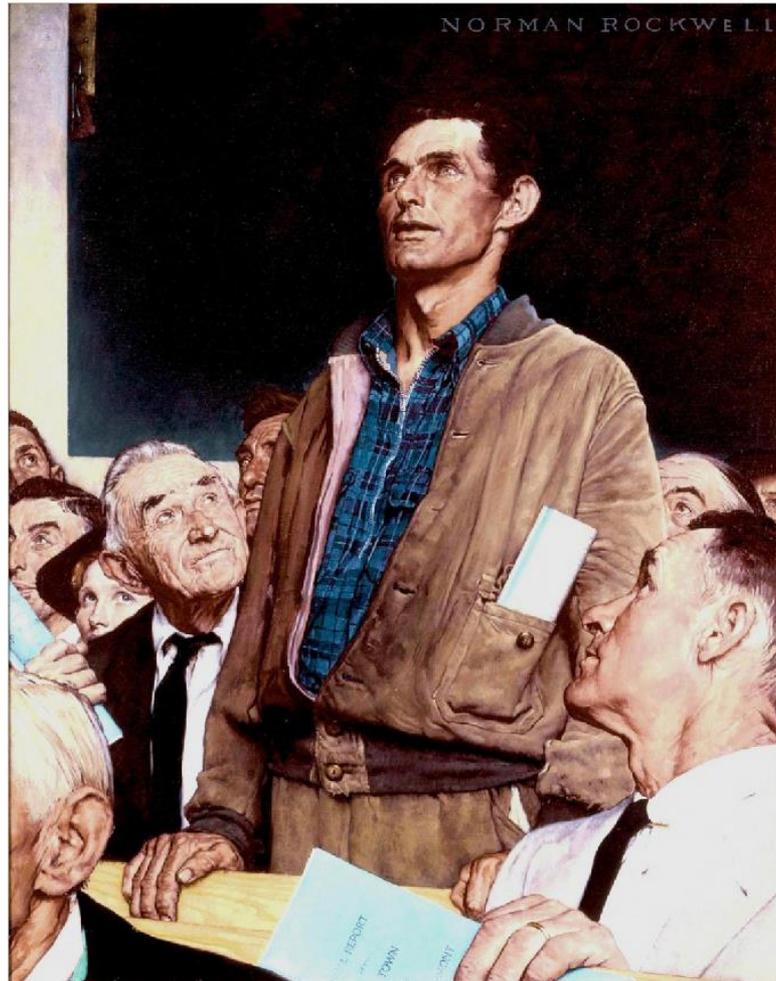


Town Meeting Electronic Voting



Wayland Town Meeting

- ~10,000 registered voters
- Open Town Meeting
- Annual held in April, Special in November
- 1987-2011 25 years (Annual and Special)
 - 25-68 Articles
 - 1-7 sessions
 - 130 to 2300 attendees
- Anecdotal: lengthy standing counts (~30 minutes for 500 voters)

Spring 2009

- Town Meeting Article established Advisory Committee to Improve Town Meeting
- Advisory Committee reviewed a proposal to acquire an audience participation system to implement “electronic voting” at a cost of \$130K
 - Accuracy: voice votes and hand counts are inaccurate
 - Speed: standing counts are grueling
 - Privacy: intimidation, fear of consequences

May 2010

Town Meeting approved an Article that proposed a free trial of Electronic Voting

- Offered by Options Technologies International (OTI)
- Target: 2011 Annual Town Meeting

August 2010: ELVIS Formed

Electronic Voting Implementation Subcommittee

- Mission: successfully deploy electronic voting at the 2011 Annual Town Meeting
- Composition: 6 members including Town Clerk, 4 with technical backgrounds
- Initial concerns: logistics, usability, security

Identified Activities and Tasks

- Expanded check-in procedure to include issuing of handsets: 2 people per check-in station
- Site visit revealed insufficient electrical power in Middle School Gym
- RF emissions: interference with implanted medical devices
- Procedure for voters who cannot use handsets
- Communications between Moderator and Voting System Operator
- Help Desk: deal with voter/handset problems (issue replacement handsets)

Selected Handset

- With a built-in display, so voters would be confident their vote was received



- 30 second voting window, so voters would not feel rushed

Security

- No connection to internet
- Inter-room messages are encrypted
- Executed non-disclosure agreements to enable review of OTI security measures
- Added a real-time audit

Deliverables

- Electronic Voting Handbook
- “How To Vote Electronically” article
- “How to Vote Electronically” video public service announcement
- Town Meeting Handout

Electronic Voting Handbook

- Roles and Responsibilities
- Pre-Meeting and Pre-Session Tasks
- In-Session Activities
- Post-Session and Post-Meeting Tasks
- Contingencies (e.g. power failure, audit failure, attack)
- Electronic Voting Help Desk

“How To Vote Electronically”

- Town Web Site
- Warrant
- Local Newspaper
- Video Public Service Announcement

V16

How to Vote Electronically

Town Meeting, Wayland High School, Thursday April 7th at 7:30 pm

During the April 2015 Annual Town Meeting, Wayland's citizens approved a resolution endorsing the use of wireless electronic voting for all sessions of all town meetings through fiscal year 2019. Instead of shouting out Aye or No, raising our hands, or standing to be counted, we'll use electronic handsets to register our votes quickly, accurately, and privately during the upcoming Annual Town Meeting.

The handsets look a bit like a TV remote control, but instead of pushing buttons to change channels, we push buttons to vote: the 1 button for Yes, or the 2 button for No. Your vote is displayed on your handset's screen and wirelessly transmitted to a computer that counts votes and displays results for the Moderator to announce. Nothing but these totals is permanently recorded, so your vote will remain private.

Town Meeting will be held in the High School Field House. You can use any check-in station, waiting in one line based on the first letter of your last name is no longer required. As you're checking in, you'll be issued a handset for your exclusive use during that session. Voting with a handset issued to anyone else is strictly forbidden.

If your phone, tablet, or laptop supports Wi-Fi, please disable this feature, as doing so will enhance performance of the electronic voting system.

Before each vote, the Moderator will summarize the motion or amendment being decided. He'll then announce the beginning of a 30 second interval during which you can convey your vote, and a "voting light" near the Moderator will be illuminated. To vote Yes, push your handset's 1 button. To vote No, push your handset's 2 button. If you accidentally push the wrong button, you can change your vote by pushing the correct button. If you don't want to participate in a particular vote, don't push any buttons during the 30 second voting interval; if you don't want to participate but accidentally push the 1 button or the 2 button, you can clear your unintentional vote by pushing the 3 button. When the 30 second interval is over, the "voting light" will be extinguished, and the Moderator will announce that the vote is complete, shortly thereafter, the Moderator will announce the results.

If you inadvertently turn your handset off by pushing the power button in its lower-right corner, its display will be blank; push the power button briefly to turn your handset back on. Pushing any of your handset's other buttons during the voting interval will not change your vote, but for



V16

peace of mind, your handset will encourage you to Re-Vote; push the 1 button for Yes or the 2 button for No.

If you temporarily leave your seat during the meeting, please keep your handset with you. If you're visiting the restroom, you can leave your handset with the Exit Desk staff. When you leave the Field House – either during a session or at the close of a session – please place your handset in one of the bins at the Exit Desks. If you forget to turn in your handset, we'll give you a call the next day and ask you to return it.

Every handset will be tested before each session of Town Meeting, so the probability of a handset failing is very low. That said, if pushing your handset's 1 button or 2 button during a vote does not produce an Yes or No on its display, please raise your hand; the Moderator will direct personnel from the Help Desk to provide you with a paper ballot to record your vote, and you'll be issued a new handset. We don't expect this to happen, but like the Boy Scouts, we'll be prepared.

If you're physically unable to use a handset to vote, inform the person who checks you in, and you'll be seated in an area where your votes will be manually counted by Help Desk personnel. If you're wondering how much radio energy is used by a handset to convey your vote wirelessly, it's less than 1% that of a typical cell phone and only for brief instants, employing the same frequencies used for Wi-Fi wireless internet access.



ELVIS: Wayland's Electronic Voting Implementation Subcommittee

Town Meeting Handout

Electronic Voting at Wayland Town Meeting

Getting Ready

- Every voter will be issued a handset for his or her *exclusive* use. Voting with a handset issued to anyone else is *strictly forbidden*.
- The handset will have been tested and powered on

Voting

- The Moderator will announce the start of a vote
 - Press 1 for **Yes**
 - Press 2 for **No**
 - Press 3 to clear your vote
- You will have 30 seconds to complete your vote
- The last vote showing on your handset will be counted
- Go to the Help Desk if you have a problem with voting

During the Meeting

- If you leave your seat, take your handset with you
- While visiting the restroom, you can leave your handset with the Exit Desk staff

After the Meeting

- Place your handset in a bin at the Exit Desk as you leave the Field House



April 20 | Annual Town Meeting

- First two sessions conducted using electronic voting
- 350 Wayland citizens voted electronically 37 times
- 10 votes closer than 20%, saving ~3 hours
- Proved handsets could be issued without significantly lengthening check-in time
- Voters were comfortable expressing their vote by pushing a button on their handsets within 30 second window
- Validated the choice of a handset that shows the user their vote as received by the system
- First session revealed need for a *voting lamp* to indicate when window is open; validated in second session
- Confirmed that all handsets would be returned

November 20 | | Special Town Meeting

Approved motion to use an **Electronic Voting Service** at all Town Meeting through June 2015

Electronic Voting Service Provider performs

- Setup
- Operation
- Removal
- Maintenance

January 2012: Released RFP

- Electronic Voting Service Requirements developed by ELVIS

Informal Requirements for Wayland's Electronic Voting System	v3
1. Proposal	
a. Propose full-service "cost-per-session" pricing parameterized by the maximum number of voters that must be accommodated and the number of Check-in Stations required	
b. Survive any single-point failure	
c. Support multi-venue meetings (within a quarter-mile radius)	
d. Utilize handsets that can	
- Display votes and error messages	
- Operate for at least 6 hours on a fully charged battery	
- Communicate with a transceiver within a 300 foot radius using low power	
2. Security	
a. Deploy without connection to the internet	
b. Employ VPN to encrypt messages carried over inter-room cables	
c. While the voting window is open, display each voter's most recent choice on the voter's handset; when the voting window closes, continue to display each voter's most recent choice until the Moderator declares the vote to be final	
d. Provide a demonstrable means of verifying the integrity of the vote	
3. Installation	
a. Install and test all required electronic voting equipment, including each handset's batteries	
b. Conduct a full-dress rehearsal the day before the first session	
c. Provision ready-to-issue replacement handsets	
d. Enable the Moderator to specify the duration of the voting window to be 30 seconds or less	
4. Check-in	
a. Maintain a voting roster and voter-handset list by scanning each voter's Massachusetts state barcode and assigned handset code - in parallel with the Town Meeting voter check-in procedure, and without creating a backup in the check-in process	
b. Permit voters to check-in after the meeting has started, and to check-in after having checked-out	
5. Voting	
a. In preparation for a vote, be able to update the voting roster in 10 seconds or less	
b. Provide each voter with a voting handset having buttons for voting Aye , Nay , and Abstain	
c. While the voting window is open, display each voter's most recent choice on the voting handset; when the voting window closes, continue to display each voter's most recent choice until the Moderator declares the vote to be final	
d. If during the voting window a voter presses buttons on the voting handset other than Aye , Nay , and Abstain , display "invalid entry" in the voting handset display	
e. If a voter whose voting handset is not in the voting roster attempts to vote, display "can't vote yet" in the voting handset display	
f. If an error occurs when a voter attempts to vote, display "get Help N" in the voting handset display, where N is an error code; provide a list of all valid error codes and an explanation and recommended corrective action for each	
g. Accept manually-counted votes	
h. Generate video output that shows the final vote, including manually-counted votes (Aye, Nay, Abstain) and percentages (Aye/(Aye+Nay), Nay/(Aye+Nay))	
i. Expunge handset voting records after each vote	
6. Check-out	
a. Recover handsets from voters leaving during a session and remove them from the voting roster within 10 minutes	
b. Recover handsets from voters leaving at the end of a session without creating a backup in voter departure	
c. Provide a list of all voters that did not return their assigned handset	
7. De-installation	
a. Remove all electronic voting equipment	

- 3 companies responded
- Technical responses evaluated by ELVIS
- Town Administrator selected OTI

April 2015: Accelerated Check-In

- Voters can check in at any station
- Need only one Check-In person per station
- Check-ins are recorded to external storage media
- At the conclusion of each session, a report listing citizens who attended that session is generated
- At the conclusion of Town Meeting, a report listing citizens who attended one or more sessions is generated
- Generated reports facilitate conveyance of required information to the state

Wayland's Experience

Meeting	Sessions	Peak Voters	Votes	Close Votes	Hours Saved
2012-04 Annual	4	700	63	15	5.00
2012-10 Special	1	270	10	1	0.25
2013-04 Annual	4	369	56	14	4.00
2013-11 Special	1	630	5	1	0.75
2014-04 Annual	4	535	78	11	4.00
2015-04 Annual	4	408	95	15	4.25
2015-11 Special	1	559	27	4	2.00
2016-02 Special	1	164	7	1	0.13
2016-04 Annual	3	403	52	4	1.00
2016-11 Special	1	197	18	3	0.50
2017-04 Annual	2	319	50	5	1.15
2017-11 Special	1	710	20	2	0.88
2018-04 Annual	3	1239	57	2	1.57
2019-04 Annual	2	1350	60	7	5.93

- 598 electronic votes
- 85 votes (14%) closer than 20%, saving 31 hours

Wayland's Experience

- Voters make decisions on the merits, without concern for consequences from family, friends, neighbors, co-workers, employers, or employees
- Town Meeting is more relaxed, deliberate, and methodical; decisions made in this environment are better, to the benefit of every Wayland citizen – whether they attend or not

ELVIS Summary

- Prepared for each Town Meeting
- Staffed Help desk
- Made Incremental improvements
 - Random audit
 - Accelerated check-in
 - “Handset Management” to prevent proxy voting
- Evaluated responses to RFP for next 3 years of Electronic Voting Service
- Assisted other towns considering electronic voting

What's Required?

- **An Implementation Committee**
 - Establish requirements for RFP
 - Assess and rank technical component of RFP responses
 - Develop Handbook of Operations (so that everyone knows what to do)
- **Staff to operate check-in stations, and assist with setup and tear-down**
- **Ballpark Service pricing: with 3-year commitment**
 - 500 voters, 5 Check-in Stations: 1st session: ~\$12K, additional days \$7K
 - 800 voters, 7 Check-in Stations: 1st session: ~\$14K
 - 1000 voters, 7 Check-in Stations: 1st session: ~\$15K
 - 1400 voters, 10 Check-in Stations: 1st session: ~\$20K
 - 2000 voters, 12 Check-in Stations: 1st session: ~\$26K

Freedom of Speech with Speed, Privacy and Accuracy

