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2 **Draft NIST Special Publication 1273-draft**

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5 **Promoting Access to Voting:**  
6 **Recommendations for Addressing**  
7 **Barriers to Private and Independent**  
8 **Voting for People with Disabilities**

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24 <https://doi.org/10.6028/NIST.SP.1273-draft>

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**Draft NIST Special Publication 1273-draft**

**Recommendations for Addressing  
Barriers to Private and Independent  
Voting for People with Disabilities**

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October 2021



U.S. Department of Commerce  
*Gina M. Raimondo, Secretary*

National Institute of Standards and Technology  
*James K. Olthoff, Performing the Non-Exclusive Functions and Duties of the Under Secretary of Commerce  
for Standards and Technology & Director, National Institute of Standards and Technology*

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**National Institute of Standards and Technology Special Publication 1273-draft  
Natl. Inst. Stand. Technol. Spec. Publ. 1273-draft, 61 pages (October 2021)  
CODEN: NSPUE2**

**This publication is available free of charge from: <https://doi.org/10.6028/NIST.SP.1273-draft>**

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## EXECUTIVE SUMMARY

*The Executive Summary is not available in this Draft but will be provided in the final version of the Report.*

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## 147 1. INTRODUCTION

148

149 As stated in Executive Order (EO) 14019, Promoting Access to Voting,<sup>1</sup> the right to vote is the  
150 foundation of American democracy. The EO further recognizes that “People with disabilities continue to  
151 face barriers to voting and are denied legally required accommodations in exercising their fundamental  
152 rights and the ability to vote privately and independently.” This NIST Special Publication is intended to  
153 contribute to the efforts of improving accessibility for voters by making recommendations that may help  
154 to remove barriers impeding the ability for people with disabilities to vote privately and independently.  
155

156

157 NIST has a decades-long history in addressing the accessibility and usability of voting systems and  
158 processes through technical research based in human factors to develop guidance as part of its NIST  
159 Voting Program. Drawing on this expertise and using its robust stakeholder engagement processes,  
160 NIST produced this Draft NIST Special Publication in response to its responsibilities described in  
161 Section 7 of the EO. NIST is specifically tasked to:

161

1) Evaluate the steps needed to ensure that the online National Voter Registration Form<sup>2</sup> is  
162 accessible to people with disabilities, and

163

2) Identify barriers and publish recommendations to remove barriers preventing individuals with  
164 disabilities from accessing voter registration systems and voting technology, utilizing voting by  
165 mail, using polling locations, as well as recommendations that address training and  
166 documentation associated with the technical barriers for poll workers to support accessibility.  
167

168

169 In producing this Draft NIST Special Publication, NIST explored technical and non-technical barriers by  
170 analyzing published material identifying barriers, recommendations, best practices, and existing federal  
171 guidance and regulations. NIST engaged stakeholders through discussion and responses to a June 16,  
172 2021, Request for Information (RFI)<sup>3</sup> to gain an in-depth understanding of accessibility issues and  
173 where technology is a barrier, as well as where technology can serve as a solution. We noted that  
174 many of the barriers have already been analyzed and recommendations exist in various forums; NIST  
175 analyzed this information in the context of how current and future technology can improve accessibility  
176 for voters. NIST also received responses that address legislative, regulatory, and enforcement  
177 concerns. The barriers and recommendations presented in this report are a synthesis of the  
178 aforementioned resources and inputs. These responses have been provided to appropriate federal  
179 agencies and offices for their consideration.

180

181 Five core assertions appeared across the material, discussions, and public responses. We relied upon  
182 these to guide our analysis about improving independent and private voting for people with disabilities.

183

1. Privacy, independence, and equal access are of utmost importance to voters with disabilities.

184

2. Many barriers exist for voters across a wide range of disabilities.

185

3. More choices mean more accessibility and better design for all voters.

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<sup>1</sup> Exec. Order No. 14019, Promoting Access to Voting, 86 FR 13623 (Mar. 07, 2021).

<sup>2</sup> The Election Assistance Commission (EAC) provides this registration form, otherwise known as the National Mail Voter Registration Form, which can be used to register U.S. citizens to vote and update voter information. See: <https://www.eac.gov/voters/national-mail-voter-registration-form>.

<sup>3</sup> Responses to the Request for Information are found on regulations.gov and <https://www.nist.gov/it/voting>.

- 186 4. Multiple standards, laws, guidelines, and best practices exist that increase accessibility.  
187 5. Accessibility and cybersecurity must work together.

188  
189 This NIST Special Publication presents barriers and recommendations based on our analysis of all  
190 documents, stakeholder engagements, and responses to the RFI. We recognize that there is great  
191 variability among states and local jurisdictions and unique considerations in their efforts to identify and  
192 address barriers to improve voter accessibility. Therefore, this report does not contain specific analyses  
193 about any specific state or local jurisdictions' existing barriers or their removal. Further, this report does  
194 not make suggestions for how any specific state or local jurisdiction should implement a  
195 recommendation. This NIST Special Publication is provided for all stakeholders to analyze and apply  
196 based on their own context and efforts to improve accessibility for voters with disabilities.  
197

198 NIST seeks public comment on this document in full. We are particularly interested  
199 in hearing feedback on the systemic barriers and systemic recommendations; as  
200 well as the text and suggestions addressing the voter registration form. We seek  
201 input on the specific barriers and recommendations provided for each voting  
202 activity addressed. This draft report does not include all citations for references,  
203 terms, acronyms, etc., but these will be provided in the final document. Please  
204 provide feedback and suggestions on the call out boxes and whether the content in  
205 these boxes are appropriate examples. Consider using the comment template at:  
206 <https://www.nist.gov/itl/voting> if it eases your ability to provide comments; however,  
207 use of the form is not necessary. Send comments in the form easiest for you.  
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## 2. Systemic Barriers to and Recommendations for Voting Accessibility

There are five systemic barriers across the voting process which appeared across the material, discussions, and public responses. These create challenges not only to voters with disabilities, but also to election officials and other stakeholders who implement the process. To address these barriers, we identified five systemic recommendations that impact voter privacy and independence across the voting process.

### Systemic Barriers

- Struggles to meet federal standards, laws, and guidelines that address accessibility for voters.
- Gaps in accessible communication and information for voters with disabilities.
- Inaccessibility of paper.
- Design of security solutions may not consider accessibility.
- Extra obstacles encountered by voters with disabilities.

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### Systemic Recommendations

- Create guidance to help address meeting federal standards, laws, and guidelines.
- Improve dissemination, outreach, and accessibility of voting information.
- Provide accessible options for the voting process.
- Integrate the disability community into all aspects of voting.
- Conduct research and development to promote access to voting.

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Section 2.1 describes the systemic barriers that impact voters with disabilities across the voting process. Section 2.2 describes recommended actions to overcome these barriers and promote access to voting for voters with disabilities. In many cases, we recommend already existing best practices and guidance be applied more broadly to voting across the country. Where relevant, we provide examples of existing guidance, best practices, and research currently put into practice by federal, state, and local governments as well as by researchers, industry, and advocacy groups.

### 2.1. Systemic Barriers

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Accessibility challenges stemming from systemic barriers differ depending on area and access to technology:

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235

- **Geographic area:** For example, polling location parking is a challenge in both urban and rural areas; urban areas often lack enough parking spaces, and rural areas often lack stable ground



236 in the parking areas. Depending on the time of year that an election is held, weather may create  
237 additional challenges (e.g., a curb cut blocked by snow, flooding, etc.).

- 238 • **Access to technology:** Americans with disabilities, regardless of age, are more likely than  
239 those without disabilities to experience digital divides using the internet and technology.<sup>4</sup>

240  
241 Voters are impacted by barriers depending on where they live. Accessibility differs widely both between  
242 states and between jurisdictions within a state. States have different policies and voting laws that can  
243 affect voters with disabilities in different ways.  
244

### 245 **2.1.1. Struggles to meet federal standards, laws, and guidelines that address** 246 **accessibility for voters.**

247 Guidelines, standards, and laws exist to ensure accessibility throughout the voting process:

- 248 • The Americans with Disabilities Act (ADA),<sup>5,6</sup> the ADA Standards for Accessible Design<sup>7</sup>  
249 and the guidance from the ADA Checklist for Polling Places,<sup>8</sup>
- 250 • The Voting Rights Act (VRA)
- 251 • Section 508 of the Rehabilitation Act, including the associated Web Content Accessibility  
252 Guidelines (WCAG)
- 253 • Help America Vote Act (HAVA)<sup>9</sup>
- 254 • Voluntary Voting System Guidelines (VMSG) 2.0<sup>10</sup>
- 255 • The National Voter Registration Act (NVRA)<sup>11</sup>

256  
257

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<sup>4</sup> Anderson M, Perrin A (2017) *Disabled Americans are less likely to use technology*. Pew Research Center (Washington, D.C.) Available at: <https://www.pewresearch.org/fact-tank/2017/04/07/disabled-americans-are-less-likely-to-use-technology/>.

<sup>5</sup> Americans With Disabilities Act of 1990 (ADA), Pub. L. No. 101-336, 104 Stat. 328 (1990).

<sup>6</sup> Americans With Disabilities Act of 1990 (ADA), Pub. L. No. 101-336, 104 Stat. 328 (1990), 28 Code of Federal Regulations (CFR) part 35 (title II).

<sup>7</sup> US Department of Justice (2010) 2010 ADA Standards for Accessible Design. DOJ (Washington, D.C.) Available at: [https://www.ada.gov/2010ADASTandards\\_index.htm](https://www.ada.gov/2010ADASTandards_index.htm).

<sup>8</sup> US Department of Justice (2016) *Americans with Disabilities Act ADA CHECKLIST FOR POLLING PLACES*. DOJ (Washington, D.C.) Available at: <https://www.ada.gov/votingchecklist.pdf>.

<sup>9</sup> Help America Vote Act of 2002 (HAVA), Pub. L. No. 107-252, 116 Stat. 1666-1730 (2002), codified at 42 U.S.C. §§ 15301-15545.

<sup>10</sup> U.S. Election Assistance Commission (2021) Voluntary Voting System Guidelines 2.0, EAC (Washington, D.C.) Available at: <https://www.eac.gov/voting-equipment/voluntary-voting-system-guidelines>.

<sup>11</sup> The National Voter Registration Act of 1993 (NVRA), Pub. L. No. 103-31, 107 Stat. 77-89 (1993).

258 State and local elections officials face challenges in meeting these laws, standards, and guidelines.  
259 For example, in 2016, the Government Accountability Office (GAO) surveyed polling places and  
260 found that 83% had at least one potential impediment to voting for people with disabilities, violating  
261 ADA requirements.<sup>12</sup>

262  
263 A frequent underlying cause of these barriers is the lack of resources and funding available to state  
264 and local election officials to provide accessible options for elections for voters with disabilities.<sup>13</sup>

- 265 • Without resources, election officials may be unable to replace old and outdated voting  
266 technology. Much of the equipment purchased under HAVA is approaching the end of its  
267 designed service life.<sup>14</sup> This lack of resources leads to polling places that are not up to date  
268 with current technologies and federal guidelines.
- 269 • Funding concerns limit the ability of state and local governments to develop and implement  
270 online voting services, forms, and websites that meet federal standards for accessibility.<sup>15</sup>
- 271 • In small local jurisdictions, including both counties with small populations and states where  
272 elections are administered by town clerks, there may be as few as a single full-time staff  
273 member to run both elections and other functions of the clerk's office. These small offices  
274 may face additional challenges in recruiting and training staff or temporary personnel, hiring,  
275 and retaining staff with technological skills to design, implement, and troubleshoot  
276 technology for voting.
- 277 • Not all voters with disabilities have access to broadband, internet, or computers. For  
278 example, only 72% of adults with disabilities have a smartphone compared to 88% of those  
279 without disabilities.<sup>16</sup> Election officials may lack resources to provide additional accessible  
280 alternatives to voters with disabilities who cannot use online or electronic options even when  
281 they are accessible.

### 283 **2.1.2. Gaps in accessible communication and information.**

284 Voters with disabilities who rely on alternative communication, language, and interaction methods  
285 face barriers when:

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<sup>12</sup> US Government Accountability Office (GAO) (2017) *GAO-18-4 Voters with Disabilities: Observations on Polling Place Accessibility and Related Federal Guidance*. GAO (Washington, D.C.) Available at: <https://www.gao.gov/assets/gao-18-4.pdf>.

<sup>13</sup> Presidential Commission on Election Administration (2014) *The American Voting Experience: Report and Recommendations of the Presidential Commission on Election Administration*. Presidential Commission on Election Administration (Washington, D.C.) Available at: <http://web.mit.edu/supportthevoter/www/files/2014/01/Amer-Voting-Exper-final-draft-01-09-14-508.pdf>.

<sup>14</sup> US Government Accountability Office (GAO) (2018) *GAO-18-294 Elections Observations on Voting Equipment Use and Replacement*. GAO (Washington, D.C.) Available at: <https://www.gao.gov/assets/gao-18-294.pdf>.

<sup>15</sup> National Conference of State Legislatures (NCSL) (2021) Available at: <https://www.ncsl.org/research/elections-and-campaigns/election-costs.aspx>.

<sup>16</sup> (see Footnote 4).

- 286 • **Asking for information in-person.** When poll workers and election officials do not have the  
287 knowledge or resources to communicate with a voter with a disability (e.g., American Sign  
288 Language (ASL)), the voter may be unable to complete parts of the voting process.
- 289 • **Receiving election information and registering to vote.** Information is often not provided  
290 through accessible communication channels such as ASL interpretation or closed  
291 captioning.
- 292 • **Using assistive technology (AT).** Although AT is commonly used by many in the disability  
293 community, AT is often not supported in, or compatible with, parts of the voting process,  
294 including during interactions with poll workers and voting technology.  
295

296 Information for voters can be inaccessible in several ways:

- 297 • Web information on where to vote, what forms of identification are accepted, voter guides,  
298 and accessibility and language options, often do not fully meet ADA accessibility  
299 requirements.
- 300 • Online forms and applications may not be set up correctly to work with personal AT or may  
301 not be compatible or work correctly on mobile devices preferred by some people with  
302 disabilities.
- 303 • Information about the voting process is often not written in plain language, creating  
304 challenges for voters with intellectual, developmental, learning, and neurocognitive  
305 disabilities, and voters with disabilities who are low literacy or who speak English as a  
306 second language.
- 307 • Voters without access to the internet or computers may not be able to obtain information in  
308 an accessible method.  
309

310 Voters with disabilities also face barriers when information about the voting process, relevant laws,  
311 and details on accessibility are either not available or is not easily found.  
312

### 313 **2.1.3. Inaccessibility of paper**

314 The use of paper in many aspects of voting is a pervasive challenge that excludes some voters with  
315 disabilities—especially those with manual dexterity or who are blind or low vision—from privately and  
316 independently participating in the voting process.

- 317 • Signing and handling a registration form is difficult for voters with print disabilities.<sup>17</sup>
- 318 • Marking, writing-in candidates, and handling a paper ballot is difficult for voters with print  
319 disabilities.

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<sup>17</sup> A print disability refers to “a person who cannot effectively read print because of a visual, physical, perceptual, developmental, cognitive, or learning disability.” Source: George Kerscher, Reading Rights Coalition (1988-1989) “The definition of “print disabled”?”. Available at: <https://web.archive.org/web/20131024195135/http://readingrights.org/definition-print-disabled>.

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- 322
- While accessibility of voting machines to mark, verify, and cast a paper ballot is improving in newer designs, voters with disabilities often need to still handle a paper ballot to verify and submit their vote.
- 323
- Returning a paper form or ballot is difficult for voters with manual dexterity disabilities, especially when paths to locations are not accessible or locations themselves are not accessible (e.g., polling place, ballot drop box, mailbox, etc.).
- 324
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- 326

327 It is important to note that the use of paper is the barrier. Where paper is used, it is up to the states  
328 to ensure that there are accessible alternatives to provide equal opportunity to voters with  
329 disabilities consistent with the law.

330

331 **2.1.4. Design of security solutions may not consider accessibility.**

332 The security-related aspects of voting solutions can create barriers when they are not designed to  
333 also meet laws that require accessibility. For example, the return to hand-marked paper ballots and  
334 electronic ballot markers to address security problems with fully electronic voting systems often  
335 creates new barriers, especially for voters with print disabilities<sup>18</sup> (see Sec. 2.1.3).

336

337 **2.1.5. Extra obstacles encountered by voters with disabilities.**

338 Shortcomings in accessible voting have created extra obstacles for people with disabilities,  
339 including:

- 340
- Voters with disabilities often have to extensively plan their voting experiences; if they are unable to find accessible transportation, accessible paths to the polling place/ballot drop box, forms to request vote by mail ballots, and methods to communicate, they may be unable to vote.
- 341
- Some voters with disabilities may be placed in situations with challenging physical accessibility or which are inaccessible, including traveling to and navigating polling location parking lots, polling places not located on a ground floor, polling locations that lack curb cuts or ramps, polling locations with inaccessible doors, ballot drop boxes, election offices, and other locations where voters need to obtain information for voting (e.g., Department of Motor Vehicles (DMV), voter registration office, notary office, etc.).
- 343
- Some voters with disabilities have difficulties obtaining a driver's license or state identification. Some of these voters cannot drive or may have difficulties finding accessible transportation to the DMV; they may also have challenges paying any fees associated with the identification, as
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<sup>18</sup> (see Footnote 17).

352 there are higher unemployment rates for people with disabilities.<sup>19,20, 21</sup> Without identification,  
353 they may be unable to cast their vote.

- 354 • Voters with disabilities may experience delays when accessible machines, typically electronic  
355 ballot markers, are not set up or not working or when poll workers must find the correct method  
356 to communicate with voters.
- 357 • Long wait times during in-person voting can be particularly burdensome to voters with  
358 disabilities who have difficulty standing for an extended period.
- 359 • It is disrespectful and stigmatizing when voters have their right to vote independently and  
360 privately questioned, when voters have their right to choose to be aided by someone other than  
361 a poll worker be denied, and when they are segregated from other voters to use accessible  
362 voting machines set apart as distinct in a polling place.

363

## 364 **2.2. Systemic Recommendations**

365

### 366 **2.2.1. Create guidance to help address meeting federal standards, laws, and guidelines.**

367 The voting process may improve for voters with disabilities if guidelines and requirements currently in  
368 national laws are consistently applied across the country. Relevant national laws and guidelines  
369 include:<sup>22</sup>

- 370 • ADA requirements and guidance for polling place physical accessibility<sup>23</sup> and for effective  
371 communications with people with disabilities (i.e., provision of auxiliary aids, services, and  
372 reasonable modifications of policies, practices, and procedures)<sup>24</sup>
- 373 • VRA requirements regarding receipt of assistance from a person the voter with a disability  
374 chooses (who is not the voter's employer or an officer or agent of the voter's union) and not  
375 conditioning the right to vote on ability to read or write
- 376 • NVRA requirements regarding agencies that provide voter registration services

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<sup>19</sup> US Government Accountability Office (GAO) (2014) *GAO-14-634 Elections* Issues Related to State Voter Identification Laws. GAO (Washington, D.C.) Available at: <https://www.gao.gov/assets/gao-14-634.pdf>.

<sup>20</sup> Des Cognets J, Rafert G (2019) *Assessing the Unmet Transportation Needs of Americans with Disabilities*.

<sup>21</sup> U.S. Department of Labor (DOL) Bureau of Labor Statistics (BLS) (2021) PERSONS WITH A DISABILITY: LABOR FORCE CHARACTERISTICS – 2020. DOL BLS (Washington, D.C.) Available at: <https://www.bls.gov/news.release/pdf/disabl.pdf>.

<sup>22</sup> US Department of Justice (2014) The Americans with Disabilities Act and Other Federal Laws Protecting the Rights of Voters with Disabilities. DOJ (Washington, D.C.) Available at: [https://www.ada.gov/ada\\_voting/ada\\_voting\\_ta.htm](https://www.ada.gov/ada_voting/ada_voting_ta.htm).

<sup>23</sup> (see Footnotes 5, 6, 7, and 8).

<sup>24</sup> US Department of Justice (2014) Effective Communication. DOJ (Washington, D.C.) Available at: <https://www.ada.gov/effective-comm.htm>.

- 377 • Help America Vote Act requirements<sup>25</sup> regarding providing at least one accessible voting  
378 system for persons with disabilities at each polling place in federal elections
- 379 • The Voting Accessibility for the Elderly and Handicapped Act of 1984 requiring accessible  
380 polling places in federal elections or alternate means of voting on election day
- 381 • Section 508 of the Rehabilitation Act establishes standards for the federal government for  
382 information and computer technology; the current version incorporates WCAG 2.0 for digital  
383 technology.
- 384 • In some states there are other relevant state laws for accessible forms, information, and online  
385 materials
- 386 • VVSG 2.0 requirements for certifying accessible voting technology

387 *Recommended actions to facilitate meeting federal requirements*

388  
389 To help state and local election offices meet federal requirements, federal agencies and organizations  
390 specializing in accessibility could:

- 391
- 392 • Create templates, resources, and tools for ensuring federal requirements are met.
- 393 • Create repositories of guidance and open-source tools for monitoring compliance with  
394 applicable guidelines and that help election officials determine if requirements are met.
- 395 • Sponsor programs, events, and challenges to create interdisciplinary teams to solve specific  
396 challenges in meeting federal requirements for voting.
- 397 • Update guidelines for voting to reflect current technology used by people with disabilities as  
398 new forms of technology are developed and embedded into daily life.

399  
400 In addition, the federal government should:

- 401 • Establish a multi-agency working group that takes a holistic view of how the federal government  
402 can advance the voting process through its use of technical advances, potential policy changes  
403 and compliance. This working group should also ensure recommendations are implemented in  
404 an efficient and effective way, and ensure no new barriers are introduced.
- 405 • Expand coordination of technical assistance and increase federal resources to prioritize  
406 implementation for the requirements and standards with respect to voting access for individuals  
407 with disabilities.

408  
409  
410 **2.2.2. Improve dissemination, outreach, and accessibility of voting information.**

411 Improving information about voting so that it is both usable and accessible will benefit all voters in  
412 understanding the voting process. “Usable accessibility” or universal design means going beyond basic

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<sup>25</sup> (see Footnote 9).

413 compliance to create information that is as easy to use for voters with disabilities as for those without.<sup>26</sup>  
414 This will benefit all voters in more easily understanding the voting process, not just those with  
415 disabilities.

416 *Recommended actions for state and local election officials*

417  
418 To ensure this information is accessible and reaches all voters who need it, state and local election  
419 officials should:

- 420 • **Provide information in a variety of channels.** This includes making information available in-  
421 person, online, in print media, radio, digital media, text and phone, and available prior to and  
422 during voting.
- 423 • **Provide information in multiple accessible formats.** This includes, but is not limited to,  
424 Braille, closed captioning, video, and multiple languages (including sign language  
425 interpretation). Some voters with intellectual, developmental, learning, and neurocognitive  
426 disabilities may benefit from visual formats (e.g., charts, infographics, etc.) and social stories to  
427 explain information.
- 428 • **Use plain language.** Phrase concepts and terms in a manner written for clarity and  
429 comprehension.
- 430 • **Test information for compatibility with AT.** Ensure that information has been tested to work  
431 with a variety of AT.
- 432 • **Provide training and tools to poll workers and election officials.** Poll worker training  
433 should include instruction on how to best communicate with people with disabilities (see Sec.  
434 7.2 for more information). Technology could also be used to provide a medium for  
435 communication and interaction (see examples below and Sec. 2.2.5 for more information)
- 436 • **Create channels for election officials to provide voter support.** Accessible communication  
437 methods can more quickly and easily connect voters with election officials when they have  
438 questions. Ways to facilitate accessible communication to provide information and updates  
439 include:
  - 440 ○ Having voters provide their contact information in order to receive emails and text  
441 messages
  - 442 ○ Using messaging systems like ballot trackers
  - 443 ○ Having accessible voter guides available online
  - 444

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<sup>26</sup> uiAccess. Usable Accessibility. Available at: <http://www.uiaccess.com/usable-access.html>.

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447

#### 448 **Examples of Communication and Dissemination**

- 449 • Washington state has created voter guides in multiple accessible formats and languages.<sup>27</sup>
- 450 • Jefferson County, Colorado developed an online chat feature for voters to ask questions about the  
451 voting process.<sup>28</sup>

452  
453 State and local election officials can also promote access to voting by disseminating information about  
454 the voting process, including accessible options, to voters. Tools and strategies state and local election  
455 officials can use include:

- 456 • **Accessible voter guides to walk voters through the entire process.** Voter guides should  
457 include information on:
  - 458 ○ Options, requirements, and dates for voting in-person or by mail
  - 459 ○ Instructions for marking and casting a ballot in-person or by mail. This includes  
460 instructions or tutorials on using accessible voting machine features
  - 461 ○ Physical description of the polling place, especially entrances, exits, accessible public  
462 transit, and parking
  - 463 ○ Accessibility options for voting and communicating, how to utilize those options, and  
464 what voters' rights are on election day
  - 465 ○ Contact information for additional help and questions
- 466 • **Practice and sample ballots to voters.** Sample ballots should be available online or in-  
467 person prior to election day in accessible formats. When voters can practice or receive  
468 demonstrations and training on voting technology, they become more comfortable with the  
469 machine and may more efficiently use the equipment.
- 470 • **Voting education classes for voters with disabilities.** First-time voters and voters with low  
471 computer literacy may especially benefit from learning about the voting process, their  
472 accessible voting options, and practice using an accessible voting machine. These could occur  
473 in convenient, accessible locations.

475 *Recommended actions for the federal government for information dissemination*

- 476  
477 • **Establish a national hotline or help desk staffed with experts for accessibility concerns**

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<sup>27</sup> Washington Secretary of State (2020). 2020 General Election Voters' Guide. Washington Secretary of State (Olympia, WA.) Available at: <https://www.sos.wa.gov/elections/voters-guide/2020/2020-general-election-voters-guide.aspx>.

<sup>28</sup> U.S. Election Assistance Commission (2020) Jefferson County Clerk and Recorder (CO) 2020 Clearinghouse Award Winner. EAC (Washington, D.C.) Available at: <https://www.eac.gov/election-officials/jefferson-county-clerk-and-recorder-co-2020-clearinghouse-award-winner>.



478 **across the voting process.** The U.S. Vote Foundation’s Voter Help Desk could serve as a  
479 model for this process.

- 480 • **Establish guidance and templates for outreach.** Relevant federal agencies could indicate  
481 what information voters need prior to election day and in what channels and formats to convey  
482 this information. This information should be available in an accessible format and able to be  
483 understood by voters with disabilities. For example, vote.gov or another federal website could  
484 facilitate providing relevant information to voters.  
485

### 486 **2.2.3. Provide accessible options for the voting process.**

487 When multiple options exist to vote, voters with disabilities can pick the option best suited to their  
488 needs and situation. Importantly, all methods of voting must be accessible; it is not sufficient to provide  
489 only one accessible method.

490 *Recommended actions to ensure options for voting include accessibility features at the state and local*  
491 *level*

492

493 Accessible options are needed when voters choose:

- 494 • **Whether to vote in-person or vote by mail.** Voters should be able to choose how they fill out  
495 and cast their ballot. Vote by mail can overcome many barriers voters with disabilities  
496 experience, such as transportation challenges. However, several steps must be taken to  
497 ensure this process is accessible. Vote by mail should also not be the accessible alternative to  
498 voting in-person; in fact, many voters with disabilities prefer to vote in person.<sup>29</sup> Therefore,  
499 steps must also be taken to ensure in-person voting is accessible.
- 500 • **How to cast their ballot in-person.** Voters should have the option to cast their ballot using  
501 paper or using an accessible voting machine. Both options should have accessibility features  
502 such as, but not limited to, magnification devices for paper, physical accessibility for voting  
503 system stations for voters with mobility disabilities, and adjustable heights for voting system  
504 stations. As discussed earlier, VVSG 2.0 has a comprehensive list of accessibility  
505 requirements, in particular, for accessible voting machines and ballot scanners.
  - 506 ○ Voters who need assistance may also have a trusted person assist them in filling out  
507 and casting their ballot – but that should be an option, not a necessity for those who  
508 prefer instead to cast their vote privately and independently.
- 509 • **Whether to use an electronic option.** Increase availability of electronically accessible options  
510 for voter information, registration, and other parts of the process. This includes creating  
511 accessible PDFs and fillable forms that work with current technology, including AT and mobile  
512 devices.  
513

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<sup>29</sup> Schur L, Kruse D (2021) *Disability and Voting Accessibility in the 2020 Elections: Final Report on Survey Results*. Submitted to the Election Assistance Commission (Washington, D.C.) Available at: [https://www.eac.gov/sites/default/files/voters/Disability\\_and\\_voting\\_accessibility\\_in\\_the\\_2020\\_elections\\_final\\_report\\_on\\_survey\\_results.pdf](https://www.eac.gov/sites/default/files/voters/Disability_and_voting_accessibility_in_the_2020_elections_final_report_on_survey_results.pdf).

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### What is an accessible voting system?

518 Under Section 301 of the 2002 Help America Vote Act, an **accessible voting system** is one that is  
519 accessible for individuals with disabilities, including nonvisual accessibility for the blind and visually  
520 impaired, in a manner that provides the same opportunity for access and participation (including privacy  
521 and independence) as for other voters. HAVA provides that this accessibility requirement can be met in  
522 federal elections through use of a direct recording voting system or other voting system equipped for  
523 individuals with disabilities at each polling place. The accessibility of voting systems is further governed  
524 by the Americans with Disabilities Act.

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### What are the relevant features of an accessible voting system?

530 An accessible voting system typically contains a number of features designed to ensure accessibility for  
531 voters with a range of disabilities to allow them to independently mark, verify, and cast their ballots. The  
532 most up-to-date features are described in some detail in the Voluntary Voting System Guidelines  
533 (VVSG 2.0) adopted by the U.S. Election Assistance Commission under HAVA.

534

535 Often, the **accessible voting machine** for in-person voting is an electronic **ballot marking**  
536 **device** (BMD) or **ballot marker**. This is a device that: permits contest options to be selected and  
537 reviewed on an electronic interface, produces a human-readable marked paper ballot, and does not  
538 make any other lasting record of the voter's selections. The accessibility guidelines in the VVSG specify  
539 that BMDs have accessibility features intrinsic to their design that include visual, enhanced visual, and  
540 audio formats and interactions modes that include touch and support for limited dexterity in the form of  
541 assistive technology switches. The guidelines also specify that all methods of interaction by voters have  
542 the same functionality as the visual format and touch mode not just for voting but also for voter  
543 verification, handling, and casting of the paper ballot. A paper ballot (from the BMD or hand-marked)  
544 may also be cast directly into a **ballot scanner**. Since these ballot scanners are voter-facing electronic  
545 devices and part of the voting system, there are also relevant accessibility guidelines for these  
546 scanners in the VVSG. Accessible voting machines, scanners, and voting stations also need to be  
547 physically accessible for voters in wheelchairs. More details are provided in Appendix II.

548

549

550 State and local election officials may consider different accessible options to provide. Options many  
551 states already use include:

- 552 • Early voting periods to allow voters to choose the days and times that work best for them.
- 553 • Vote centers located at places that are easily accessible.<sup>30</sup>
- 554 • Ballot pick-up services and mobile voting vans.
- 555 • Drive-through/curbside voting.

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<sup>30</sup> Center for Inclusive Democracy. Voting Location Siting Tool. Available at: <https://cid.usc.edu/sitingtool>.

- 556
- Drop-boxes for vote by mail ballots.
- 557
- Vote by mail return by a designated proxy.
- 558

559 State and local election officials may consider the accessibility of transportation to locations as well as  
560 the placement and reachability of features at those locations.

561

562 These options not only benefit voters with disabilities but may also benefit voters with similar needs.  
563 For example, ballot pick-up services and mobile voting vans benefit voters with limited mobility but  
564 could also benefit voters living in rural or remote areas.

565 *Recommended actions for promoting accessible voting options at the national level (by federal*  
566 *agencies or other organizations)*

567

- **Enhance training materials, templates, and guidance for state and local election officials.**  
568 Ensure that materials start from an accessible sample or template and that guidance includes  
569 instructions for tools and techniques for making voting information accessible.
  - **Host events, conferences, and a community of practice for election officials to share**  
571 **best practices.** These events could bring together election officials to share best accessibility  
572 practices and determine gaps where new practices are needed and could be coordinated with  
573 other relevant federal agencies and offices. These events should include representatives from  
574 the disability community and/or their advocates.  
575
- 576

#### 577 **2.2.4. Integrate the disability community into all aspects of voting.**

578 Many barriers to voting can be addressed by engaging with and integrating voters with disabilities into  
579 every step of the voting process. Widespread integration, engagement, and involvement of the  
580 disability community in the voting process will help to promote accessibility to voting for voters with  
581 disabilities. As the disability community says, “nothing about us, without us” (this motto, originally in  
582 Latin, has a long political history; the international disability rights community began using it in the  
583 1990’s<sup>31</sup>).

584 *Recommended actions for state and local election officials*

585

586 State and local election officials can promote inclusivity of the disability community by:

- **Establishing formal partnerships with disability community partners.** Partners can include  
587 protection and advocacy agencies, advocacy groups, disability rights organizations, Centers for  
588 Independent Living, state technology assistance programs, and other organizations. Election  
589 officials should engage these groups to provide insights and feedback to prepare states and  
590 counties for elections. Activities may include:  
591
    - Assisting with selecting and preparing polling locations.
- 592

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<sup>31</sup> Charlton, J. I. (1998). Nothing about us without us. University of California Press.

- 593 • Developing and designing poll worker training.
- 594 • Creating voter guides and outreach materials.
- 595 • Testing equipment and technology, forms, and processes used during elections.
- 596 • **Hiring poll workers and election officials with disabilities.** Including people with disabilities as
- 597 part of the staff could also provide additional support prior to voting by serving as part of voter
- 598 support hotlines.
- 599
- 600

601 **Examples of States and Counties that Have Established Formal Partnerships**

- 602 • Los Angeles County’s Community and Voter Outreach Committee brings together “citizen,
- 603 community, and advocacy organizations” to work with the county to provide services and
- 604 information dissemination to voters with specific needs.<sup>32</sup> For example, this group provides
- 605 information about voter education on voting methods and systems, and assists with poll worker
- 606 training and voter education.<sup>33</sup>
- 607 • Los Angeles County also works with the Voting Accessibility Advisory Committee, a group
- 608 comprising a variety of advocacy groups that works with the county to improve accessibility by
- 609 working on a regular basis with the election office to make specific recommendations.<sup>34</sup>
- 610 • Wisconsin election officials worked with their Accessibility Advisory Committee and Wisconsin
- 611 Disability Coalition in 2020 to develop training videos, webinars, and guides.<sup>35</sup>
- 612 • Washington state passed legislation to create Accessible Community Advisory Committees in each
- 613 county, where resources may be used to address barriers to people with disabilities, including in the
- 614 voting process.<sup>36</sup>

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616 *Recommended actions for the federal government*

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<sup>32</sup> Los Angeles County (2019) Election Administration Plan 2019. Available at: [https://vsap.lavote.net/wp-content/uploads/2019/12/EAP\\_AMENDED\\_12-9-19\\_Final.pdf](https://vsap.lavote.net/wp-content/uploads/2019/12/EAP_AMENDED_12-9-19_Final.pdf).

<sup>33</sup> Los Angeles County. Community & Voter Outreach Committee. Available at: <https://www.lavote.net/home/voting-elections/community-voter-outreach/community-voter-outreach-committee/community-voter-outreach-committee>.

<sup>34</sup> Los Angeles County. Voting Accessibility Advisory Committee. Available at: <https://www.lavote.net/home/voting-elections/community-voter-outreach/voting-accessibility-advisory-committee/voting-accessibility-advisory-committee>.

<sup>35</sup> U.S. Election Assistance Commission (2020) Wisconsin Elections Commission 2020 Clearinghouse Award Winner. EAC (Washington, D.C.) Available at: <https://www.eac.gov/election-officials/wisconsin-elections-commission-2020-clearinghouse-award-winner>.

<sup>36</sup> Governor’s Committee on Disability Issues and Employment. (2021) What is the WA State Accessible Communities Act. Available at: <https://accessiblecommunities.wa.gov/about-accessible-communities-wa-state/what-wa-state-accessible-communities-act>.

618 The federal government should continue to coordinate efforts related to accessibility within federal  
619 agencies. Coordinated efforts could include:

- 620 • **Creating multidisciplinary working groups and communities of interest.** These teams can  
621 examine barriers and solutions to barriers for voters with disabilities with diverse experiences,  
622 characteristics, and needs, including voters with disabilities who, for example:
  - 623 ○ Have different types of disabilities, including those with intellectual, developmental,  
624 learning, and neurocognitive disabilities
  - 625 ○ Live in congregate settings
  - 626 ○ Live in their own homes and communities
  - 627 ○ Are Black, Indigenous, and People of Color (BIPOC).
  - 628 ○ Live in rural areas.
- 630 • **Including people with disabilities in the decision-making process.** People with disabilities  
631 can provide important perspectives and values for identifying solutions to barriers that voters  
632 with disabilities face across the voting process. Roles can include:
  - 633 ○ Designing and implementing voting procedures and practices.
  - 634 ○ Providing guidance and implementation during elections at the local and state level.
  - 635 ○ Researching, developing, designing, testing, and certifying voting technology to be  
636 accessible and secure.

### 638 **2.2.5. Conduct research and development to promote access to voting**

639 In the last 20 years, people with disabilities have benefited from improvements in technology that have  
640 supported increased independence and efficiency in many domains of life. Unfortunately, these  
641 technological gains have not fully translated to improvements in the voting process for people with  
642 disabilities. In fact, many aspects of the voting process still rely on old or outdated technology (e.g., fax  
643 machines, etc.) and have yet to utilize technology and features ubiquitous in the world today.

645 Periodic reviews of both general purpose and specialized assistive technologies commonly used by  
646 people with disabilities can help identify new ways these tools can be incorporated into future elections  
647 systems or used by voters to navigate polling places, or to vote independently.

649 Research and development of technology to integrate into the voting process is one of the greatest  
650 opportunities to improve accessibility in voting. Key considerations for future research and  
651 development efforts include:

- 652 ○ Establishing multidisciplinary research teams that include experts in accessibility, user  
653 experience, human factors, cybersecurity, and elections.

- 655 ○ Applying universal design principles<sup>37</sup> ensures that technology is designed and implemented to  
656 be usable by and support the needs of a wide range of people, regardless of disability needs.
- 657 ○ Designing and testing new technology with voters with disabilities and their needs as part of the  
658 process by implementing user-centered design process standards and best practices.
  - 659 ○ Currently, VVSG 2.0, a set of voting system guidelines adopted pursuant to HAVA by  
660 the U.S. Election Assistance Commission for certifying voting systems<sup>38</sup>, does this by  
661 calling for voting technology and its instructions to be implemented using user-centered  
662 design processes and tested for usability with both voters with disabilities as well as poll  
663 workers, with results reported by system developers in standard formats. This can be  
664 expanded to embrace developing technology and processes in voting including online  
665 voter registration and vote by mail request webpages and portals, vote by mail  
666 instructions and packaging, and voter guides.
  - 667 ○ Voting systems and voting information should be tested with voters with a variety of  
668 disabilities (e.g., manual dexterity disabilities, blind or low vision, etc.) who have diverse  
669 experiences with AT, technology, and voting. If possible, to encourage participation,  
670 compensate voters who participate in the study in line with ethical research practices.  
671 Although testing of voting systems is done during development by vendors, states can  
672 include testing in their own certification processes.

674 Below we describe how research and implementation can better integrate existing technology into the  
675 voting process as well as what areas of future research and technology development can be explored.

676 *Research and implement existing technology into voting processes*

677 Ways current technology can be better integrated into voting through research include:  
678  
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- 680 • **Increasing automation of voting processes.** For example, online registration and vote by  
681 mail services that provide information personalized to a voter registration record could connect  
682 data sources to automate processes. This could streamline the process for both voters and  
683 election officials. Many states currently provide these features.
- 684 • **Investigating new communication technology.** Technology that supports alternative  
685 interaction styles may include live or remote ASL interpreters.
- 686 • **Customizing and streamlining voters' experiences.** Technology can be used to  
687 automatically configure, based on voter information, the accessible features of voting systems,  
688 making it easier and faster for each voter to have a customized experience with the accessibility  
689 features the voter prefers and to streamline the in-person voting process.
  - 690 ○ The voter registration record could include individual accessibility preferences, including  
691 large text, color contrasts or even preferences for different electronic information

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<sup>37</sup> Connell BR, Jones M, Ron Mace R, et. al. (1997) The Principles of Universal Design Version 2.0. NC State University, The Center for Universal Design (Raleigh, NC.) Available at: [https://projects.ncsu.edu/ncsu/design/cud/about\\_ud/udprinciplestext.htm](https://projects.ncsu.edu/ncsu/design/cud/about_ud/udprinciplestext.htm).

<sup>38</sup> (see Footnote 9).

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formats. Voting system preferences could match the options available in the local accessible voting machines.<sup>39</sup>

- Tools to allow voters to use their own technology and AT to mark a sample ballot at home and easily transfer their choices to the accessible voting system support voters with disabilities. They not only speed up the time to vote at the polling place, reducing fatigue from waiting time, but also help voters who may need more time to make their selections.<sup>40,41,42</sup>
- **Assisting with selecting and setting up polling places.** Online tools that store and analyze data can be used to determine where polling places should be located and assist poll workers with setting up polling places on election day. Collecting this data could be used to document the degree to which accessible voting options are not currently available, and to identify the particular jurisdictions or locations that need more attention. Some examples of using technology to collect this information include:
  - Some state Protection and Advocacy (P&A) agencies have converted the ADA Checklist for Polling Places<sup>43</sup> into an electronic form to assess polling places. This checklist provides information for evaluating the physical accessibility of polling places, including parking, passenger drop-off locations, accessible routes, ramps, protruding objects, building entrance, lifts and elevators, and voting area.
  - There are a variety of tools available online that help election officials collect analyze and simulate data from polling places to understand how to best set up, design, and manage polling places. Examples of tools include voting system timers and simulation modeling of polling place flow, and data collection tools.<sup>44</sup> Use of these tools may help election officials identify how to best arrange a polling place to be accessible as well as how to reduce wait times, delays, and physical barriers.

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<sup>39</sup> Accessible Voting Technology Initiative (2012) Remote Voting: Voting Profile Development. Accessible Elections Design Workshop. Available at: <https://elections.itif.org/projects/design-workshops/concept-express-voting/>.

<sup>40</sup> Accessible Voting Technology Initiative (2012) Sample Ballot & Information Transfer System. Accessible Elections Design Workshop. Available at <https://elections.itif.org/projects/design-workshops/concept-sample-ballot-information-transfer-system/>.

<sup>41</sup> Lola P, Eugene W, Hall P, Gilbert JE. Balloting: Speeding up the voting process. In International Conference on Human-Computer Interaction 2013 Jul 21 (pp. 373-377). Springer, Berlin, Heidelberg.

<sup>42</sup> Los Angeles County Registrar-Recorder/County Clerk. Interactive Sample Ballot. Available at: <https://lavote.net/isb>.

<sup>43</sup> (see Footnote 8).

<sup>44</sup> The University of Rhode Island. URI Voter Operations & Election Systems. Available at: <https://web.uri.edu/urivotes/tools/>.

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### Examples of Integration of Technology into the Voting Process

- In 2019, Merced County won an Election Assistance Commission (EAC) award for using a tablet to connect voters with a hearing disability with sign-language interpreters on election day.<sup>45</sup>
- The Michigan Voter Information Center allows voters to view personalized information helpful to the voting experience, such as their polling place location and hours and a sample of a ballot.<sup>46</sup>
- The Los Angeles County Interactive Sample Ballot tool allows voters to review their ballot ahead of time, save their choices on their phone or other personal device, and transfer selections to the VSAP Ballot Marking Device at the vote center to be reviewed, printed, and cast.<sup>47</sup>
- The University of Rhode Island has developed tools to help election officials collect and understand data from their polling places. They have developed a voting system timer, a data importing and processing tool, 2D and 3D models of polling locations, and software to simulate polling place flow.<sup>48</sup>
- The Voting Center Siting Tool developed in a university program covers jurisdictions in 10 states.<sup>49</sup> It uses local demographic and voting data to provide election officials information. The criteria for siting include convenience to public transportation and locations near residential areas with high concentrations of people with disabilities, based on the requirements of California's Voter's Choice Act, a law passed in 2016 for making voting more convenient.<sup>50,51</sup>
- Remote Accessible Vote by Mail (RAVBM) uses current technology to assist voters with disabilities in voting by mail. California is one example of many states that use this system in which voters can download and mark their vote by mail ballot from home using their own AT, and then print, sign, and return the envelope by mail or at a voting location.<sup>52</sup> See Sec. 4.1 for more information.

<sup>45</sup> U.S. Election Assistance Commission (2019) Merced County Registrar of Voters Office – 2019 Clearinghouse Award Winner. EAC (Washington, D.C.) Available at: <https://www.eac.gov/election-officials/merced-county-registrar-voters-office-2019-clearinghouse-award-winner>.

<sup>46</sup> State of Michigan. Your Voter Information. Available at: <https://mVIC.sos.state.mi.us/Voter/Index>.

<sup>47</sup> (see Footnote 42).

<sup>48</sup> (see Footnote 44).

<sup>49</sup> (see Footnote 30).

<sup>50</sup> The 14 criteria for locations can be found in: S.B. 450, (California 2016). Available at: [https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill\\_id=201520160SB450](https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160SB450).

<sup>51</sup> California Secretary of State. California Voter's Choice Act. Available at: <https://www.sos.ca.gov/elections/voters-choice-act>.

<sup>52</sup> California Secretary of State. Remote Accessible Vote-By-Mail (RAVBM). Available at: [https://www.sos.ca.gov/elections/voting-resources/remote-accessible-vote-mail?fbclid=IwAR3qIXSNhEoIQEbYiDxtjzIzWmnGWA50EY5OhVZtXstasoS0\\_ocCH-ERiM](https://www.sos.ca.gov/elections/voting-resources/remote-accessible-vote-mail?fbclid=IwAR3qIXSNhEoIQEbYiDxtjzIzWmnGWA50EY5OhVZtXstasoS0_ocCH-ERiM).



740 *Research and develop voting technology of the future*

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742 Researchers, developers, and designers should continue to explore how to develop solutions and  
743 standards for the future of voting. Some areas where research should be continued include:

- 744 • **Integrating personal AT throughout the voting process.** Voters with disabilities could have  
745 improved independence if they could use their personal AT when registering, getting to the  
746 polling site, and checking-in.
- 747 • **Identifying alternative signature methods for voters who need them.** Voters unable to sign  
748 consistently or at all would have increased independence if alternative methods existed to sign  
749 both paper forms and online documents securely.
- 750 • **Designing affordable technology to assist with in-person voting experiences.** Technology  
751 could be leveraged to overcome the physical barriers voters with disabilities encounter when  
752 voting in-person. Current research on technology such as magnification devices, way-finding  
753 apps and beacons, and other technology to assist voters should continue.<sup>53,54</sup>
- 754 • **Developing accessible and secure methods for future voting.** Future research should  
755 explore how to continue to securely integrate next generation technology into the voting  
756 process. For example, electronic ballot return would overcome many barriers faced by voters  
757 with disabilities. However, it is vital that research on security continue as electronic ballot return  
758 systems are being implemented.

759

#### 760 **Examples of Modern Voting Technology Evolving from Research**

- 761 • Systems that are certified to the new VVSG 2.0 requirements allow the secure use of AT.<sup>55</sup> For  
762 example, a voter with manual dexterity disabilities could use their own switch technology to control  
763 the accessible voting machine as they mark their ballot.
- 764 • ElectionGuard is an example of voting technology being designed with accessibility experts included  
765 in the development process.<sup>56</sup> The software aims to make voting “secure, transparent, and  
766 accessible” by using end-to-end (E2E) verifiability.<sup>57</sup> E2E verifiable voting systems are a type of  
767 voting system that is software independent and could potentially perform as a paper-based or  
768 paperless system. For more on software independence, see Sec. 5.2.

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<sup>53</sup> Selker T (2014) Research in Accessible Voting Report. Research in Accessible Voting. Available at:  
[https://www.eac.gov/sites/default/files/eac\\_assets/1/1/Research%20on%20Accessible%20Voting%20Complete%20Final%20Report.pdf](https://www.eac.gov/sites/default/files/eac_assets/1/1/Research%20on%20Accessible%20Voting%20Complete%20Final%20Report.pdf).

<sup>54</sup> EAC-NIST Human Factors Public Working Group (2016) Assistive Technology in the Polling Place: Current and emerging technology. Center for Civic Design (High Bridge, NJ.) Available at: [https://civicdesign.org/wp-content/uploads/2015/05/AT-in-the-Polling-Place\\_2016-1228.docx](https://civicdesign.org/wp-content/uploads/2015/05/AT-in-the-Polling-Place_2016-1228.docx).

<sup>55</sup> VVSG 2.0 requirement 8.1-I Standard PAT jacks (see Footnote 10).

<sup>56</sup> Burt T (2019) ElectionGuard available today to enable secure, verifiable voting. Available at:  
<https://blogs.microsoft.com/on-the-issues/2019/09/24/electionguard-available-today-to-enable-secure-verifiable-voting/>.

<sup>57</sup> ElectionGuard. Available at: <https://www.electionguard.vote>.

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771 *Recommended actions for the federal government*

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773 The federal government should enhance efforts dedicated to multidisciplinary research and  
774 development of technology used throughout the voting process. The federal government could  
775 establish public-private partnerships to:

- 776 • Set priorities, develop guidance, and provide funding, in the form of grants and contracts, for  
777 important research topics in accessible voting.
- 778 • Conduct prize challenge competitions to encourage development of new voting technology.
- 779 • Create channels for sharing research, data, open-source code, and tools through online  
780 communities of interest, state and federal databases, and/or national conferences.
- 781 • Establish best practices and guidance for establishing interdisciplinary teams that use universal  
782 design and user-centered design principles to fully support accessibility in research, including  
783 voting security.
- 784

785 **3. Voter Registration and the National Voter Registration Form**

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787 **3.1. Voter Registration and the National Mail Voter Registration Form**  
788 **Barriers**

**Barriers**

- National Mail Voter Registration Form challenges
- Online voter registration is insufficient or does not exist.
- Paper is not an accessible option for voters with print disabilities.
- Verifying the form adds additional complexity for voters with disabilities.

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791 Though many states and local jurisdictions offer a variety of methods and opportunities to register  
792 to vote, many voters with disabilities still encounter challenges. Online voter registration, currently  
793 offered or being implemented by Washington, D.C. and all but six states (as of September 2021),<sup>58</sup>  
794 has reduced barriers for many. However, issues still exist, as only 8.8% of voters with disabilities  
795 were likely to register online compared to 15% of voters without disabilities — and online  
796 registration may itself involve new barriers for at least some voters with disabilities.<sup>59</sup>

<sup>58</sup> National Conference of State Legislatures (NCSL) (2021) Available at: <https://www.ncsl.org/research/elections-and-campaigns/election-laws-and-procedures-overview.aspx>.

<sup>59</sup> Schur L, Kruse D (2021) *Fact Sheet: Disability and Voter Turnout in 2020 Elections*. Submitted to the Election Assistance Commission (Washington, D.C.) Available at: <https://www.eac.gov/documents/2021/06/30/fact-sheet-disability-and-voter-turnout-2020>.

*“Barriers to voter registration lead to inability to vote. Requiring ID that you have to pay for when you can't drive is a form of a poll tax...Registration needs online options with accessible Websites...”*

- Received from Federal Register Notice 86 FR 32026

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### **National Mail Voter Registration Form Challenges**

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The National Mail Voter Registration Form (NMVRF) is a form that a voter can fill out and mail to register to vote in 47 states.<sup>60</sup> The EAC was instructed to create a national mail voter registration form as part of NVRA 52 U.S.C. § 20505 and 52 U.S.C. § 20508 in 1993.<sup>61</sup> Currently, a voter downloads the form, navigates to their state’s specific instructions, and completes the fillable PDF form digitally or prints it out to fill out by hand. The form can then be signed, and mailed to the state.

While the NMVRF itself is an accessible, fillable PDF the process of filling out the form has accessibility challenges:

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- Because the form is designed to be mailed, some voters with disabilities face the same challenges with this form as any paper form (e.g., printing, physically mailing, etc.) Also, some voters with disabilities may not own printers, thus having to rely on a third party for help.

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- The form must also be physically signed, which is a challenge for voters with print disabilities.<sup>62</sup>

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- The process to find the relevant state instructions can be cumbersome to voters.
  - The printed form and instructions are 27 pages long which can be overwhelming, complicated, or confusing to those filling it out, especially for those using screen readers or for voters with intellectual, developmental, learning, or neurocognitive disabilities.
- In addition, like all paper voter forms, it is inefficient, because the voter’s information must be manually transcribed into the voter registration database by election staff.

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**Online voter registration systems in many states are insufficient or do not exist.**

<sup>60</sup> With exceptions of North Dakota which does not have voter registration and Wyoming which does not permit mail registration. New Hampshire town and city clerks accept the application as a request for vote by mail registration form. See footnote 2 for more information.

<sup>61</sup> (see Footnote 11).

<sup>62</sup> (see Footnote 17 for print disability definition).

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- Online voter registration enables voters with disabilities to use assistive technology that they are familiar with to fill out the form without having to handle paper or needing to physically mail the form back. As of September 2021, six states do not offer or have plans to offer online voter registration.<sup>63</sup>
- Online voter registration systems can be difficult to use, especially with assistive technology.
  - Some state systems can be inaccessible to assistive technology.
  - Forms built on older technology may not be responsive. For example, long lines of text require a lot of additional scrolling to read each line fully; this can be exceptionally difficult for those with manual dexterity disabilities.
  - Navigating the form is challenging when navigation items (e.g., *Submit* or *Next* links) are in non-standard or inconsistent locations.
  - When using screen magnification technologies, some items on online state systems can be easily missed.
  - Some information is portrayed as an image, which cannot be read by screen readers.
  - Alternative text is not adequately descriptive or is incorrectly coded.
- Complex language can make the forms difficult to understand.
- Poor color contrast of online state registration systems can make text difficult to read.
- Voters with disabilities may not be able to complete the registration process online if there is no alternative to using a state DMV license or ID to provide a signature.

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**Paper versions of state voter registration are not an accessible option for voters with print disabilities.**

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Many voters with disabilities encounter challenges with paper versions of state voter registration. Challenges they face include:

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- Voters may not be able to see the information on the form.
- Filling out and signing the form without assistance is difficult or impossible for voters with print disabilities.
- Returning a physical form is a challenge for voters who have difficulties traveling long distances or to locations that are not accessible. For example, voters in rural areas may have to travel further to access an appropriate drop-off location.
- If the process requires the voter to print the completed form, many voters with print disabilities<sup>64</sup> who do not own a printer have to rely on a third party for assistance.
- Mailing a form is difficult for voters with some disabilities to complete without assistance, especially packaging, sealing, and addressing an envelope.

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**Verifying the form adds additional complexity for voters with disabilities.**

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<sup>63</sup> (see Footnote 58).

<sup>64</sup> (see Footnote 17 for print disability definition).

864 In many cases, verifying the form's accuracy is done by comparing information with the state's  
865 Department of Motor Vehicles information based on the individual's driver's license or a state  
866 identification card. However, there are many voters with disabilities who do not have a driver's  
867 license or state identification card, which is typically required. While this works for many, it is not  
868 sufficient to address the needs of some voters with disabilities.

870 Additional steps may involve having to contact the voter's election official or the local elections  
871 office. If the form needs to be corrected, then the voter typically needs to visit their local office in  
872 person to provide the updated information. This creates challenges for many voters for whom  
873 mobility and/or transportation is a concern.

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### 876 **3.2. Recommendations for Voter Registration & National Mail Voter** 877 **Registration Form**

#### **Recommendations**

- Increase the use of Automatic Voter Registration (AVR) and other methods where voter registration can be combined with other interactions with government.
- Modernize the National Mail Voter Registration Form experience.
- Increase access and improve accessibility to online voter registration services.

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880 The voter registration process can be improved in many ways to reduce barriers that voters with  
881 disabilities face. Expanding access to online voter registration services and complying with  
882 federal law ensures that persons with disabilities are not discriminated against on the basis of  
883 disability, including in the areas of accessibility and communications. This would reduce the  
884 barriers that many voters with disabilities face as they retrieve, fill out, and return the forms. The  
885 availability of online registration services would also reduce the reliance on paper, which is  
886 difficult or impossible for many voters with disabilities to use, especially those with print  
887 disabilities.<sup>65</sup>

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#### 889 **Increase the use of AVR and other methods where voter registration can be combined with** 890 **other interactions with government.**

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- Ensuring that everyone can obtain state identification easily would increase the number of voters with acceptable forms of identification, reducing barriers when registering to vote, when voting, and when casting their ballot.

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<sup>65</sup> (see Footnote 17 for print disability definition).

- 895 • States should consider moving to an AVR system. AVR is a process where eligible  
896 voters are registered by default, however they can opt out, when interacting with  
897 government agencies (e.g., DMV, etc.)<sup>66</sup> in the 20 states and Washington, D.C. that offer  
898 some form of AVR.<sup>67</sup>
- 899 ○ AVR may increase the number of people who register to vote when applying for a  
900 driver’s license, applying for social services including Medicaid and Supplemental  
901 Nutrition Assistance Program (SNAP), health insurance, filing taxes etc.
  - 902 ○ Implementing AVR would provide a more efficient and effective process; voters  
903 with disabilities would not have to complete extra steps to register.
  - 904 ○ Transferring registration information electronically — a feature of many AVR  
905 systems — also streamlines the process for states, making it more efficient.  
906 Additionally, this may potentially lower costs, allowing states to reallocate money  
907 they would typically spend on printing, mailing, and data entry/processing to  
908 other areas of the elections process.
- 909 • Ensure efficient reuse of official signatures for other governmental purposes for  
910 registration signatures and signature matching. Research and guidance are needed so  
911 that states can obtain signatures from multiple sources, beyond the Department of Motor  
912 Vehicles (DMV) and other NVRA Section 7 agencies.
  - 913 ○ States could include transactions at agencies including Fish and Wildlife, housing  
914 authorities, and tax filings.<sup>68</sup> For example, Alaska uses information from their  
915 Permanent Fund Dividend to support AVR.<sup>69</sup>
- 916 • Work with third parties to perform usability and accessibility testing of new or updated  
917 forms, websites, or systems, as development and implementation occurs.
- 918 • Update the vote.gov website to guide voters through the registration process for their  
919 state or jurisdiction.

921 **Modernize the National Mail Voter Registration Form Experience**

922 Though the NMVRF itself is an accessible, fillable PDF, the process of using it is not  
923 accessible. Currently the form is designed to be printed out and mailed in, which poses  
924 challenges for some voters with disabilities. Updating the process to leverage current  
925 technologies could allow voters with disabilities to benefit from having access to an  
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<sup>66</sup> National Conference of State Legislatures (NCSL) Automatic Voter Registration (2021) Available at:  
<https://www.ncsl.org/research/elections-and-campaigns/automatic-voter-registration.aspx>

<sup>67</sup> Morris K, Dunphy P (2019) AVR Impact on State Voter Registration New Brennan Center Report Finds Significant Gains in  
Voter Rolls. Brennan Center for Justice, (Washington, D.C.) Available at:  
[https://www.brennancenter.org/sites/default/files/2019-08/Report\\_AVR\\_Impact\\_State\\_Voter\\_Registration.pdf](https://www.brennancenter.org/sites/default/files/2019-08/Report_AVR_Impact_State_Voter_Registration.pdf).

<sup>68</sup> The Brookings Institution (2021) Accessing the vote: A case for tax-time registration. Webcast September 28, 2021.  
Information available at: [https://www.brookings.edu/events/accessing-the-vote-a-case-for-tax-time-registration/?utm\\_campaign=Events%3A%20Governance%20Studies&utm\\_medium=email&utm\\_content=159776096&utm\\_source=hs\\_email](https://www.brookings.edu/events/accessing-the-vote-a-case-for-tax-time-registration/?utm_campaign=Events%3A%20Governance%20Studies&utm_medium=email&utm_content=159776096&utm_source=hs_email).

<sup>69</sup> Alaska Division of Elections. Permanent Fund Dividend Automatic Voter Registration. Available at:  
<https://www.elections.alaska.gov/Core/PFD AVRindex.php>.

927 accessible form that is also easy and efficient to navigate. Updating the form and the  
928 process around it using current technology could also benefit voters by improving the  
929 efficiency for transmitting, processing, and updating registration information directly with the  
930 states.

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932 In order to modernize the NMVRF, a federal agency working group should be established to  
933 look holistically at improving the NMVRF by examining the use of technology, potential  
934 changes to federal policy, and collaborative methods to work with state and local  
935 jurisdictions. Some areas this group may investigate:

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937 • Modernizing how the form can be filled out electronically by the voter to capture  
938 information relevant to each state.
  - 939 ○ For example, if the registration process is entirely online, voters would not need  
940 to print out and handle the form.
  - 941 ○ Usability studies should be conducted for the chosen methods. These studies  
942 should include stakeholder engagement to test the form with:
    - 943 ▪ Voters with different kinds of disabilities
    - 944 ▪ Different types of AT
    - 945 ▪ Different electronic versions of the form (e.g., fillable PDF, mobile version)
    - 946 ▪ Develop the form with design, usability, and accessibility best practices in  
947 mind. Examples of guidance include:
      - 948 ▪ Federal plain language guidelines<sup>70</sup>
      - 949 ▪ U.S. Web Design System (USWDS)<sup>71</sup>
      - 950 ▪ *Forms that Work: Designing Web Forms for Usability*<sup>72</sup>
      - 951 ▪ “Website Forms Usability: Top 10 Recommendations”<sup>73</sup>
      - 952 ▪ “Creating Accessible Forms: General Form Accessibility”<sup>74</sup>
- 953 • Assisting voters with navigation of the forms’ instructions. This could be done by  
954 displaying the form on the website in an efficient digital format that displays state  
955 instructions only for the state in which the voter is registering.
  - 956 ▪ This could be done to the current form but should also be considered for future  
957 versions.
- 958 • Determining electronic and automated methods for transmitting the form to the states  
959 accepting them. This should be done in an electronic format that enables states to add

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<sup>70</sup> Plain Language Action and Information Network. Federal plain language guidelines. Available at: <https://www.plainlanguage.gov/guidelines/>.

<sup>71</sup> General Services Administration (GSA). U.S. Web Design System (USWDS). Available at: <https://designsystem.digital.gov>. See

<sup>72</sup> Jarrett C, Gaffney G. Forms that work: Designing Web forms for usability. Morgan Kaufmann; 2009 Mar 2.

<sup>73</sup> Whitenon K (2016) Website Forms Usability: Top 10 Recommendations. Nielsen Norman Group. Available at: <https://www.nngroup.com/articles/web-form-design/>.

<sup>74</sup> Web Accessibility in Mind (WebAIM) (2020) Creating Accessible Forms: General Form Accessibility. Institute for Disability Research, Policy, and Practice, Utah State University. Available at: <https://webaim.org/techniques/forms/>.

960 the application to their workflow for approval. This would benefit voters with disabilities  
961 in that they would not have to print or mail the form.

- 962 • Considering an appropriate common data format for transmission and storage (e.g.,  
963 PDF, Word document, bar code, XML, etc.) depending on the method of electronic  
964 return.
- 965 • Ensuring any electronic automation and transfer are secure throughout the process.
- 966 • Making the form interoperable with states accepting electronic registration.

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968 Though implementing these recommendations could require additional resources and  
969 policy/process changes, with these improvements, the NMVRF can be an accessible option for  
970 voters with disabilities to register, especially in states that do not currently have online  
971 registration services.  
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### 973 **Increase access and improve accessibility to online voter registration services**

- 974 • Providing voters with the option to register to vote online reduces the reliance voters,  
975 especially those with disabilities, have on paper registration forms. Currently, 43 states  
976 and Washington D.C. have online voter registration.<sup>75</sup> For states that don't currently offer  
977 online registration, this may require updated technology and infrastructure to support the  
978 additional web hosting and processing of incoming data.
  - 979 ○ For those states not yet offering online registration, in addition to the access  
980 benefits for voters with disabilities, offering online registration would lower costs,  
981 allowing states to reallocate money they would typically spend on printing,  
982 mailing, and data entry/processing to other areas of the elections process.
  - 983 ○ States may want to consider offering a software application programming  
984 interface that third parties, including other state agencies, can use to create a  
985 secure, efficient connection to the voter registration system. Offering this would  
986 reduce the amount of software development needed by third parties to convert  
987 and transfer information for each individual state. This would enable third party  
988 organizations to focus more on widespread voter outreach and organize  
989 transportation for those who need it. Research into the cost and feasibility of this  
990 would be needed to ensure the return on investment is beneficial. One example  
991 of such a system is the Pennsylvania Online Voter Registration WebAPI (Web  
992 Application Programming Interface) (PA OVR WebAPI).<sup>76</sup>
    - 993 ■ The federal government could provide a similar solution for voters using  
994 the NMVRF and leverage information submitted to other federal agencies.  
995 For example, a voter who submits an application for federal student aid  
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<sup>75</sup> (see Footnote 58).

<sup>76</sup> Pennsylvania Department of State (2021) Pennsylvania's Online Voter Registration Web application Programming Interface (PA OVR WebAPI). Available at: <https://www.dos.pa.gov/VotingElections/OtherServicesEvents/Pages/PA-Online-Voter-Registration-Web-API---RFC.aspx>.



- 997 could be offered to be forwarded to the NMVRF, which could have pre-  
998 populated information based on the original application.  
999 ○ State online voter registration forms need to be updated to ensure they remain  
1000 fully accessible to voters with disabilities who employ assistive technology to fill  
1001 in their information. This includes font size, word spacing, the positioning of fields  
1002 and buttons or links, and color contrasts. A 2015 report by the American Civil  
1003 Liberties Union (ACLU) examined 20 states' online voter registration websites,  
1004 finding that only California's website is fully accessible. The report also details  
1005 common problems and examples of suggested ways to address these  
1006 problems.<sup>77</sup>  
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## 4. Voting by Mail

### 4.1. Barriers to Vote by Mail

Barriers	
•	Requiring an excuse for absentee voting creates increased burden for voters with disabilities.
•	Requesting a vote by mail ballot online or by mail both have accessibility challenges.
•	Voters with some disabilities encounter challenges returning the ballot.
•	Voters with some disabilities encounter challenges packaging and signing their ballots that may result in their ballot being rejected.
•	Accessible options for electronic blank ballot delivery, marking, and returning are limited for voters with disabilities.

1011 In 2020, 51.3% of voters with disabilities voted by mail, an increase from 23.8% in 2012 (there was  
1012 also an increase from 16.4% in 2012 to 43.9% in 2020 for voters with no disabilities). Of those  
1013 voters with disabilities in 2020, 5% reported having difficulties with voting by mail, though these  
1014 rates varied by disability type, with over 20% of voters who are blind or have low vision reporting  
1015 difficulty. Although 5% of voters with disabilities may appear to be a small number of voters, it  
1016 amounts to roughly 885,000 voters, and, for comparison, this is almost double the rate of voters  
1017 without disabilities who experience problems.<sup>78</sup>  
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<sup>77</sup> The American Civil Liberties Union (ACLU) (2015) Access Denied: Barriers to Online Voter Registration for Citizens with Disabilities. ACLU, (New York, NY) Available at: [https://www.aclu.org/sites/default/files/field\\_document/021915-aclu-voterregonline\\_0.pdf](https://www.aclu.org/sites/default/files/field_document/021915-aclu-voterregonline_0.pdf).

<sup>78</sup> (see Footnote 29).

*"I was provided an accessible ballot that I could fill out privately on my computer, but the ballot had to then be printed, signed, and an envelope filled out by hand for it to be returned to the election commission...I had to enlist the help of my son to sign the ballot and then he had to address the envelope for me..."*

- Received from Federal Register Notice 86 FR 32026

### **Requiring an excuse for absentee voting creates increased burden for voters with disabilities.**

Illness and disability are valid reasons to request a vote by mail ballot in the 16 states<sup>79</sup> that require an excuse to vote by mail; however, certifying disability can create added burden to voters with disabilities:

- Voters with disabilities may not be aware they are eligible if information regarding eligibility is not accessible.
- Voters with disabilities must spend extra time and effort to request and receive documentation when it is required.
- Methods to request and receive documents may not be accessible.
- Voters may not wish to disclose their disability on a public form.
- Voters may have significant needs for voting by mail. For example, elderly voters may not consider themselves to be disabled despite having issues with dexterity, mobility, and vision. These individuals may benefit from accessibility features but not know their options.

### **Requesting a vote by mail ballot online or by mail both have accessibility challenges.**

- Filling out forms can be difficult for voters with print disabilities, and they may need to request a new ballot if a mistake is made; receiving, filling out, and then returning the replacement ballot before the deadline may be difficult.
- In many states, voters with a disability must apply for their vote by mail ballot every election. Only 16 states permit voters with disabilities to join a permanent vote by mail list.<sup>80</sup> In some cases, the burden is placed on voters with disabilities to obtain and submit a doctor's note or other documentation to be placed on the list.
- Fourteen states have a web-based vote by mail application, and eight states and Washington D.C. have other online options for vote by mail applications.<sup>81</sup> However, these

<sup>79</sup> (see Footnote 58).

<sup>80</sup> (see Footnote 58).

<sup>81</sup> (see Footnote 58).

1047 methods may pose problems for voters with disabilities when web-based applications and  
1048 forms are not fillable or readable by AT or require a scanned signature.

- 1049 • Voters with disabilities who do not have a driver’s license or state identification may also be  
1050 unable to request their blank vote by mail ballots online.

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1052 **Voters with disabilities encounter challenges returning the ballot.**  
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1054 Even when voters with disabilities can privately and independently read and mark their ballot,  
1055 they may face challenges in returning that could prevent their vote from being counted.

- 1056 • Many voters with print disabilities<sup>82</sup> do not own printers needed for them to return vote by  
1057 mail ballots and other paper forms independently.
- 1058 • Mailing a form is difficult for some voters with disabilities, especially packaging, sealing, and  
1059 addressing an envelope.
- 1060 • Some voters with disabilities have difficulties navigating to a ballot drop box, mailbox, or  
1061 post office and may lack accessible transportation.
- 1062 • Only 13 states have laws regulating drop-boxes<sup>83</sup>, though more states used drop-boxes  
1063 during the COVID-19 pandemic in 2020. Due to differing definitions and features of drop-  
1064 boxes, drop-boxes may not meet the ADA’s accessibility requirements : drop-boxes may be  
1065 at improper heights, not close to accessible parking spaces, or have no visible signs  
1066 indicating where the box is located.
- 1067 • In some states, voters are not allowed to have someone else, such as a family member,  
1068 care provider, or other designated agent, submit the ballot on their behalf. <sup>84</sup> This may be  
1069 especially problematic for voters with disabilities who cannot leave their homes, live in a  
1070 long-term care facility, or are otherwise unable to independently return the vote by mail  
1071 ballot package on their own.

1072  
1073 **Voters with disabilities encounter challenges packaging and signing their ballots that may**  
1074 **result in their ballot being rejected.**  
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1076 Unfortunately, research suggests that voters with disabilities are more likely to have their ballots  
1077 rejected.<sup>85</sup> These rejections may occur when:

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<sup>82</sup> (see Footnote 17 for print disability definition).

<sup>83</sup> (see Footnote 58).

<sup>84</sup> (see Footnote 58).

<sup>85</sup> Baringer, A., Herron, M. C., & Smith, D. A. (2020). Voting by mail and ballot rejection: Lessons from Florida for elections in the age of the coronavirus. *Election Law Journal: Rules, Politics, and Policy*, 19(3), 289-320.

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- Instructions for creating the vote by mail package and envelope are not easy to follow, especially for voters with print disabilities; if the multiple envelopes and secrecy sleeves are not packaged correctly, the ballot could be rejected.
  - Some voters with disabilities are unable to make a consistent hand-written (or “wet”) signature due to manual dexterity or other disabilities. Without a consistent signature, the signatures made for the vote by mail packages will not match those on file with the elections office and may result in the ballot being rejected.
  - Voters who are blind or low vision may not receive instructions or support in making the signature in the correct area.
  - There may be accessibility barriers to correct signature issues. As a new election administration innovation, only 28 states currently have a process to cure a missing or mismatched signature on a mail-in ballot.<sup>86</sup> The process may be challenging for voters with disabilities to utilize before deadlines if they are required to travel to the election office or request a new alternative ballot format.

1093 **Accessible options for electronic delivery, marking, and returning are limited for voters with**

1094 **disabilities.**

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- As of November 2020, 23 states had a Remote Accessible Vote By Mail (RAVBM)<sup>87</sup> tool statewide or in some counties.<sup>88</sup>
  - RAVBM may suffer from poor design, such as unclear instructions for using RAVBM and poor navigation for AT.
  - According to data from 2019, electronic return of the ballot is only available to voters with disabilities in Utah and Louisiana (fax return); however, electronic return is currently available for Uniformed and Overseas Citizen Voting Act (UOCAVA) voters in 26 states and Washington D.C..<sup>89</sup> Some states, such as West Virginia, have run pilots for electronic return beyond fax and email.<sup>90</sup>
  - Although electronic return methods currently exist, several security challenges and concerns should be addressed when expanding the use of electronic returns to ensure these methods are secure enough to confidently use to vote.

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<sup>86</sup> (see Footnote 58).

<sup>87</sup> RAVBM refers to a vote by mail system in which voters can download and mark their vote by mail ballot from home using their own AT and then print, sign, and return the ballot in the envelope. One example is the system in use by California (see Footnote 52).

<sup>88</sup> This number comes from our analysis of states’ election websites. Note: States may have implemented RAVBM without making it public on the state elections information home page.

<sup>89</sup> National Conference of State Legislatures (NCSL) Electronic Transmission of Ballots (2021) Available at: <https://www.ncsl.org/research/elections-and-campaigns/internet-voting.aspx>.

<sup>90</sup> Office of the Secretary of State (2020) Electronic Voting an Option for State's Military & Overseas Voters, and Voters Living with Physical Disabilities. State of West Virginia. Available at: <https://sos.wv.gov/news/Pages/09-03-2020-B.aspx>.

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## 4.2. Recommendations for Voting by Mail

<b>Recommendations</b>	
<ul style="list-style-type: none"> <li>• Improve access to vote by mail.</li> <li>• Expand electronic options for requesting, marking, and returning ballots when facilitating voting by mail.</li> <li>• Increase accessibility for completing and returning ballots by minimizing physical barriers to voting by mail.</li> <li>• Change procedures for signature processing to support voters with disabilities.</li> </ul>	

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The vote by mail process can be improved for voters with disabilities by increasing access to and usability of electronic delivery of a blank ballot. Current processes can also be improved to make the process more efficient and clearer to voters with disabilities. Lastly, we identify several areas for future research using technology to vote by mail in an accessible and secure manner.

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### **Improve access to vote by mail.**

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- Allow all voters to vote by mail without an excuse. Allowing any voter to make this request may reduce the burden placed on voters with disabilities to submit documentation of their disability. This would benefit both voters with disabilities and those who may not have documentation of a disability
- Allow voters to request to vote by mail when they register. For example, states may expand use of the Federal Post Card Application<sup>91</sup> for UOCAVA voters to voters with disabilities, allowing voters with disabilities to register and request a ballot at the same time. Coupling these processes would also allow voters to update their information and preferences more easily for vote by mail.
- Allow voters to permanently request a vote by mail ballot. If voters automatically receive their ballot by mail, they do not have to continually submit paper forms or go to the election office to request a form for each election. Five states and Washington D.C. allow any voter to request to be added to a permanent list to receive a vote by mail ballot.<sup>92</sup>
- Verify voters' identities with voter registration records. Voters with disabilities would benefit from election officials verifying requests for vote by mail ballots using information

<sup>91</sup> Voter Registration and Absentee Ballot Request. Available at: <https://www.fvap.gov/uploads/FVAP/Forms/fpca2013.pdf>.

<sup>92</sup> (see Footnote 58).

1136 already in voter registration records. Currently, 17 states verify voters' requests for vote  
1137 by mail ballots with information in the voter registration record.<sup>93</sup>

- 1138 • The federal government should establish a working group to create a holistic approach  
1139 to provide information on voting by mail and facilitate applying for mail ballots. The  
1140 holistic approach should consider technical, policy, legislative and statutory constraints.  
1141

1142 **Expand electronic options for requesting and marking blank ballots when facilitating voting**  
1143 **by mail.**  
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- 1145 • Provide fully accessible RAVBM. By marking the ballot at home, voters with disabilities  
1146 may also have extra time to read and complete their ballots and use their own AT to  
1147 complete a Hypertext Markup Language (HTML) or fillable PDF form. Current guidance  
1148 exists for the design, development, and implementation of these systems.<sup>94</sup>
  - 1149 ○ Examples of states that use RAVBM include but are not limited to California<sup>95</sup>,  
1150 Ohio<sup>96</sup>, and Maryland.<sup>97</sup>
- 1151 • Allow voters to electronically request the blank vote by mail ballot. Currently 14 states  
1152 have an online portal to make this request, and an additional nine states have a system  
1153 for electronically requesting to vote by mail.<sup>98</sup>
- 1154 • Research is needed to explore how to expand options to support electronic ballot return.  
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1156 **Increase accessibility for completing and returning ballots by decreasing physical barriers**  
1157 **when voting by mail.**  
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- 1159 • Improve the ability for voters to sign the voter signature form on vote-by-mail envelopes.  
1160 Current strategies include punched holes to guide blind voters to find the space to sign  
1161 and accepting a signature anywhere on the envelope. As the processing of mail ballots

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<sup>93</sup> (see Footnote 58).

<sup>94</sup> Laskowski S, Dawkins S, Quesenbery, et. al. (2017) Principles and guidelines for remote ballot marking systems. Available at: <https://civicdesign.org/wp-content/uploads/2015/09/Principles-for-remote-ballot-marking-systems-17-0331.pdf>.

<sup>95</sup> (see Footnote 52).

<sup>96</sup> Frank LaRose Ohio Secretary of State. Accessible Absentee Voting in Ohio. Available at: [https://www.ohiosos.gov/elections/voters/voters-with-disabilities/Votingfaqs/?\\_cf\\_chl\\_jschl\\_tk=\\_\\_pmd\\_QHZizeq4vxd\\_BuZ7pQSzOwXy0j3jg63af4hbmiztPu0-1632163483-0-gqNtZGzNAICjcnBszQIR](https://www.ohiosos.gov/elections/voters/voters-with-disabilities/Votingfaqs/?_cf_chl_jschl_tk=__pmd_QHZizeq4vxd_BuZ7pQSzOwXy0j3jg63af4hbmiztPu0-1632163483-0-gqNtZGzNAICjcnBszQIR).

<sup>97</sup> Maryland The State Board of Elections. Access by Voters with Disabilities. Available at: <https://elections.maryland.gov/voting/accessibility.html>.

<sup>98</sup> (see Footnote 58).

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becomes more automated, future approaches should focus on reducing need for manual review of accessible vote-by-mail ballots-

- Provide clear instructions in accessible formats to help voters with disabilities sign and package their ballots. Instructions should clearly educate voters on how to package and return their ballots. Several best practices exist, such as providing the voters with a checklist for the process, including instructions on the return envelope, and providing explicit instructions on where and how to sign the package.<sup>99,100</sup>
- Provide pre-addressed and pre-paid envelopes to voters. Providing pre-addressed envelopes would benefit voters with print disabilities<sup>101</sup> in more quickly and easily preparing the envelope to be mailed. This is needed for both traditional vote by mail and RAVBM. Pre-paid envelopes would reduce burden on voters. Currently 17 states have legislation related to paying for postage.<sup>102</sup>
- Consistent with federal law,<sup>103</sup> allow voters with disabilities to designate who may return their ballots and provide guidance for how to return ballots. When a voter is unable to physically return their vote by mail ballot, allow them to designate someone to submit their ballot for them. In some states this may include a family member, but this may be expanded to caregivers in general, especially for those in long-term care facilities. There is need for guidance for determining when and how this process works, as well as who may be allowed to play this role. States may consider extending guidance from topics described in a 2020 report from Centers for Medicare & Medicaid Services (CMS) and putting out their own guidance.<sup>104</sup>
- Support tabulation of RAVBM vote by mail ballots. Voting machines should support tabulation of common paper sizes for at-home printers while maintaining privacy and secrecy. This could be accomplished by using technology to facilitate scanning or automate remaking the ballot. By doing so, election administration could better implement RAVBM, eliminating the need to remake ballots manually.
- Increase access to and accessibility of ballot drop-boxes for returning vote by mail ballots. Ballot drop-boxes can be an additional option to return ballots for voters with disabilities. Drop-boxes should meet the ADA's accessibility requirements, be in an accessible location and have features voters with different disabilities can use.

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<sup>99</sup> Center for Civic Design. (2021) *Vol. 104 Designing vote at home envelopes and materials*. Center for Civic Design (Highbridge, NJ.) Available at: <https://civicdesign.org/fieldguides/104-designing-vote-at-home-envelopes/>.

<sup>100</sup> Summers K, Quesenbery W, & Pointer A (2016) Making Voting by Mail Usable, Accessible and Inclusive. *Advances in Design for Inclusion*, Di Bucchianico G (Springer Nature, Basingstoke, UK), pp.53-64.

<sup>101</sup> (see Footnote 17 for print disability definition).

<sup>102</sup> (see Footnote 58).

<sup>103</sup> Americans With Disabilities Act of 1990 (ADA), 42 U.S.C. § 12132; 28 C.F.R. § 35.130.

<sup>104</sup> Department of Health and Human Services (HHS) (2020) Compliance with Residents' Rights Requirement related to Nursing Home Residents' Right to Vote. HHS (Washington, D.C.) Available at: <https://www.cms.gov/files/document/gso-21-02-nh.pdf>.

## Change procedures for signature processing to support voters with disabilities

- Increase transparency and education about signature matching processes in each state. Voters should be informed how their signatures are used to match with voter registration records to understand the process.
- Provide an accessible signature cure process. This method must be efficient for voters with disabilities and allow them to meet the deadlines for submitting vote by mail ballots. An example of an accessible cure process is Colorado’s TXT2Cure process.<sup>105</sup> When a signature is rejected, the voter is notified and can electronically sign and upload identification using their phones. Although this would primarily benefit voters with disabilities who have difficulties making signatures, it would also benefit voters at large by reducing the number of uncounted ballots if voters had the opportunity to cure their ballots.
- Create best practices and standards for the signature verification process. Guidelines for signature verification support election officials in more accurately matching signatures and allow election officials to better understand considerations when matching signatures of voters with disabilities. Several best practices already exist that could be incorporated into formal state or national standards, such as having a tiered system to check signatures.<sup>106</sup> In this tiered process, the signature is first checked by an election worker or automated system, and can be escalated to election office staff and/or supervisors for adjudication. Examples of states with signature verification resources include Colorado and Oregon.<sup>107, 108</sup>

## 5. Voter Technology

### 5.1. Voting Technology Barriers

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<sup>105</sup> Colorado Secretary of State (2020) *Colorado Secretary of State Jena Griswold Announces TXT2Cure Program*. State of Colorado Department of State (Denver, CO.) Available at: <https://www.sos.state.co.us/pubs/newsRoom/pressReleases/2020/PR20201007TXT2Cure.html>.

<sup>106</sup> Bloomgarden A, Gupta A, Jensen G, Levine Z, Middleton C, & Sikora K (2020) Behind the Scenes of Mail Voting: The Rules and Procedures for Signature Verification in the 2020 General Election. Stanford-MIT Healthy Elections Project. Available at: [https://healthyelections.org/sites/default/files/2020-10/Signature\\_Verification\\_0.pdf](https://healthyelections.org/sites/default/files/2020-10/Signature_Verification_0.pdf).

<sup>107</sup> State of Colorado Department of State (2018) Signature Verification Guide Version 2.1. Available at: <https://www.sos.state.co.us/pubs/elections/docs/SignatureVerificationGuide.pdf>.

<sup>108</sup> Secretary of State: Elections Division (2020) Vote by Mail Procedures Manual. Available at: [https://sos.oregon.gov/elections/documents/vbm\\_manual.pdf](https://sos.oregon.gov/elections/documents/vbm_manual.pdf).



## Barriers

- Providing only one accessible voting machine per polling place creates barriers to independently and privately casting a ballot.
- Accessible voting machines, especially older machines, are challenging to learn and use.
- Ballots may be poorly designed for the technology and complicated to understand.
- Voters with disabilities may be unable to independently verify their vote before it is scanned and cast in some circumstances.
- Voters with disabilities encounter additional burdens when returning their ballot.

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1221 While the rate of difficulty operating voting machines is relatively low (1%), this rate has not  
1222 significantly decreased since 2012, and this rate is higher for voters with Intellectual,  
1223 developmental, learning, and neurocognitive disorders (1.5%) and voters who are blind or low  
1224 vision (4.1%).<sup>109</sup> When voters with disabilities are unable to use accessible voting machines, their  
1225 privacy and independence for casting their ballots in person is threatened: a recent study found  
1226 nearly 1 in 5 blind voters were not able to cast their ballot privately and independently when casting  
1227 their ballot on a purportedly accessible voting machine in 2020.<sup>110</sup>  
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*“...I was finally ready to start my ballot. That is when I realized the large screen used for low vision users was facing the entire room, including the incoming line of voters. unacceptable...Then they realized the printer was not setup, no paper, and again was in plain view of everyone.... The total time from then I was handed my code to use on the [redacted voting machine] to when my ballot was finally scanned was around 2 hours...”*

- Received from Federal Register Notice 86 FR 32026

## 1229 1230 **Providing only one accessible voting machine per polling place creates barriers to** 1231 **independently and privately casting a ballot.** 1232

- Voters with disabilities are unable to vote if the single accessible machine is not set up or not working.

<sup>109</sup> (see Footnote 29).

<sup>110</sup> National Federation of the Blind (2021) *The Blind Voter Experience: A Comparison of the 2008, 2012, 2014, 2016, 2018, And 2020 Elections*. National Federation of the Blind (Baltimore, MD.)

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- In some cases, the machine’s screen, and voters’ selections, are on display for the entire polling place due to lack of privacy features or incorrect placement (e.g., privacy curtains, angle of machine, etc.).
- Because the paper size for a BMD marked ballot often differs from hand-marked paper, these ballots may be able to be identified if only a few voters use the single machine, compromising ballot secrecy.

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**Accessible voting machines, especially older machines, are challenging to learn and use.**

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- Although VVSG 2.0 includes detailed, updated requirements for accessibility, no machines are currently certified to VVSG 2.0 or to the 2015 VVSG 1.1 (The VVSG 2.0 was approved in February 2021. The Election Assistance Commission has not yet certified any voting systems to VVSG 2.0).
  - Nearly a third of registered voters have used systems no longer for sale by the vendors that produce them; these machines are less likely to be compatible with updated VVSG guidelines and modern assistive technology.<sup>111</sup>

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- Some instructions for using accessible voting machines’ features are difficult to follow.
- Some audio features are not adequately adjustable or poor in quality.
- Mechanical difficulties with printing, jamming, and functionality of buttons and headsets can occur.

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**Ballots may be poorly designed for the technology and complicated to understand.**

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- Voters with Intellectual, developmental, learning, and neurocognitive disabilities and those using AT especially struggle to read their ballots and understand how to mark their ballots when these ballot problems are present:
  - Presenting more than one contest per screen, creating information overload.
  - Lack of organization of information and instructions.
  - Lack of plain language to support voters in understanding what to select and how to select.

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**Voters with disabilities may be unable to independently verify their vote before it is scanned and cast in some circumstances.**

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- When AT is unable to read the selections on paper, voters with disabilities are unable to verify their ballots. This may be because of the design of the printed ballot that does not consider the requirements for AT to read printed information accurately.

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<sup>111</sup> Based on our analysis data from: <https://verifiedvoting.org/verifier/#mode/search/year/2020>.

- If poll workers remake the ballot to be counted (to transfer it to a format the ballot scanners can read), voters with disabilities are unable to verify the vote that was ultimately cast.

**Voters with disabilities encounter additional burdens when returning their ballot.**

- Voters with manual dexterity disabilities and who are blind or low vision have indicated difficulty with independently placing the ballot in a privacy sleeve and feeding the ballot into the ballot scanner.
- Some voters with disabilities may have difficulty independently traversing the polling place to go to where the ballot is cast.

## **5.2. Recommendations for Voting Technology**

### **Recommendations**

- Improve accessibility for verifying and casting ballots.
- Increase support for voters with disabilities to use accessibility features.

Existing voting technology addresses many barriers voters with disabilities face in casting their ballots in person on election day. Future research can also better support voters with disabilities in securely casting their votes on accessible systems.

### **Improve accessibility for verifying and casting ballots.**

- Encourage the use of all-in-one voting stations. All-in-one voting technology that can support reading, marking, verifying, and scanning/returning the ballot benefits voters with manual dexterity disabilities. The Los Angeles County Voting Solutions for All People (VSAP)<sup>112</sup> is an example of this process, where the ballot printed by the BMD is automatically cast into a ballot box at the voting station after review and verification, without requiring voters to handle the paper.
- Ensure BMD ballots can be read by scanners and tabulators and do not need to be remade, the process by which election officials must copy cast votes onto a paper ballot. Ensure that the paper output of an accessible voting machine can be directly tabulated and counted. This preserves the voters' rights and may increase efficiency on election day in counting the votes.
- Develop accessible and secure methods for voters with disabilities to mark and verify their ballots. Technology should continue to be developed and used to support voters with disabilities in independently marking and verifying the ballot they cast. For example,

<sup>112</sup> Voting Solutions for All People (VSAP). Available at: <https://vsap.lavote.net/design-concepts-2/>.

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optical character recognition (OCR) technology can continue to be developed to work with AT. Verification should also be secure. Research and development of secure and accessible verification methods of ballots should be done for paper-based (e.g., BMDs) and paperless (e.g., end-to-end verifiable voting systems) systems.

- Implement procedures to encourage voters to verify their ballot. To ensure accessibility in marking ballots as well as in securely casting ballots, BMDs should be software independent. Software independence means that, “A voting system is software-independent if an (undetected) change or error in its software cannot cause an undetectable change or error in an election outcome.”<sup>113</sup> Verification by voters is one way to achieve this. Desired procedures include emphasizing the importance of verification to voters and having clear instructions for how to verify and identify where mistakes are made.<sup>114</sup> While these methods are important for and would benefit voters with and without disabilities, special attention must be paid to ensuring these processes work for and are clear to voters with disabilities.

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**Increase support for voters with disabilities to use accessibility features.**

- Ensure BMD ballots can be read by AT. Ensure that the printed ballot can be accurately and understandably read to the voter through optical character recognition of the printed ballot. This process can read back the ballot in multiple channels, including audio or enhanced visual displays.
- All systems should be certified to VVSG 2.0 requirements . VVSG 2.0 includes accessibility standards in Principles 5-8, including, but not limited to, customization of preferences, being easy to read, in plain language, and supportive of the voter in correctly marking, navigating, and submitting their selections.

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<sup>113</sup> Rivest RL (2008) On the notion of ‘software independence’ in voting systems. *Phil. Trans. R. Soc.* 366: 3759-3767. Doi: 10.1098/rsta.2008.0149.

<sup>114</sup> Bernhard M, McDonald A, Meng H, Hwa J, Bajaj N, Chang K, Halderman JA. Can Voters Detect Malicious Manipulation of Ballot Marking Devices?. In 2020 IEEE Symposium on Security and Privacy (SP) 2020 May 18 (pp. 679-694). IEEE.

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## 6. Polling Locations

### 6.1. Polling Location Barriers

#### Barriers

- Voters with disabilities have barriers when getting to/from polling locations or navigating the venue.
- While inside the polling location, voters with disabilities face an additional set of barriers that make the act of casting their ballot difficult.
- For jurisdictions that offer it, curbside voting reduces barriers for many voters with disabilities, but there are still aspects that need to be addressed.

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When individuals with disabilities go in person to cast their vote, whether they vote early or on election day, they often face challenges that make the process difficult for them. Unfortunately, multiple surveys of polling places for elections have found accessibility issues and low compliance with ADA requirements.<sup>115,116</sup> Poll workers with a low level of familiarity with accessible equipment or having an inadequate number of workers may compound these issues.

*“Even in 2021, my assigned precinct is inaccessible for me as a manual wheelchair user...”*

- Received from Federal Register Notice 86 FR 32026

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#### **Voters with disabilities have barriers when getting to/from polling locations or navigating the venue.**

- Inadequate signage directing voters with disabilities to the accessible path to, from, and within the polling location.
  - Some signage does not meet ADA requirements.
- Accessible entrances or elevators are closed or blocked off.
- No accessible parking or insufficient accessible parking.
- Difficulty getting to and from polling locations due to lack of nearby public transportation.

<sup>115</sup> Williamson L, Pamela Cataldo C, Wright B (2018) *Toward a More Representative Electorate: The Progress and Potential of Voter Registration through Public Assistance Agencies*. Demos. Available at: <https://www.demos.org/research/toward-more-representative-electorate>.

<sup>116</sup> National Disability Rights Network (NDRN) (2020) *Blocking the Ballot: Ending Misuse of the ADA to Close Polling Places*. NDRN (Washington, D.C.) Available at: <https://www.ndrn.org/resource/blocking-the-ballot-box/>.

- 1356 • Inaccessible pathways to the voting place.
- 1357     ○ No ramps or ramps are too steep.
- 1358     ○ Uneven or steep routes, routes blocked by curbs/stairs or other barriers make
- 1359         navigating to the polling place difficult or impossible.
- 1360 • Doorways are too narrow for wheelchairs.
- 1361 • Long lines or waiting times are particularly challenging for many voters with disabilities,
- 1362     especially those who have difficulties standing.
- 1363     ○ The temperature or weather also affects the ability to wait in line for many, especially
- 1364         if the line extends outside.
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1366 **While inside the polling location, voters with disabilities face an additional set of barriers that**  
 1367 **make the act of casting their ballot difficult:**

- 1368 • Check-in requirements are cumbersome for many voters with disabilities, especially those
- 1369     who do not have a driver's license.
- 1370 • Limited space, inaccessible routes, or poor organization inside the polling location makes it
- 1371     difficult for many voters with disabilities as they go through the process of checking in,
- 1372     voting, and casting their ballot.
- 1373 • At least one accessible voting machine is required by federal law<sup>117</sup>, but there is often only
- 1374     one machine, and it is often segregated from the rest of the voting booths and also results in
- 1375     limited availability.
- 1376 • Accessible voting machines are not working or not set up.
- 1377 • Accessible voting machines are not set up correctly or not configured to ensure privacy from
- 1378     passersby.
- 1379     ○ Machines are placed too closely together.
- 1380     ○ Privacy screens are incorrectly set up.
- 1381     ○ For voters who use wheelchairs, other voters may see the ballot over their shoulders.
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1384 **For jurisdictions that offer it as an option, curbside voting may reduce barriers for voters with**  
 1385 **disabilities, but there are still aspects that need to be addressed:**

- 1386 • Curbside voting is offered in less than half of the country.<sup>118</sup>
- 1387     ○ Some laws prohibit curbside voting from being used or offered at all.
- 1388 • There is limited or no signage directing voters to a specified curbside voting area.
- 1389 • Some locations that offer curbside voting require the voter to call ahead of time to ensure
- 1390     any equipment needed for curbside voting is set up and available.
- 1391 • Some jurisdictions provide a telephone number as the only method for alerting poll workers
- 1392     that a voter is requesting to use the curbside option. If a voter either does not have a mobile
- 1393     phone or has difficulty using a mobile phone, requesting assistance could be challenging.
- 1394 • A voter may have a hard time reading instructions for where and how to call the poll worker
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<sup>117</sup> (see Footnote 9).

<sup>118</sup> (see Footnote 58).

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- The requirements for accessibility of curbside voting are not always followed completely.
- The availability of curbside voting should be in addition to, rather than instead of, the general accessibility requirements of the polling place, and voters with disabilities should have the choice of which option best suits their needs.
- The ballots brought curbside are most often paper ballots which are not accessible to persons with print disabilities.

1403 **6.2. Recommendations for Polling Locations**

**Recommendations**

- Make getting to polling locations easier
- Ensure the location and equipment is adequate and available
- Offer curbside voting
- Continue to collect feedback and conduct research on accessibility
- Ensure there are enough, up-to-date, and functioning Accessible Voting Machines

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While progress is continually made to ensure that everyone is able to access the polling location and have the ability to cast their ballots privately and independently, there are many measures election officials can take to further reduce the barriers faced by voters with disabilities. Election offices should provide educational materials on their websites or other means to advertise available offerings.

**Make getting to polling locations easier**

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- The federal government and state/local governments should consider ensuring that employers leave enough time for voting on election day or providing additional flexibilities for voting. Some voters with disabilities may need more time or support from a caregiver, family, or friend to get to and from a polling location than those without disabilities. They may also need more time to check-in, mark, and cast their ballot. If employers permitted flexible leave options, and jurisdictions provided flexible days and hours for voting, voters with disabilities would be able to show up and cast their ballot without the stress or loss of pay from having to take off work for an extended period of time; and some voters may not be able to take off at all during the hours of operation of their assigned polling location.
- Strive to have polling locations or vote centers placed near public transportation. If this cannot be done, consider having a free bus that can transport voters between the polling location and a public transportation hub or bus station. For voters with disabilities who do not have their own transportation or are unable to operate a vehicle, this would greatly increase their ability to vote independently.

- 1430 ○ Another option that should be considered is a mobile vote center van which
- 1431 brings voting to the voters' locations.
- 1432 • Ensure the polling place is accessible per ADA requirements.
- 1433 ○ Regularly audit locations prior to elections and determine what temporary
- 1434 measures are needed to ensure the location remains accessible or select an
- 1435 alternative accessible location.
- 1436 ○ Consider using government (county and municipal) buildings as polling places,
- 1437 as they are more likely to be ADA-compliant.
- 1438 ○ Consider establishing accessible voting centers where any voter in the
- 1439 jurisdiction can vote.
- 1440 ○ Develop and deploy methods to evaluate the accessibility of polling places on
- 1441 election days. Allow voters to document and report issues they encountered or
- 1442 witnessed so they can be addressed quickly.
  - 1443 ▪ For example, the State of Wisconsin has such a tool, which they use to
  - 1444 inform areas of focus for future elections.
- 1445 • Ensure that polling places are accessible, including paths from the parking lot to the
- 1446 building and inside the building to the voting machines, as required by the ADA.<sup>119</sup>
- 1447 • Ensure that there is adequate signage to direct voters throughout the polling location.
- 1448 This includes:
  - 1449 ○ ADA required signage, for parking spaces and to direct voters to the accessible
  - 1450 entrance(s) or voting area.

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1452 **Ensure the location and equipment is adequate and available**

- 1453 • Create and use a comprehensive checklist that poll workers must run through every day.
- 1454 This will ensure that all equipment, including an adequate number of accessible voting
- 1455 machines, is properly set up and functioning before they open their doors. Voters with
- 1456 disabilities may need more time to go through the voting process than other voters and
- 1457 having all equipment set up in advance reduces the amount of time they need to remain
- 1458 at the polling location.
- 1459 ○ Additional items to consider when setting up accessible voting machines are:
  - 1460 ▪ If all voters are not using the same accessible machine, ensure that the
  - 1461 accessible voting machines are not segregated from other machines.
  - 1462 ▪ The accessible voting machines are set up so any voter who uses those
  - 1463 machines can do so privately. This includes proper spacing of privacy
  - 1464 screens, table height, and appropriate distance between pathways and
  - 1465 neighboring voting machines.
  - 1466 ▪ Polling locations should provide chairs along the line for those who are
  - 1467 unable to stand for extended periods of time.

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1470 **Offer curbside voting as an option**

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<sup>119</sup> (see Footnotes 5, 6, and 7).



1472 Curbside voting is a great option that should be offered at all polling locations. It reduces some  
1473 barriers faced by voters with disabilities. However, less than half of the country currently offers  
1474 it.  
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1476 When considering offering this, ensure:

- 1477 • Guidelines for accessible curbside voting are developed for use by election officials that  
1478 also comply with ADA accessibility requirements. To ensure curbside voting is  
1479 accessible, election officials need detailed guidelines they can use to implement  
1480 curbside voting in their polling place. This may include procedures for poll worker  
1481 staffing, set-up and signage, and protecting voters' independence and privacy while  
1482 casting their ballot curbside.
- 1483 • Voting technology used for curbside polling is portable and accessible. Voting  
1484 technology must be portable for an election official to carry and to fit into a car for a voter  
1485 to use. This technology should also include privacy for the voter to cast their vote.
- 1486 • There is adequate signage and instructions to direct voters to a curbside voting area
  - 1487 ○ Many voters who have curbside voting available do not know it exists. This  
1488 signage is essential to direct voters to the right locations. Additionally, there  
1489 should be more public outreach advertising the curbside voting options ahead of  
1490 elections, so that those with concerns or questions can have them answered  
1491 ahead of time.
  - 1492 ○ When at the curbside voting area, adequate signage should be posted that  
1493 provides instructions on what to do next. If a poll worker cannot be dedicated to  
1494 curbside voting, this should include options to alert a poll worker that they have  
1495 arrived at the curbside voting area or if they need assistance.
- 1496 • Review requirements for curbside voting per the Americans with Disabilities Act of  
1497 1990.<sup>120</sup>  
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#### 1499 **Continue to collect feedback and conduct research on accessibility**

- 1500 • Collect feedback from voters with disabilities on an ongoing basis to predict future voting  
1501 patterns and needs to better support them, for example, what challenges they had using  
1502 equipment and how long it took them to cast their ballot.
  - 1503 ○ It could be used as supporting data to justify changing the polling location or  
1504 determine more effective temporary and permanent solutions.
  - 1505 ○ Research and investigate how elections officials can better distribute poll workers  
1506 to reduce staffing-related barriers based on collected data.  
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#### 1509 **Ensure there are enough, up-to-date, and functioning voting machines that are accessible**

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<sup>120</sup> See Footnote 22.

- Current law<sup>121</sup> states that there must be at least one accessible voting machine per location; however, this is not adequate in some cases. More research is needed to determine a method to predict the minimum proper number of machines.
  - Accessible voting machines should not be limited to certain voters. All voters should be informed of the availability of accessible machines and the voters themselves should decide whether to use it. It is not always evident to poll workers that a voter has a disability and may want to use an accessible machine.
  - Investigate the feasibility of replacing all voting machines with ones that adhere to VVSG 2.0.

## 7. Poll Worker Training

### 7.1. Poll Worker Training Barriers

#### Barriers

- Training may not provide poll workers with sufficient knowledge of the needs of voters with disabilities.
- Poll worker training may not adequately prepare poll workers to set up and use the accessible machine.
- Without training and policies for using accessible voting machines, poll workers can unintentionally serve as gatekeepers, not offering voters the accessible voting machine.

When poll workers are not sufficiently trained, they become a barrier to voters with disabilities in using the accessible machine to cast their ballots.

*“As a person with low vision, I have a long wait every time I go to vote. The primary issue is the poll workers don't know how to turn the voice on in the voting machine. Sometimes it takes two hours for them to figure out how to turn on the voice.... I have also been asked if someone could help me vote. I deserve to vote independently and privately, as is my right.”*

- Received from Federal Register Notice 86 FR 32026

**Training may not provide poll workers with sufficient knowledge of the needs of voters with disabilities.**

Without adequate training, poll workers are unfamiliar or have challenges with:

<sup>121</sup> (see Footnote 9).

- 1541 • Recognizing the needs and accommodations of people with disabilities and how to support  
1542 their access to vote. This is especially true of voters with disabilities that cannot be identified  
1543 using visual cues (e.g., wheelchair, cane, etc.).
- 1544 • Communicating with voters with disabilities who utilize AT or ASL. Some closed-captioning  
1545 services do not translate well to these communication channels.
- 1546 • Poll workers may have biases about people with disabilities regarding access to  
1547 accommodations, support needed to vote, or engagement in the voting process.
- 1548 • Understanding the legal rights of voters with disabilities to vote and have assistance when  
1549 voting (e.g., using AT, bringing a caregiver, friend, or family member to assist them in  
1550 voting). In some cases, not understanding these rights may perpetuate damaging  
1551 misperceptions that people with disabilities cannot vote.

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1553 **Poll worker training may not adequately prepare poll workers to set up and use accessible**  
1554 **machines.**

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1556 Voters with disabilities are delayed in using accessible voting machines or are unable to use  
1557 them at all when poll workers are not trained to operate accessible voting machines. Specific  
1558 problems include:

- 1559 • Poll workers may have insufficient knowledge of setting up and using accessible voting  
1560 machines.<sup>122,123,124</sup> In some cases, the accessible voting machines are not turned on or  
1561 working when voters with disabilities arrive at the polling place.<sup>125, 126</sup>
- 1562 • Poll workers may have challenges using accessible voting machines' features; problems  
1563 may be exacerbated when poll workers have low computer/technology literacy and may  
1564 become flustered under the stress of election day.

1565  
1566 **Without training and policies for using accessible voting machines, poll workers can**

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<sup>122</sup> The Information Technology and Innovation Foundation Accessible Voting Technology Initiative (2013) *Understanding Voting Experiences of People with Disabilities*. Available at: <https://elections.itif.org/reports/AVTI-005-Sanford-2013.pdf>.

<sup>123</sup> Research Alliance for Accessible Voting (2014) *Training Poll Workers on Disability, Accessibility, and Accommodations*. Paraquad (St. Louis, MO). Available at: [https://www.eac.gov/sites/default/files/event\\_document/files/RAAV\\_Poll\\_Worker\\_Training\\_Project\\_Final\\_Report\\_%28May\\_2014%29.pdf](https://www.eac.gov/sites/default/files/event_document/files/RAAV_Poll_Worker_Training_Project_Final_Report_%28May_2014%29.pdf).

<sup>124</sup> (see Footnote 110).

<sup>125</sup> (see Footnote 110).

<sup>126</sup> Pederson, E (2019) *2018 Voter Experience Survey Results*. SABE Govoter Project 2019. Self Advocates Becoming Empowered (Washington, D.C.) Available at: <https://www.sabeusa.org/wp-content/uploads/2019/09/Final-2018-SABE-GoVoter-Expereince-Report.pdf>.

1567 **unintentionally serve as gatekeepers, not offering voters the accessible voting machine.**

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1569 Anyone with or without a disability should be able to use the accessible voting machines if  
1570 requested. Poll workers often have misperceptions about who can use the machines, believing  
1571 the machines can only be used by people with a visually identifiable disability. This results in  
1572 poll workers:

- 1573 • Reserving the machines only for those who have a visually identifiable disability.
- 1574 • Requiring voters with disabilities to ask the poll worker for permission to use them.
- 1575 • Requiring voters to prove they have a disability, or a particular disability, to use the  
1576 machines.

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1578 Voters with disabilities who may benefit from using the accessible voting machines may be  
1579 blocked from them, forcing voters with disabilities to sacrifice their privacy and/or independence  
1580 to cast their ballots, and in some cases, have difficulties marking their ballot as they had  
1581 intended.

## 1582 1583 **7.2. Recommendations for Poll Worker Training**

### **Recommendations**

- Provide training and tools for turning on, setting up, and troubleshooting accessible voting machines.
- Provide resources to poll workers on election day to remind them of important instructions.
- Require information about accessibility in poll worker training to increase awareness and knowledge of the needs of voters with disabilities.

1584  
1585  
1586 Poll worker training can be improved to increase accessibility in the polling place and ensure  
1587 voters with disabilities can vote privately and independently. Ultimately, changes to poll worker  
1588 training are needed to ensure poll workers are prepared to help voters with disabilities.

### **Provide training and tools for turning on, setting up, and troubleshooting accessible voting machines.**

- If all machines are not accessible (we recommend that they are all accessible), it is important to teach poll workers to integrate accessible machines fully into the polling place. When the accessible machines are integrated into the polling process, setting up and using the machines will be a part of the process and not a separate step perceived as optional.

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- Train poll workers to allow any voter to use the accessible machines. Poll workers can avoid becoming gatekeepers to the accessible machines if they make voters aware of the availability of the accessible machines and how to access them.

1602 **Provide resources to poll workers on election day to remind them of important instructions.**

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- Create job aids and checklists for poll workers for all aspects of election day. This can include checklists for setting up the polling place and turning on the accessible voting machines. These aids should include instructions for troubleshooting as well as setup and use. Job aids can also be used as a reference for using equipment or interacting with voters with specific needs.
  - Job aids, checklists, and guides should follow usability best practices and be tested by poll workers. Aides should include pictures and instructions written clearly and in plain language. For example, Contra Costa County’s award-winning training “A Simple (Accessible) Path for All” includes an Accessibility Kit written in plain language and including checklists, maps, and step-by-step guides for fixing obstacles and barriers.<sup>127</sup>

1615 **Require information about accessibility in poll worker training to increase awareness and**

1616 **knowledge of the needs of voters with disabilities.**

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- Ensure poll workers understand the rights of voters with disabilities, including common accommodations voters with disabilities may have or use and effective communication<sup>128</sup> and interaction practices to reduce biases. Also ensure that poll workers know what to do if a voter with a disability needs an accommodation that was not specifically covered in training.
  - Integrate real-world scenarios into the training process. Use real-life scenarios and examples to train poll workers to support voters with a disability in the polling place (e.g., handling voter identification, using audio features on an accessible voting machine, etc.).
  - Ensure accommodations and accessibility are considered in the poll worker training procedures, process, and materials. Poll worker training itself must be accessible to people with disabilities. This may include making materials and training accessible and providing accommodations in discussions with individual poll workers. One helpful practice may be to allow split shifts and part-day hours for poll workers, practices already in place in 16 states.<sup>129</sup> Further research and outreach to the disability community may be needed to determine specific accommodations to facilitate voters with disabilities serving as poll workers.

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<sup>127</sup> U.S. Election Assistance Commission (2018) A Simple (Accessible) Path for All. EAC (Washington, D.C.) Available at: <https://www.eac.gov/election-officials/contra-costa-county-ca-2018-clearinghouse-award-winner>.

<sup>128</sup> (see Footnote 24).

<sup>129</sup> (see Footnote 58).

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## APPENDIX I: ACRONYMS

*Acronyms are not available in this Draft but will be provided in the final version of the Report.*

## APPENDIX II: DEFINITIONS

### What is an “accessible voting system”?

“Accessible voting system” and related voting system terminology is used throughout this report. This summary clarifies their origins and provides an overview of the definitions and features of an accessible voting system.

**Background.** Section 301 of the Help America Vote Act of 2002 (HAVA) describes the capabilities of the voting system and specifically states that *“The voting system shall— (A) be accessible for individuals with disabilities, including nonvisual accessibility for the blind and visually impaired, in a manner that provides the same opportunity for access and participation (including privacy and independence) as for other voters; (B) satisfy the requirement of subparagraph (A) through the use of at least one direct recording electronic voting system or other voting system equipped for individuals with disabilities at each polling place; ...”* HAVA also directs the Election Assistance Commission to adopt voluntary voting system guidelines (called the VVSG) developed by their Technical Guidelines Development Committee (TGDC) with technical support from the National Institute of Standards and Technology (NIST). These guidelines include *“assistive technologies for individuals with disabilities (including blindness).”*

The EAC certifies voting systems if they meet the technical requirements of the VVSG. VVSG 2.0, adopted February 10, 2021, is the current version, but most voting systems are currently certified to VVSG 1.0. It is important to note that VVSG is not a legal mandate. It is guidance and is voluntary for states who may choose to require new voting systems to be certified to the VVSG (or create state standards based on it).

VVSG 2.0 reflects the latest in both industry and technology best practices for accessibility and includes detailed guidance for electronic voting systems to enable voters with disabilities to vote privately and independently, ensuring their ballots are marked, verified, and cast as intended.

**Definitions and features of an accessible voting system.** The definitions and features build on Section 301 of the 2002 Help America Vote Act: an **accessible voting system** is one that is accessible for individuals with disabilities, including nonvisual accessibility for the blind and visually impaired, in a manner that provides the same opportunity for access and participation (including privacy and independence) as for other voters. HAVA provides that this accessibility requirement can be met in federal elections through use of a direct recording voting system or other voting system equipped for individuals with disabilities at each polling place. The accessibility of voting systems is further governed by the Americans with Disabilities Act.

An accessible voting system typically contains a number of features designed to ensure accessibility for voters with a range of disabilities to allow them to independently mark, verify, and cast their ballots. The most up-to-date features are described in some detail in VVSG 2.0 adopted by the U.S. Election Assistance Commission under HAVA in 2021. Typically, the accessible voting machine for in-person voting is an electronic **ballot marking device** (BMD) or **ballot marker**. This is a device that: permits contest options to be selected and reviewed on an electronic interface, produces a human-readable marked paper ballot, and does not make any other lasting record of the voter's selections. It is accessible throughout the process of marking, verifying, and casting the paper ballot.

1691 The VVSG 2.0 guidance ensures that any BMD can be used by voters with disabilities without  
1692 assistance since the accessibility features are intrinsic to the device and include visual, enhanced  
1693 visual, and audio formats and interactions modes that include touch and support for limited dexterity. If  
1694 a voter requires assistive technology in the form of a headset or switch, these are available with the  
1695 BMD, or the voter may use their own personal assistive technology. Voters may need assistance to  
1696 plug into the standard audio jack or assistive technology jack. The guidelines specify that all methods of  
1697 interaction by voters have the same functionality as the visual format and touch mode not just for voting  
1698 but also for voter verification, handling, and casting of the paper ballot.  
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1700 A voter may choose to hand mark their paper ballot, if that is an option and they have the ability to do  
1701 so. In many in-person voting systems, the voter casts their ballot (from the BMD or hand marked)  
1702 directly into a **ballot scanner**. The ballot scanner is a voting system that tabulates votes marked in  
1703 contest option positions or contained with a barcode on the surface of a paper ballot. There are  
1704 accessibility features described in the VVSG 2.0, such as large font and audio cues, that apply to the  
1705 scanner display because it is a voter-facing electronic device that is part of the voting system.  
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1707 For voting by mail, new **remote accessible vote-by-mail systems** are available in some states. These  
1708 tools allow voters to use an application on their personal computer or mobile device with their own  
1709 assistive technology or preferences to mark and review their selections. Like a BMD, the system then  
1710 prints a human-readable ballot to be verified and returned like any other vote-by-mail ballot.  
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1713 *Other definitions are not available in this Draft but will be provided in the final version of the Report.*  
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1716 APPENDIX III: REFERENCES

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1719 *References are not available in this Draft but will be provided in the final version of the Report.*

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1721 APPENDIX IV: ADDITIONAL RESOURCES

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1724 *Additional Resources are not available in this Draft but will be provided in the final version of the Report.*

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1726 **APPENDIX V: THE ASSIGNMENT AND APPROACH**

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1728 **EXECUTIVE ORDER ON 14019 PROMOTING ACCESS TO VOTING**

1729 Among its objectives, the EO aims to “to protect and promote the exercise of the right to vote,  
1730 eliminate discrimination and other barriers to voting, and expand access to voter registration and  
1731 accurate election information.”

1732 The EO specifies in: “Sec. 7. Ensuring Equal Access for Voters with Disabilities. Within 270 days of the date of  
1733 this order, the National Institute of Standards and Technology (NIST) within the Department of Commerce  
1734 shall evaluate the steps needed to ensure that the online Federal Voter Registration Form is accessible to  
1735 people with disabilities. During that period, NIST, in consultation with the Department of Justice, the Election  
1736 Assistance Commission, and other agencies, as appropriate, shall also analyze barriers to private and  
1737 independent voting for people with disabilities, including access to voter registration, voting technology, voting  
1738 by mail, polling locations, and poll worker training. By the end of the 270-day period, NIST shall publish  
1739 recommendations regarding both the Federal Voter Registration Form and the other barriers it has identified.”  
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1741 **THE PROCESS NIST USED TO DEVELOP THIS PLAN**

1742 NIST reached out widely to solicit input on barriers to private and independent voting for people with  
1743 disabilities. That outreach and consultation included:

- 1744
- 1745 • Publication of a Request for Information in the Federal Register that resulted in 171 relevant  
1746 responses. See Appendix VI for the Text of the Request for Information.
  - 1747 • Contacts and discussions with members of other Federal agencies including but not limited to, the  
1748 Department of Justice (DOJ), Election Assistance Commission (EAC), General Services  
1749 Administration (GSA), Office of Management and Budget (OMB) and the US Access Board.
  - 1750 • Contacts and discussions with members of non-governmental organizations (NGOs) including but  
1751 not limited to, the American Civil Liberties Union (ACLU), National Council on Independent Living,  
1752 National Disability Rights Network, National Federation of the Blind, and Paralyzed Veterans of  
1753 America.
  - 1754 • Briefing with Federal agencies on comments received from RFI.
  - 1755 • Review and comment from Federal agencies’ review on a draft version.
  - 1756 • Review and comment from the public on the draft version.
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1761 “Executive Order 14019-Promoting Access to Voting.” <https://www.govinfo.gov/content/pkg/DCPD-202100209/pdf/DCPD-202100209.pdf>

## APPENDIX VI: REQUEST FOR INFORMATION

Billing Code: 3510-13-P

### DEPARTMENT OF COMMERCE

**National Institute of Standards and Technology Docket Number:** [210608-0123]

#### Promoting Access to Voting

**AGENCY:** National Institute of Standards and Technology, U.S. Department of Commerce.

**ACTION:** Notice; Request for Information (RFI)

**SUMMARY:** Based on the requirements of E.O. 14019, Promoting Access to Voting, the National Institute of Standards and Technology (NIST) is seeking information about barriers to private and independent voting for people with disabilities. NIST, in consultation with the Department of Justice, the Election Assistance Commission, and other agencies, as appropriate, will analyze barriers, including access to voter registration, voting technology, voting by mail, polling locations, and poll worker training. Responses to this Request for Information (RFI) will inform NIST's development of recommendations.

**DATES:** Comments must be received by 5:00 p.m. Eastern time on July 16, 2021.

**ADDRESSES:** Comments may be submitted by any of the following methods:

Electronic submission: Submit electronic public comments via the Federal e-Rulemaking Portal.

1. Go to [www.regulations.gov](http://www.regulations.gov) and enter NIST-2021-0003 in the search field,
2. Click the "Comment Now!" icon, complete the required fields, and
3. Enter or attach your comments.

Email: Comments in electronic form may also be sent to [pva-eo@list.nist.gov](mailto:pva-eo@list.nist.gov) in any of the following formats: HTML; ASCII; Word; RTF; or PDF. Please submit comments only and include your name, organization's name (if any), and cite "Promoting Access to Voting" in all correspondence.

**FOR FURTHER INFORMATION CONTACT:** For questions about this RFI contact: Kevin Mangold, NIST, at (301) 975-5628, or email [Kevin.Mangold@nist.gov](mailto:Kevin.Mangold@nist.gov). Please direct media inquiries to NIST's Office of Public Affairs at (301) 975-2762. Users of telecommunication devices for the deaf, or a text telephone, may call the Federal Relay Service, toll free at 1-800-877-8339.

**SUPPLEMENTARY INFORMATION:** As stated in Executive Order 14019, Promoting Access to Voting, the right to vote is the foundation of American democracy. Under section 7 of Executive Order 14019, (Ensuring Equal Access for Voters with Disabilities), NIST is directed to evaluate the steps needed to ensure that the online Federal Voter Registration Form is accessible to people with disabilities. Exec. Order No. 14019, Promoting Access to Voting, 86 FR 13623 (Mar. 7, 2021).

Alicia Chambers, NIST Executive Secretariat.

