Sherborn Electronic Voting Committee Final Report
December 20, 2018

Introduction

As the result of the passage of Article 24 at the 2018 Annual Town Meeting, the Electronic Voting Committee (EVC) was formed in June 2018 and charged with surveying and investigating available options for the use of electronic voting (EV) at town meetings and to assess their potential applicability for Sherborn's open town meetings. The members of this committee are: Abigail Fiske (Chair), Eve Scott-Ludwig, Wassim Bassalee, and ex-officio members Mary Wolff, Town Moderator, and Carole Marple, Town Clerk.

Motivation for considering electronic voting (EV) in Sherborn's town meetings

The driving needs for considering electronic voting in Sherborn include:

- **Accuracy and Integrity of the Vote**
  - Voice votes can be inaccurate, especially in the case of close votes or cases where a two-thirds majority is required for passage of an article. Inaccuracies in voice votes arise because volume of votes (i.e., how loud voters are) can distort the number of votes. Electronic voting provides an accurate method for voting where every vote counts regardless of how loud the voter speaks!
  - Integrity of traditional voting methods can be compromised if some voters cast ballots both in favor of and against an article. When this happens and the total number of votes cast exceeds the total number of voters checked in at a meeting, delays and recounts are needed. Electronic voting ensures the integrity of the votes cast by allowing only one response per voter.
  - In the case of a two-thirds vote, removing the ability to vote twice removes the possibility of distortion.
- **Speed**
  - When the Town Moderator is unable to determine the outcome of a vote based on voice votes alone, hand counting or paper ballots are needed. Unfortunately, these methods can be time-consuming. Electronic voting can speed up the tallying of results, resulting in a more efficient meeting. The time for each vote can be customized and is typically 20 seconds.
- **Privacy**
  - It is important for citizens to be able to vote without feeling uncomfortable or peer-pressured. Unlike voice and hand votes, electronic voting provides privacy for each voter for every vote.

Requirements of an electronic voting (EV) system

Based on the needs of the Town of Sherborn, the following is the starting list of requirements to consider when evaluating electronic voting solutions:

- **Number of voters**
  - Based on data from past town meetings, an electronic voting system must support an average of 300 voters and a maximum of more than 500 voters.

- **Technical support**
    - As Sherborn does not have a dedicated IT department, an electronic voting system must either be easy to configure and operate, such that volunteers from the town can support the system; or the system must be supportable by the vendor (or a 3rd party that is capable of supporting the vendor's system).
- **User-friendly interface**
    - Since saving time in town meetings is a major driver for investigating electronic voting, it is important that an EV system be user-friendly. An EV system that is not intuitive and easy-to-use requires excessive time for explaining the EV system itself, simply shifting meeting time from conducting and counting the votes to debugging EV system usability.
- **Anonymity**
    - Sherborn has an Open Town Meeting (OTM) as opposed to a Representative Town Meeting (RTM). In RTM towns, the voting record of each representative may need to be retained and recorded. However, in Sherborn, we need to ensure that an EV system allows for anonymity of each vote cast. And while the EV system must ensure that every vote is counted, there must be no trail linking a particular voter to his/her votes.
- **Security**
    - An EV system must not be *less* secure than existing voting methods, and preferably would be *more* secure.
- **Location**
    - The example of our December 2017 Special Town Meeting where voters were split into multiple rooms at Pine Hill School illustrates the need for an EV system that is capable of supporting flexible physical arrangements, including multi-room support.
    - Mudge Auditorium on the Regional campus does not have mobile phone service. Therefore, an EV system must not depend on existing physical factors such as being deployed/used in an area with mobile phone coverage.
- **Accessibility**
    - An EV system must not negatively impact the civic engagement of voters.

Evaluation Process

The committee began research and investigation of available EV systems by conducting an online search of existing technologies and by reaching out to towns in the Commonwealth that have evaluated and used EV systems. We eliminated EV systems that failed to meet the starting set of requirements and selected two candidate vendors for further evaluation: Option Technologies https://www.optiontechnologies.com/ and Turning Technologies https://www.turningtechnologies.com/corp-govt/.

Both vendors were invited to present their EV system offerings at Electronic Voting Committee meetings. In addition to the starting list of requirements from the previous section, we explored the following topics / questions with each of the two vendors:

Option for a Free Pilot. This will help with:

- Socializing the system – introducing citizens to a new voting process, with no cost to the town
- Ensuring technical feasibility (e.g., no cellular phone coverage, or any interference there might be with the transmission band)
- Assisting Sherborn in developing a well-defined step-by-step process for implementation of EV at town meetings, should the town decide to move forward with this technology

Different pricing options. Options included purchase vs. rental and how the pricing differs between a one-time rental vs. multi-year lease (i.e., does commitment to a vendor for 'N' years result in better pricing?)

Flexibility and expandability. If the town leased or purchased a system with a certain number of handsets, and if a surge in number of voters was expected for an upcoming town meeting beyond the number of handsets purchased/leased, can the vendor accommodate such surges and under what terms?

Possibility of renting from other municipalities that own the system. This also means that the contract terms must be reviewed, including software licensing terms, if any.

System deployment, usage and maintenance.
- What is involved in system pre-test, pre-configuration/pre-programming?
- Ongoing system updates/maintenance?
- How often do EV handsets get lost after a meeting? What is the remedy in such a situation?

Integration with existing town meeting processes and procedures
- Check in process (EV handsets)
  - What, if anything, will the check-in team have to do differently when using EV? For example, what is the process for distributing handsets?
  - How do we ensure that non-voters are not issued EV handsets?
- Education
  - How do we introduce the system and educate voters on system use, both the first time we use the system and at the start of every subsequent town meeting where EV is used?
- Check out process
  - What, if anything, will the check-out team have to do differently when using EV? For example, what is the process for collecting EV handsets?
  - How do we ensure that handsets are returned?

Evaluation Results

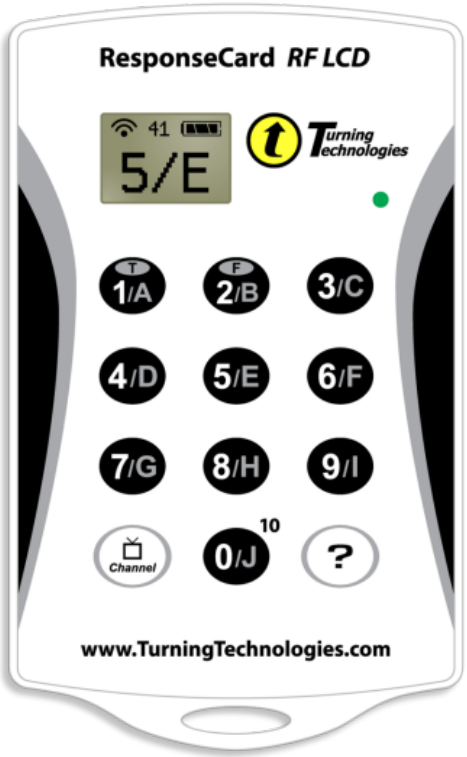
Turning Technologies Option Technologies (OTI)

Technical Support

Turning Technologies makes support personnel available ($) to assist with conducting electronic voting in town meetings. In addition, they have online training material that may be used by municipalities that wish to learn how to use their system.	The committee felt that OTI not only makes support personnel available ($) to assist with conducting electronic voting in town meetings but providing a fully-supported service is their preferred (and perhaps *only realistic*) engagement model.
Advantage: N/A	

User-Friendly Interface – Handsets

Voting is carried out using handsets that are distributed to each eligible voter. Voters select a number that corresponds with the vote they wish to cast (e.g., 1/A for Yes; 2/B for No). Votes are displayed on voters' handsets and transmitted wirelessly to one or more receivers connected to a computer that aggregates the votes and displays the results for everyone to see.	Voting is carried out using handsets that are distributed to each eligible voter. Voters select a number that corresponds with the vote they wish to cast (e.g., 1 for Yes; 2 for No). The vote is displayed on the handset's screen and wirelessly transmitted to a computer that counts votes and displays the results for the moderator to announce.
The handsets are easy-to-use:	The handsets are easy-to-use:



Advantage: N/A

User-Friendly Interface – Display

The TurningPoint solution is based on PowerPoint, which allows display of a countdown clock and immediate visual tally of results.	The OTI solution uses a flashing light, but no visual clock, to indicate countdown, and there is no immediate visual display of results.

Advantage TurningPoint

The committee feels that the TurningPoint solution has a clear advantage in terms of display of results, which is important for voter engagement.

Pricing

For a staffed rental of an EV system supporting 500 voters, the preliminary pricing is $3,389 + travel expenses for the support person.	For a staffed rental of an EV system supporting 500 voters the preliminary pricing is $6,786. The price drops down to $5,293 when signing a 3-year commitment.

Advantage TurningPoint

Based on the preliminary pricing, the committee expects the Turning Technologies solution to be more cost effective.

Anonymity

The Turning Technologies solution enables anonymous voting by not requiring association between a handset and a particular voter. When handsets are activated and issued to voters during check-in, no association is established between a particular handset and a particular voter. The record that will be maintained is the total yes and no numbers for each vote. Such records are recorded on the computer that is connected to the receiver(s)—a town computer. Data privacy is maintained by the Municipal Clerk's office.	The OTI solution enables anonymous voting by not requiring association between a handset and a particular voter. When handsets are activated and issued to voters during check-in, no association is established between a particular handset and a particular voter. The record that will be maintained is the total yes and no numbers for each vote. Such records are recorded on the computer that is receiving the votes, which in the case of OTI is an OTI-supplied computer. OTI, upon Town request can provide the subset of records required for compliance with voting laws and can erase everything else to ensure maximum anonymity for town voters.

Advantage: TurningPoint

The committee feels that retaining control of voting data on Town laptops is more advantageous.

Security

The Turning Technologies EV solution employs industry-standard encryption technology to ensure secure transmission of voting data from handsets to vote-counting computer.	The OTI EV solution employs proprietary encryption technology to ensure secure transmission of voting data from handsets to vote-counting computer.

Advantage: Equally Secure

Physical Arrangement

Turning Technologies' solution is wireless. Handsets transmit voting data to receivers. If a multi-room arrangement is necessary, different receivers/computers can be placed in different rooms in order to support aggregation of all votes. The Turning Technology solution supports a flexible physical arrangement.	OTI's solution is wireless. Handsets transmit voting data to vote-counting computers. If a multi-room arrangement is necessary, more receivers/computers can be placed in different rooms in order to support aggregation of all votes. The OTI solution supports a flexible physical arrangement, but at an additional cost.

Advantage: TurningPoint

Although both solutions support a multi-room arrangement, the OTI solution is more expensive.

Integration with Existing Town Meeting Procedures

<u>Check-in:</u> Beyond distributing handsets, the TurningPoint solution does not change the existing check-in process, allowing the continued use of Poll Pads. The use of EV does not change our existing process for non-voter registration at the meeting. <u>Running the meeting:</u> The Turning Technologies solution is based on Microsoft PowerPoint and can therefore be run from the same laptop running the meeting presentation. There are no additional audio/video (A/V) requirements.	<u>Check-in:</u> OTI's standard service is to deploy a complete solution from check-in to check-out. We discussed with the vendor the requirement to maintain the use of Poll Pads as part of our check-in process. Based on initial discussion the committee did not feel confident in the potential integration of the check-in process. The use of EV does not change our existing process for non-voter registration. <u>Running the meeting:</u> The OTI solution is an integrated solution that uses OTI's laptops. By default, vote tallies are displayed on OTI's laptop for the moderator to see.

Check-out: With the exception of collecting handsets, the use of EV does not change our existing check-out process. The committee explored the possibility of lost handsets and found that to be historically rare.	Check-out: With the exception of collecting handsets, the use of EV does not change our existing check-out process. The committee explored the possibility of lost handsets and found that to be historically rare.

Advantage: TurningPoint
The committee feels that the Turning Technologies solution more seamlessly integrates with our existing meeting flow including the continued use of Poll Pads for check-in and use of the same laptop for presenting meeting articles and voting results

Overall advantage: TurningPoint. Based on our evaluation, the committee has judged the solution provided by Turning Technologies to be superior in meeting the requirements discussed above. Further, the committee believes that the use of the TurningPoint solution will be valuable for the following reasons:

- Ease of embedding into our existing meeting flow
- Town control of data
- Retention of paper trail

Other Considerations
Two areas the committed anticipated would need addressing should the town decide to implement electronic voting included:

(1) The Sherborn Town Bylaws have some specific language that prescribes certain options for voting:

Chapter 2, Section 1A

Section 1A. Whenever a two-thirds vote is required by statute, such vote may be declared as such by the Moderator without a count and be recorded as such by the Clerk upon such declaration; provided, however, that seven (7) or more voters may challenge such declaration, at which time a count shall be taken. *(Amended 1997)*
(.. at which time a count shall be taken)

Chapter 2,, Section 6

Section 6. When a unanimous vote is not obtained on any substantive motion requiring a vote greater than a majority for passage, the said motion shall be voted upon at the same session by written ballot, using the same check list, if fifty voters so request. *(Amended 1972)*
(..by written ballot,…)

The question is would implementation of electronic voting require amended bylaw wording, either through a direct change to the current language OR the addition of language stating ‘the method of the count shall be up to the discretion of the moderator.’

The initial advice from Town Administrator David Williams was to ‘proceed with the option that provides the most flexibility and least specificity, which would be the 'moderator's choice' option.’

- This language keeps the options open-ended in case of future technology changes.

We then contacted Town Counsel, Darren Klein, who looked into the matter to see if further changes and/or additions need to be made.

The current feeling is no. He has seen Electronic Voting used elsewhere without bylaw wording changes and specifically for Sherborn he feels no changes are required for the following reasons:

Chapter 2, Section 1A: wording is broad enough, no need to amend

Section 6: in the case of a ‘written ballot’ –it will remain in place that in the event 50 people challenge a vote, we will return to a ‘recount’ in the way of a paper ballot.

Town Counsel will look further into this in more detail if the Select Board feels it necessary and requests him to do so.

(2) We discussed the possible advantages and challenges Electronic Voting may have when it comes to ADA compliance. Would it be an easier, simpler, more inclusive method or would it bring new challenges into the voting process? Would it deter anyone from participating?

We reached out to:

Civil Rights Division at the Office of the Attorney General
Elections Division at the Secretary of the Commonwealth
Massachusetts Office on Disability (MOD)
Massachusetts Commission for the Blind

One example of usage we discovered was the National Association of the Deaf (NAD) Convention in CT this past July. NAD used an electronic/Wi-Fi voting system for delegates to vote on priorities and issues. As the Commissioner of the MA Commission f/t Deaf and Hard of Hearing remarked, ‘as a delegate and being deaf myself, I found the handheld device to be very easy to use and the system appeared very effective. Votes were quickly and confidentially tabulated and then the overall results projected onto a large screen.’

What about the blind? In all cases, the Moderator will read the total numbers from the screen. With Electronic Voting, we will be able to share the result along with the underlying data that

produced that result. In the case of ballot votes, the visually impaired may find pressing a button easier than tearing off a stub.

Conclusion and Recommendations

Our research has led us to believe that among Electronic Voting solutions that we evaluated, the one most suitable is TurningPoint Solutions, as presented in Section 2 of this report. And although the Committee was not charged with making a recommendation on whether the Town should use Electronic Voting, after research and discussion we, as a Committee, unanimously feel that the use of Electronic Voting would be a beneficial change.

Appendices

Appendix 1

Electronic Voting Questionnaire

Introductory questions:

- Are you using Electronic Voting (EV)?
- Are you considering using EV?
- How far down the path are you?

	Question	Sherborn Context	Vendor Context (for each of the vendors evaluated/selected)
Needs	What were the driving needs for considering EV in your municipality?	<u>Accuracy:</u> Town Moderator indicated from moderating experience that there can be a discrepancy between voice votes and hand votes ● Nay voters have an advantage over Yea voters ● Voters seated closer to the front have an advantage over those seated further away. ● Do people change their votes when given the opportunity through the use of cards or paper ballot following a voice vote? <u>Privacy:</u> It is important for voters to be able to vote without feeling uncomfortable and peer-pressured <u>Time:</u> Electronic voting is intended to significantly reduce the time it takes to conduct voting in town meetings.	Can the vendor's system assure accuracy? Can the vendor's system assure privacy? How intuitive, easy-to-use and fast to operate is the vendor's system?
Requirements (criteria)	How many attendees in your town meetings? Open (OTM) or representative (RTM)?	<u>Voter count:</u> Based on previous town meeting data, we should plan for an	What are the terms offered by the vendor w/r/t handset count

		average of 300 voters and a maximum of 500+. <u>Information Technology (IT) organization:</u> Sherborn does not have a dedicated IT organization. <u>User-friendly:</u> Since saving time in town meetings is a major driving need for investigating EV, it is important that an EV system be user-friendly. It doesn't make sense to use a system that isn't intuitive and easy-to-use as the result won't be saving time, but rather shifting the time from conducting the votes to explaining the system! <u>Anonymity:</u> Sherborn has Open Town Meetings as opposed to Representative, as such, anonymity of votes is important. <u>Security:</u> Voters need to know that their votes are secure and accurately recorded. <u>Multi-room:</u> The example of our 2017 Special Town Meeting where voters were split into multiple rooms in Pine Hill. Mudge Auditorium has no mobile phone service. Therefore, any electronic voting system that depends on cell phone coverage will not work.	(e.g., 0-100, 100-500, 500+, etc.) How does your system ensure anonymity and protect voter privacy? How does your system ensure security? Can your system support a town meeting layout with voters split into multiple rooms? What is the transmission mechanism between clickers and receiver and how do you ensure operation in the context of no cell phone coverage?
Process for selection	Which vendors did you evaluate? If you used a RFP, would you be able to share that?	We are starting with the evaluation of two vendors: OTI and Turning Technologies that met our initial criteria. It would be ideal to have a free pilot. This will helps us with: ● Socializing the system	

	How did each vendor score against each of your requirements? Did you have a pilot? How did it go?	● Ensuring technical feasibility in Sherborn (e.g., given no cell phone coverage at Mudge Auditorium, or given whatever interference there might be with the transmission band) How is the pricing different among purchase, a one-time rental vs. multi-year lease (i.e., does commitment to a vendor for x number of years give us better pricing?) If the town leased or purchased a system with a certain number of handsets and if we expected a surge in number of voters for an upcoming town meeting beyond the number of handsets purchased/leased, can the vendor accommodate such surges and under what terms? Town Clerk mentioned the interesting fact that some municipalities are exploring the possibility of renting from other municipalities. Therefore, in addition to considering the two vendors, it behooves us to ask other municipalities that own our preferred system whether they are open to such an arrangement and how that might work. We need to review the contract terms including SW licensing terms, if any.	
Process for approval	What was your process for approving the use of EV in Town Meetings?	Thoughts on socializing the electronic voting system: ● Road show ● Council on aging ● Pilot in a town meeting	

	Did you socialize the EV system before committing? How?		
Process for implementation	Do you own or lease the system? How many handheld devices, receivers, floating iPads, computers, etc. do you have? For the below set of questions, could you please specify if you perform it in-house (please specify if the Town has dedicated IT organization, dedicated committee, or citizens performing these functions) or if the vendor assists: What are your procedures for: ● System pre-test ● System configuration/pre-programming ● Check-in process (distributing clickers): What are your check-in procedures? How do you integrate with your client towns' existing check-in procedures? How do you ensure that non-voters are not issued a handset? ● System operation ● Check-out process (collecting clickers):	System pre-test System pre-configuration / pre-programming, if any Check in process ● What, if anything, will the check-in team have to do differently when using EV? Education ● How do we introduce the system and educate voters on its use the first time we use the system and at the start of every subsequent town meeting where EV is used? System operation ● Given the lack of IT resources in Sherborn and depending on the difficulty of operating the system, vendor assistance may be required in town meetings Check out process ● What, if anything, will the check-out team have to do differently when using EV? Ongoing updates/maintenance	What are the requirements and typical procedures for: ● System pre-test ● System configuration/pre-programming ● Check-in process (distributing clickers): What are your check-in procedures? How do you integrate with your client towns' existing check-in procedures? How do you ensure that non-voters are not issued a handset? ● System operation ● Check-out process (collecting clickers): What are your check-out procedures? How do you ensure that handsets are returned properly even though there are non-voters who don't have handsets to return? ● Ongoing updates / maintenance How many updates have you issued in the past 3-5 years? Do you have release notes indicating what those updates were?

	What are your check-out procedures? How do you ensure that handsets are returned properly even though there are non-voters who don't have handsets to return? • Ongoing updates / maintenance How many updates have you been issued in the past 3-5 years? What maintenance did you need to perform in the past 3-5 years? How often do clickers get lost after a town meeting? What is the remedy in such a situation?		What maintenance did you need to perform in the past 3-5 years? How often do clickers get lost after a town meeting? What is the remedy in such a situation?
Feedback	If you used the technology, what issues did you encounter? If no, why did you choose not to pursue EV? Any recommendations for best practices from your experience that you can share with us?		Can you share with us the list of municipalities that you serve? In general, do you have a set of best practices that you can share with us from your experience of working with your existing base of client towns?

Appendix 2

Towns that use TurningPoint for electronic voting as of September 13, 2018:

1. Avon (Open) – Patricia Bessette, Town Clerk – pbessette@avonmass.org; (508) 588-0414x1013
2. Belmont (Representative) – Ellen Cushman, Town Clerk - ecushman@belmont-ma.gov; (617) 993-2604
3. Dover (Open) - rented in Spring 2017 for 1,500+ attendees and subsequent Town Meetings – Felicia Hoffman, Town Clerk - fhoffman@doverma.org; (508) 785-0032x226
4. Falmouth (Representative) - Michael Palmer, Town Clerk - mpalmer@falmouthmass.us; (508) 495-7360
5. Lynnfield (Open) – used TurningPoint in 2017 Fall Town Meeting, renting for 2018 Fall Town Meeting (plan to rent or purchase for future use) – Trudy Reid, Town Clerk - treid@town.lynnfield.ma.us; (781) 334-9401
6. Rockport (Open) – Bob Visnick, Moderator – (978) 546-2525
7. Stoughton (Representative) – Amy Summers, Town Clerk - asummers@stoughton-ma.gov; (781) 341-1300
8. Webster (Open) – Tom Ralph, Moderator - moderator@webster-ma.gov; (508) 499-3225
9. Westwood (Open) – used TurningPoint in 2018 Town Meeting and will purchase or rent for ongoing use – Dottie Powers, Town Clerk - dpowers@townhall.westwood.ma.us; (781) 326-3964
10. Whitman (Open) – rented in Spring and Fall 2018 – Dawn Varley, Town Clerk - dawn.varley@whitman-ma.gov; (781) 618-9710
11. Winchendon (Open) – Judy LaJoie, Town Clerk - clerk@town.winchendon.ma.us; (978) 297-2766