overwhelmingly in favor of implementing the system for Longmeadow Town Meetings and other

applications as deemed warranted.

As a result, the following course of action is proposed:

  Schedule and conduct various presentations and demos via Zoom and in person committee meetings, adult center activities, residents' gatherings and town meeting volunteer personnel to procure extensive familiarization with the system in anticipation of the 2022 Annual Town Meeting and subsequent events.

  Draft and propose an Electronic Voting By-Law for consideration by the town's Rules Committee, Select Board and subsequently by the town residents at the annual town meeting.

  Recommend the Town Moderator implement electronic voting procedures for town meetings.

  Recommend The Town Clerk submit a purchase order proposal of the Meridia Electronic Voting System as quoted along with any additional accessories to the Town Manager for submission on or before 30 March 2022.

  Recommend Town Clerk coordinate with the town's IT department the incorporation of the systems' software and any and all necessary applications to official restricted town hardware (ie: laptops, desktops) as deemed necessary by the Clerk's needs.