Disability Rights California

California's protection & advocacy system

VOTING RIGHTS UNIT
1330 Broadway, Ste. 500
Oakland, CA 94612
Tel: (510) 267-1200
TTY: (800) 719-5798
Toll Free: (800) 776-5746
Fax: (510) 267-1201
www.disabilityrightsca.org

March 21, 2016

VIA E-MAIL AND U.S. MAIL

Christopher J. Jerdonek
President, San Francisco Elections Commission
1 Dr. Carlton B. Goodlett Place, Room 48
San Francisco, California 94102

Jeff Cretan
Legislative Aide to Supervisor Scott Wiener
City Hall
1 Dr. Carlton B. Goodlett Place, Room 244
San Francisco, California 94102

RE: Accessible Features of a New Voting System

Dear Mr. Jerdonek and Mr. Cretan:

Thank you for taking the time to meet with us regarding San Francisco's prospects in acquiring a new voting system. Pursuant to our conversation in January, we have developed a working definition of "accessible" as well as some features of an accessible voting system.

Definition of "Accessible"

"Accessible" refers to direct access without assistance. "Accessible" incorporates the design of products, devices, services or environments for

persons with disabilities. Accessible also refers to ease of approach, reach, enter, speak with or use.[1]

Voting systems generally meet HAVA accessibility requirements to the extent they are required to do so. The requirements, however, are based on particular disability groups such as blind and low vision, manual dexterity, intellectual and developmental disabilities as well as other groups and do not take into account combinations of disability. This results in requirements that may work well for people who are blind but not for people who are blind with limited dexterity or limited tactile sensitivity. As might be expected, stand-alone systems designed after implementation of Voluntary Voting System Guidelines (VVSG 1.0) have a much greater compliance than those designed prior to VVSG 1.0.

Desirable Features of an Accessible Voting System[2]

In addition to an audio component and touchscreen, we believe that an accessible voting system should be self-explanatory and have additional accessible features, including, but not limited to, the following:

- Sip and puff - The mouth-controlled input provide users who cannot move their arms with a simple and effective way to use their breath to control a device, such as their power wheelchair or computer.

- Keyboard for write-in votes – Many people with disabilities are unable to type in names of write-in candidates using the touchscreen either because they can hit one large button to cast their ballot by using a big part of their hand or even face to choose a candidate on the ballot, but cannot type on a touchscreen keypad. A manual keyboard should be readily available.

- Voice activated – Voice input for voters who have difficulty using their hands.

---

[1] *See* https://en.wikipedia.org/wiki/Accessibility

[2] The information below, as well as additional information, may be found in the Research Alliance for Accessible Voting (RAAV) Abstract, "Guide to Disabilities and Voting Systems and Access Features: Developed by the Association of Assistive Technology Act Program as a partner of the RAAV Project. http://www.ataporg.org/docs/RAAV%206.27.13%20publish.pdf

- Synchronized audio and visual - When synchronized speech and audio are engaged, a voice reads each word as it is displayed. Adjustments to change the volume and tempo should be available to assist voters with intellectual and developmental disabilities, voters with learning disabilities, voter who had traumatic brain injuries and voters who had a stroke.

- Joystick – Some voters with disabilities may need to use a joystick to navigate the touchscreen component if they cannot operate the touchscreen because they are unable to raise their hand or cannot accurately hit their selection due to fine motor control limitations or involuntary movements.

- Tecla switch compatibilty- The Tecla Switch is a wireless device that lets a person with limited to no hand movement control electrontic devices, such as a smartphone, tablet or computer (PC & Laptop), and the driving controls of their power wheelchair using their external switches.[3]

- Tactile buttons - An access feature provided as an alternative to touch screen input. It provides keys/controls that can be felt in contrast to a touchscreen, which provides no mechanism to "feel" the difference between selections.

- Electronic Ballot Delivery – An electronic ballot in accessible format that is either e-mailed to a voter with a disability or downloadable from a secure website that a voter can read and mark using their familiar assistive device (e.g., screen reading software, mouse keys, etc.), print it and mail it back to the county elections officials. Electronic ballot delivery would allow voters with disabilities to vote by mail privately and independently the same as voters without disabilities.

---

[3] See http://gettecla.com.

<u>Tablets Generally Do Not Comply with the VVSG Requirements and are Not Currently Expected to Do So Even Though They are Being Increasingly Used as Part of the Voting Process.[4]</u>

Tablets are not accessible to many people with disabilities. Several disabilities (for example Cerebral Palsy, Multiple Sclerosis, Parkinson's Syndrome, Paralysis) cause motor control and dexterity limitations such as poor coordination or involuntary movements.

Any of these disabilities can seriously impair a person's ability to accurately touch a small area on a voting system touch screen or accurately activate a key on a keypad. They may also impact the pressure needed to touch or activate a control. These individuals may need keys needing less pressure than most people or they may be prone to using too much pressure and activate a repeat function on the key or selection spot.

These individuals may frequently use adaptive keyboards with a layout of keys that match their range of motion; they may use a head-mouse, mouth-stick, or head-pointer, voice-recognition software, an eye-gaze system, or any one of a number of other assistive technologies to efficiently use a computer. They may need longer response times and adjustments in key repeat, requirements for simultaneous key use, etc.

The VVSG requires that controls should be operable with one hand, without excessive force, and must not require tight grasping, pinching, or twisting of the wrist. VVSG 1.1 Section 3.2.6.c. The combined impact of these requirements is that controls must be easily operated but not easily activated by accident. VVSG 1.1 Section 3.3.4.b. This benefits all voters but particularly benefits those who lack fine motor control.

Tablets generally do not include safeguards to prevent key repeat or other forms of accidental key activation. This means, for example, that individuals who lack hand coordination can easily enter extra characters when entering

---

[4] The information below, as well as additional information, may be found in a working paper called "Accessible Voting Technology: Analysis and Recommendations" by Deb Cook and Mark Harriss from the University of Washington for the Information Technology and Innovation Foundation, Accessible Voting Technology Initiative (December 2012) < http://elections.itif.org/reports/AVTI-004-Cook-Harriss-2012.pdf>

a write-in choice. Operating systems on tablets generally include an option to disable key repeat, but it is not easily accessed, is probably not known to most voters, and may not be enabled at a polling place.

Voter Input at All Stages

Having voter input at all critical stages of the development and the procurement process, either by focus groups, surveys or a task force would be an ideal way to make sure San Francisco's next voting system is accessible and usable by all San Francisco voters, especially those with disabilities.

We appreciate the opportunity to continue the conversation and contribute to the process to meet our joint goal of ensuring all people desiring to vote can do so privately and independently. Again, thank you for your time and consideration.

Sincerely,
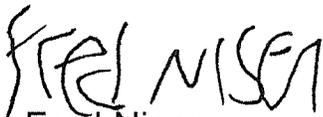
Fred Nisen
Supervising Attorney for Voting Rights

Cc: John Arntz, Director, Department of Elections
       Carla Johnson, Director, Mayor's Office on Disability

VOTING RIGHTS UNIT
1330 Broadway, Ste. 500
Oakland, CA 94612
Tel: (510) 267-1200
TTY: (800) 719-5798
Intake Line: (800) 776-5746
Fax: (510) 267-1201
www.disabilityrightsca.org

Disability Rights California

California's protection & advocacy system

April 17, 2017

John Arntz, Director
Department of Elections
City Hall
1 Dr. Carlton B. Goodlett Place, Room 48
San Francisco, California 94102

RE: San Francisco Accessible Voting System

Dear John:

Pursuant to your request during our conversations in February, this letter will explain features necessary to make San Francisco's new voting system accessible to and useable by voters with disabilities. Disability Rights California appreciates your continued commitment to begin any discussion of a new voting system with the premise that it should be useable by all voters with disabilities.

In her article for the Stanford Law Review, "Contemporary Voting Rights Controversies through the Lens of Disability", Dr. Rabia Belt writes, "People with disabilities are the ticking time bomb of the electorate. An estimated thirty to thirty-five percent of voters in the next twenty-five years will need some form of accommodation." Stanford Law Review, Vol 68 issue 6, June 2016 pg. 1491

Voting systems generally meet HAVA accessibility requirements to the extent they are required to do so. The requirements, however, are based on particular disability groups such as blind and low vision, manual dexterity, intellectual and developmental disabilities and do not take into

account combinations of disability. This results in requirements that may work well for people who are blind but not for people who are blind with limited dexterity or limited tactile sensitivity.

As might be expected, stand-alone systems designed after implementation of Voluntary Voting System Guidelines (VVSG 1.0) have a much greater chance of being in compliance than those designed prior to VVSG 1.0.

Features of an Accessible Voting System[1]

In addition to an audio component and touchscreen, an accessible voting system should be self-explanatory and have additional accessible features, including, but not limited to, the following:

- Sip and puff – The mouth-controlled input provides users who cannot move their arms with a simple and effective way to use their breath to control a device, such as their power wheelchair, a voting system or computer.

- Keyboard for write-in votes – Many people with disabilities cannot type in write-in candidates using the touchscreen because they can hit only one large button to cast their ballot by using a big part of their hand or even face to choose a candidate on the ballot. A manual keyboard is often easier and should be readily available.

- Voice activated – Voice input for voters who have difficulty using their hands.

- Synchronized audio and visual – When synchronized speech and audio and visual are engaged, a voice reads each word as it is displayed on the touchscreen. Adjustments can be made to change the volume and tempo to assist voters with intellectual and

---

[1] The information below, as well as additional information, may be found in the Research Alliance for Accessible Voting Abstract (RAAV), "Guide to Disabilities and Voting Systems and Access Features:
Developed by the Association of Assistive Technology Act Program as a partner of the RAAV Project. "Return to Main Document"

developmental disabilities, voters with learning disabilities, voters who had traumatic brain injuries or a stroke.

- Joystick – Some voters with disabilities may need a joystick to navigate the touchscreen component.

- Tecla switch – The Tecla Switch is a wireless device that lets a person with limited or no movement of the hands control a smartphone, tablet or computer (PC & Laptop) using their external switches or the driving controls of their powered wheelchair.[2] It works with all assistive switches on the market including buttons, sip-and-puff controllers, head arrays, joysticks and the driving controls of a wheelchair.

- Tactile buttons – Is an alternative to touch screen input. It provides keys/controls that can be felt in contrast to a touchscreen, which provides no mechanism to "feel" the difference between selections.

- Remote Accessible Vote by Mail System (AB 2252) – A remote accessible vote-by-mail system is a vote-by-mail ballot that is either e-mailed to a voter with a disability or downloadable from a secure website so the voter can read and mark it using their own assistive device (e.g., screen reading software, mouse keys, etc.), print it and mail it back to the county elections officials. Remote accessible vote-by-mail allows voters with disabilities to vote-by-mail privately and independently the same as those without disabilities. In 2016, Governor Brown signed AB 2252 into law. AB 2252 requires the Secretary of State to certify remote accessible vote-by-mail systems. Also, under AB 2252, once the Secretary of State certifies remote accessible vote-by-mail systems, San Francisco will be required to offer remote accessible vote-by-mail to voters with disabilities because San Francisco allows overseas military to vote-by-mail using electronic ballot delivery.

---

[2] https://gettecla.com/ "Return to Main Document"

<u>Tablets Generally Do Not Comply with the VVSG Requirements and are
Not Currently Expected to Do So Even Though They are Being Increasingly
Used as Part of the Voting Process.</u>[3]

Tablets are not accessible to many people with disabilities. Many
disabilities (for example Cerebral Palsy, Multiple Sclerosis, Parkinson's
Syndrome, paralysis) cause motor control and dexterity limitations such as
poor coordination or involuntary movements.

Any of these limitations can seriously impair a person's ability to accurately
touch a small area on a voting system touch screen or accurately activate a
key on a keypad. Their limitations can impact the pressure with which a
person can touch or activate a control. They may need to activate keys with
less pressure than most people or may be prone to using too much
pressure that activates a repeat function on the key or selection spot.

These individuals may frequently use adaptive key-boards with a layout of
keys that matches their range of motion; they may use a head-mouse,
mouth-stick, or head-pointer, voice-recognition software, an eye-gaze
system, or any one of a number of other assistive technologies to efficiently
use a computer. They may need longer response times and adjustments in
key repeat, requirements for simultaneous key use, etc.

The VVSG requires that controls be operable with one hand, without
excessive force, and must not require tight grasping, pinching, or twisting of
the wrist. VVSG 1.1 Section 3.2.6.c. The combined impact of these
requirements is that controls must be easily operated but not easily
activated by accident. VVSG 1.1 Section 3.3.4.b. This benefits all voters
but particularly benefits those who lack fine motor control.

---

[3] The information below, as well as additional information, may be found in
a working paper called "Accessible Voting Technology: Analysis and
Recommendations" by Deb Cook and Mark Harriss from the University of
Washington for the Information Technology and Innovation Foundation,
Accessible Voting Technology Initiative (December 2012) <
http://elections.itif.org/reports/AVTI-004-Cook-Harniss-2012.pdf> "Return to
Main Document"

Tablets generally do not include safeguards to prevent key repeat or other forms of accidental key activation. This means, for example, individuals who lack hand coordination can easily enter extra characters when entering a write-in choice. Operating systems on tablets generally include an option to disable key repeat, but it is not easily accessed, is probably not known to most voters, and may not be enabled on a laptop used as a voting system in a polling place.

I hope this letter is informative and hope it helps guide the process towards the acquisition of a new voting system for San Francisco. As always, I am available for any guidance I could provide.

Sincerely,

Fred Nisen
Supervising Attorney for Voting Rights

cc: San Francisco Elections Commission
    Nicole Bohn, Mayor's Office on Disability