



Case Study

AIGA Design for Democracy develops best practices for ballot and polling place voter information material design on behalf of the U.S. Election Assistance Commission (September 2005–July 2007)

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AIGA Design for Democracy

Established in 1998, AIGA Design for Democracy applies design tools and thinking to increase civic participation by making interactions between the U.S. government and its citizens more understandable, efficient and trustworthy. Independent, pragmatic and committed to the public good, Design for Democracy collaborates with researchers, designers and policy-makers in service of public sector clients on a nonprofit basis and AIGA's goal of "demonstrating the value of design by doing valuable things."

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Background

An informed and active citizenry is at the core of participatory democracy. In turn, citizens' participation in a democracy depends upon their trust in government. Trust in general will increase the motivation to participate; trust in the electoral process will increase the motivation to participate through voting.

– Richard Grefé, AIGA executive director

In November 2000, approximately 1.5 million votes cast for U.S. president were not recorded due to difficulties using voting equipment. In that same election, the design of the “butterfly” punchcard ballot of Palm Beach County, Florida, misled many voters to select the wrong candidate. This particular example received national and international attention due to the role that the state of Florida, and perhaps the design of this particular ballot, played in influencing the outcome of the 2000 presidential election. Yet, ballot and, more broadly, *election* design was then and remains in 2008 an area of national vulnerability for the U.S. democratic process.



Palm Beach County, Florida, ballot with controversial butterfly layout, November 2000

Response to the 2000 U.S. Presidential Election

The U.S. government responded to the events of November 2000 by establishing the Help America Vote Act (HAVA) of 2002. Among other things, HAVA 2002 specifies reform requirements for ballot design and publicly posted voting information, and forms a new government agency charged with providing nationwide election guidance and HAVA funds oversight: the U.S. Election Assistance Commission (EAC), established in 2003. After further ballot design scrutiny in the wake of the 2004 presidential election, the EAC identified ballot and voter information design reform as HAVA priorities.

Meanwhile, established in 1998 to advocate for the value of design with legislators and to demonstrate the value of design toward the improvement of citizen-government interactions, AIGA Design for Democracy¹ quickly turned its attention to election design following the 2000 election. The AIGA initiative began work with both Illinois' Cook County (Chicago) and the state of Oregon, collaborating with election officials to apply design practices to voter registration forms, ballots, polling place signage, vote-by-mail packets and other materials for elections in 2002 and beyond.² In 2005, Design for Democracy partnered with the National Institute of Standards and Technology (NIST), to generate national ballot design principles informed by recent election design experience, as well as technical guidelines and multi-state ballot reviews.³ Design for Democracy's growing local and national election design experience, in combination with its independence, nonprofit status, relationships with government officials and other associations, and reputation for thought leadership and excellence in research and design, rendered it the perfect partner for the EAC.

Design for Democracy and the U.S. Election Assistance Commission define election design best practices

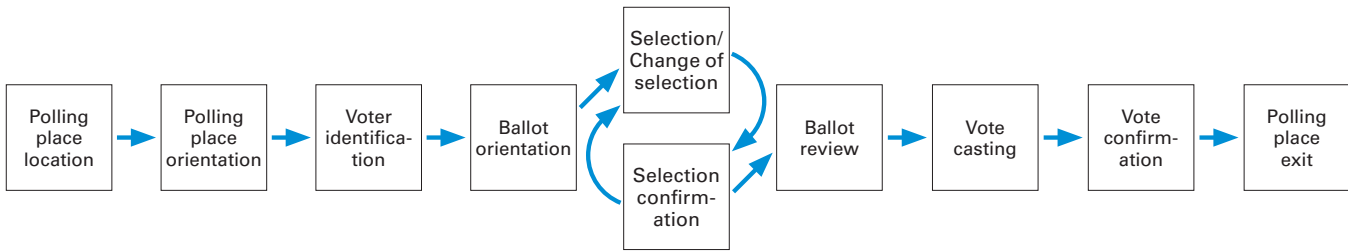
Election officials, the Election Assistance Commission and the Design for Democracy team share the same objective... developing a means for achieving a voting experience that attracts citizens to vote; makes the choice of candidates and issues relatively easy; and ensures that voters cast their votes with confidence that they have made the right choice and that it has been registered properly.

—“Effective Designs for the Administration of Federal Elections,”
AIGA Design for Democracy for EAC, 2007

In September 2005, the EAC awarded Design for Democracy a research contract to identify a series of voluntary best practice guidelines and samples for ballots and voter information materials. This project represented a major research investment for the EAC. Goals for the project were to:

- Make voting more trustworthy, efficient, convenient, practical and gratifying;
- Establish a visual language, like that of road signs, that provides a uniform, vendor-independent vocabulary for the local production of voting materials;
- Expand the body of knowledge and library of best practices shared among election officials and designers serving citizens; and
- Offer pragmatic recommendations, grounded in the realities of diverse polling environments, diverse citizenship, legislative imperatives and challenging production environments.

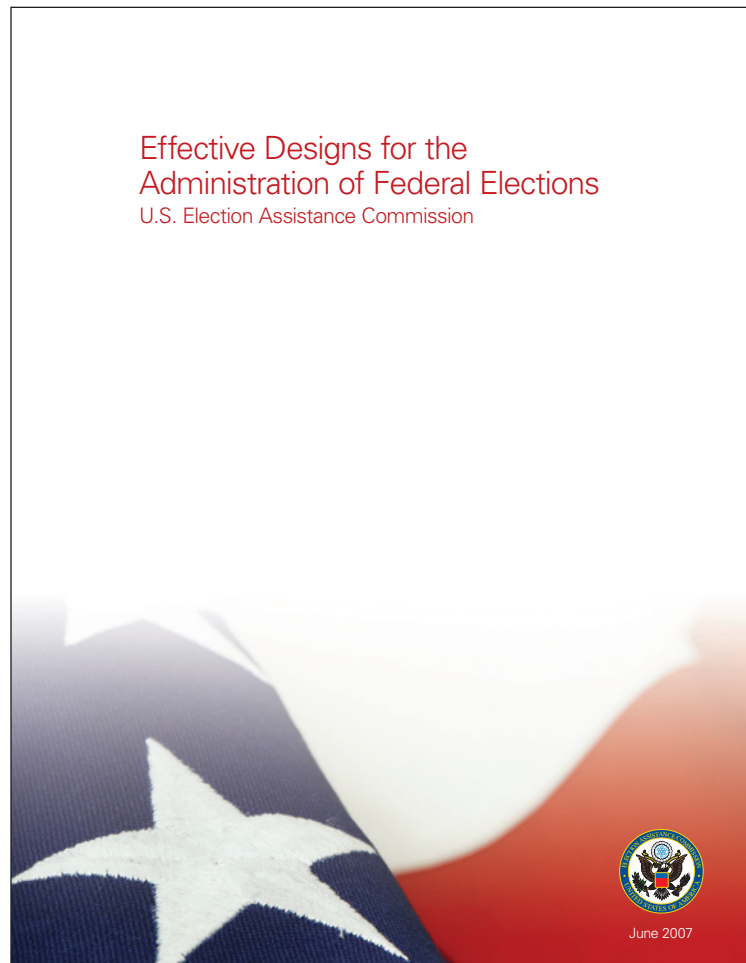
In accordance with this last goal, the project focused on attainable, near-term next steps for local jurisdictions, rather than blue-sky election design reform, and selected the most common⁴ and likely⁵ voting equipment for study: optical scan and direct recording electronic (DRE). Study was also largely limited to voters interacting with equipment via traditional inputs, as alternative modes of interaction, e.g., via audio or blow straw, tend to be very manufacturer specific. Voting materials studied were limited to those encountered at the polling place on Election Day: from polling place identification signage through vote reception.



This experience map identifies the steps a voter typically takes at a polling place, independent of voting medium

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In December 2005, Design for Democracy, with the support of its project advisory board,⁶ embarked on an almost two-year, iterative, user-centered design process resulting in the EAC’s “Effective Designs for the Administration of Federal Elections” report, accepted by public meeting in July 2007 and formally published in November 2007.



U.S. Election Assistance Commission 2007 report, “Effective Designs for the Administration of Federal Elections”

Election design landscape

U.S. election design is complex terrain: from national considerations to local challenges and requirements—elections are the province of states, not federal government—to the diverse voting citizenship. This section reviews the context that frames and informs the EAC and Design for Democracy’s election design recommendations.

National voting legislation and resources

The following national voting legislation, previously existing guidelines and centers of expertise informed and/or provided guiding requirements for Design for Democracy's solutions.

- **Help America Vote Act (HAVA) 2002** [sections 241(b)(2) and 302(b)] requires ballot reform and places specific requirements on polling places regarding the public posting of information such as voting rights and sample ballots.
- **2005 Voluntary Voting System Guidelines (VVSG)** asserts "Usability and Accessibility Requirements" (section 3) as well as technical requirements. These guidelines are created by NIST on behalf of the EAC, and are respected by the leading providers of election systems in the U.S. The project team also received briefings on then unpublished 2007 VVSG updates.
- **Other relevant NIST guidelines** include "2005 Ballot Design Guidance" (created by Design for Democracy for NIST), voting equipment testing standards and the simple language reports of Redish & Associates.
- **The National Institute for Literacy** and the low-literacy experts at the **Queens Borough Library** in New York were other valuable language resources.
- **The Voting Rights Act of 1965** guarantees non-English speakers, among others, the right to vote.
- **The Americans with Disabilities Act (ADA)** and other ADA standards documents provide accessibility guidelines.
- **International Federation of Election Systems (IFES) ballot library** offers a collection of international ballots, many of which address the needs of low-literacy populations.
- **The National Commission on Federal Election Reform's 2001 report**, "To Assure Pride and Confidence in the Electoral Process," heavily informed HAVA 2002.

- **The Caltech/MIT Voting Technology Project** provides ongoing research and thought leadership regarding election reform.
- **Election Data Services** and **electiononline.org** provide quantitative national election data and factual information.
- ***Design for Democracy: Ballot and Election Design***, written by Marcia Lausen and published jointly by AIGA and the University of Chicago Press, presents Design for Democracy's foundational work in Chicago and Oregon, and advocates for the inclusion of design in the election production process nationwide.

While national guidelines are certainly formative, local legislation and production processes dominate election proceedings. Local election officials must face two separate, though intertwined, challenges when producing elections: complex production targets (ballots) and production processes not well equipped to manage ballot complexities.

Local production targets

Elections are governed by the states. Almost all states have given the authority for administering the elections to local governments. As a result, there are not 50 election divisions, but more than 3,000 election administrators maintaining voter registration systems, choosing equipment, formatting ballots, setting up polling places, handling absentee ballots and conducting counts, audits and recounts.

— Caltech/MIT Voting Technology Project, 2001⁷

Polling places throughout the United States, November 2006



1701 S. 10th Street, Philadelphia, Pennsylvania



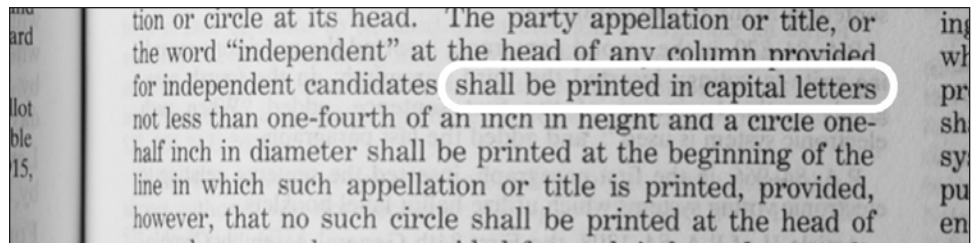
A store front on Gough Street, in San Francisco, California



A community center in West Fork, Arkansas

Makeshift polling places throughout the U.S. are diverse—in culture, physical space, level of privacy afforded to ballot casting and level of volunteer poll worker expertise. This lack of uniformity certainly presents challenges for the localization of standardized polling place material designs. But the challenges of local ballot design may be even more complex to navigate.

Local statutes and regulations often provide design specifications, for instance, requiring that certain classes of information appear in all capital text or that referenda appear in italics (both of these are design directives that compromise ballot readability). In other cases, local law provides instructions governing ballot name randomization (which is an important, though controversial, topic requiring informed governance) or limits the length of referenda text⁸ (also potentially beneficial and controversial). Local law may also assert language requirements, in some instances governing not only the selection of languages in which voting materials are offered, but also the layout in which multiple translations are to be presented. Counties using paper-based ballots requiring three or more languages—and requiring that languages be intermixed on a single ballot—have ballots that are necessarily complex.⁹ This challenge reaches an extreme level in parts of California that require seven or more languages.¹⁰



Former Illinois State Election Code typical of election law dictating ballot type such as the use of all capital letters (per Illinois House Bill No. 1914 signed in September of 2001, use of lowercase letters is now permitted)

Local production environments

The complex workings of election administration are burdened with inherited, often antiquated, processes and systems of production that make change difficult, even unwelcome. Budgets are small and time pressures severe. Most ballot design, if it can be called that, happens where officials, lawyers, typesetters and printers intersect in a mad rush to “get it done on time.”¹¹

— *Design for Democracy: Ballot and Election Design*,
Marcia Lausen, 2007

The production environment in which these complex election materials are planned and developed presents its own challenges. Local election officials, often operating under compressed timeframes and with limited control over factors such as vendor selection and service agreements, are faced with pressure to deliver elections that are low in cost, accurate and quick to be counted, when in fact these three objectives compete in a classic trade-off triangle. During pilot testing in Nebraska, the team observed that “counties competed with one another for vendor resources to accomplish identical goals.”¹² For ballot layouts, election officials often depend heavily on their voting equipment vendors, who, while asked to comply with local regulations and the *voluntary* guidelines of the VVSG, are beholden to private interests and use proprietary software systems, which in rare cases support best practices in information design with ease. And officials under pressure to manage costs may try to do so “by packing long ballots onto single pages, even if they have to use small type face, oversized paper stock and virtually no instructions.”¹³ Even those officials with the best of intentions with respect to design may suffer from lack of access to design expertise.

And local ballots are inherently complex for reasons beyond multiple language requirements and name-order randomization: because U.S. citizens vote on national, state and local topics on a single ballot, in a given state there may be ballot permutations in the thousands. Additionally, not all states restrict referenda length or edit legal text in accordance with simple language guidelines. These factors combine to ensure a challenging production target: lengthy ballots of many variations. Finally, local regulations governing content submission deadlines imply production timeframes that may be inadequate for enabling the delivery of quality translations and the inclusion of necessary design process participants.

SHALL STATE TAXES BE INCREASED \$175 MILLION ANNUALLY THROUGH ADDITIONAL TOBACCO TAXES IMPOSED FOR HEALTH RELATED PURPOSES, AND, IN CONNECTION THEREWITH, AMENDING THE COLORADO CONSTITUTION TO INCREASE STATEWIDE TAXES ON THE SALE OF CIGARETTES BY WHOLESALERS OF THREE AND TWO-TENTHS CENTS PER CIGARETTE AND ON THE SALE, USE, CONSUMPTION, HANDLING, OR DISTRIBUTION OF OTHER TOBACCO PRODUCTS BY DISTRIBUTORS AT THE RATE OF TWENTY PERCENT OF THE MANUFACTURER'S LIST PRICE; INCREASING SUCH TOBACCO TAXES EFFECTIVE JANUARY 1, 2005; REQUIRING ANNUAL APPROPRIATIONS OF SPECIFIED PERCENTAGES OF THE

A ballot referendum printed in all capital letters

For instance, “The election official responsible for the infamous November 2000 Palm Beach County ballot thought she was making the names of candidates easier to read by increasing the size of the type, a change that led to [the] confusing butterfly layout.”¹⁴

These production factors, in combination with inherent ballot complexities, do not conspire to create an environment for the easy introduction of voter-centered design principles. Yet dedicated election officials and local designers have made headway and will continue to bring about reform.

Voters

[Many participating voters] and election officials preferred familiar ballots and voter information materials, even when familiar materials were recognized as inferior.¹⁵

– “Effective Designs for the Administration of Federal Elections,”
AIGA Design for Democracy for EAC, 2007

Voters in action throughout the United States, November 2006



At the Valley Vista School, in Petaluma, California



At the Boulevard Mall,
in Las Vegas, Nevada



At a community center
in Boulder, Colorado

One hundred million ballots were cast in the U.S. presidential election in 2000 by approximately half the number of eligible voters. These voters are diverse, not only in primary languages spoken and physical abilities, but in reading level (third-grade level is the target for election materials suggested by literacy experts), prior voting experience and awareness and understanding of candidates and issues. Many overcome personal obstacles to arrive at their polling places on election dates, despite a widespread feeling of mistrust that their votes will count and with low expectations of privacy.

While voters are a heterogeneous population, certain trends can be detected. For instance, voters, like many election officials, generally share a resistance to change in election processes.¹⁶ Newer voters in particular are often embarrassed to ask for help, and non-native English speakers may be resistant to acknowledge that they wish to vote in any other language. All voters may easily miss a change in voting instructions from contest to contest, and the option of “straight-party voting... [is met with confusion] even for experienced, engaged and educated voters.”¹⁷ Despite these and other challenges, many voters look forward to the community experience that they find unique at their polling place—or value the convenience and lack of time pressure associated with voting-by-mail—and take pride in their citizenship and participation.

Solution

The benefit of these guidelines for the election official is that they draw on professional information-design experience, research, testing and evaluation to provide examples of approaches that are likely to be most successful. To this extent they complement and support the challenges election officials face.¹⁸

— “Effective Designs for the Administration of Federal Elections,”
AIGA Design for Democracy for EAC, 2007

Design for Democracy’s final report on behalf of the EAC includes detailed discussion of research methods, observations and findings, recommendations on design best practices, planning tools and recommendations and adaptable design samples that are functional for the voter, support current content requirements and are within the realm of current vendor production.

Approach and Methods

Design only fulfills its true potential when it solves problems defined by the needs of real people. Nowhere is the success of human-centered design—in improving clarity and ease of choice—more quantifiable than in the election process.

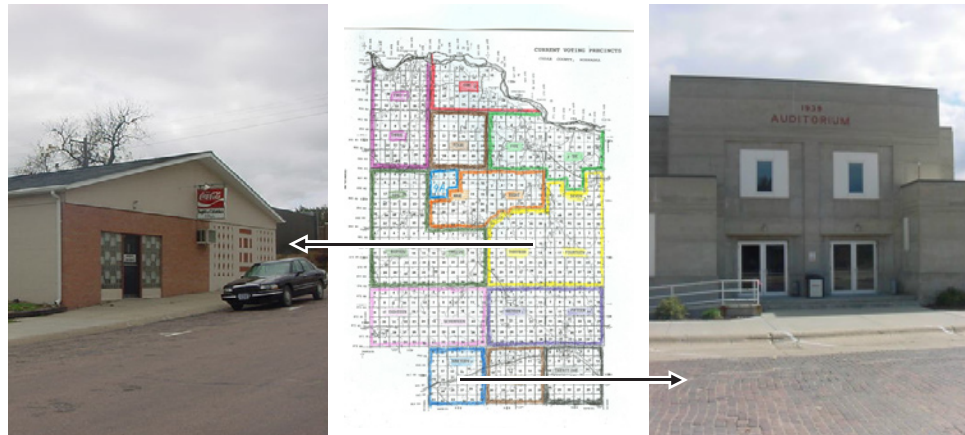
— Richard Grefé, AIGA executive director

Design for Democracy employed an iterative design process in which prototypes of voter information materials, optical scan ballots, full-face DRE ballots and rolling DRE ballots were developed, evaluated, refined and reevaluated, with the goal of delivering rigorously informed and pragmatic best practice recommendations. Original prototypes were based on Design for Democracy’s prior work in Illinois and Oregon and utilized generic sample language provided by NIST.¹⁹ Prototypes were compliant with relevant national legislation and guidelines, informed by existing best practice research, generalized in accordance with an inspection of sample ballots and local regulations from throughout the U.S. and infused with the lessons of international ballots (especially around the support of low-literacy audiences). Many versions of prototypes were developed between major iterations to enable isolated study of color use, iconography, graphics, layout, content organization, simultaneous presentation of multiple languages, accommodation of character sets from multiple languages and many other information design factors related to the display of on-ballot voting instructions, referenda and all common types of voting contests.

Primary research activities designed to evaluate these prototypes were conducted between May 2006 and January 2007, in California, Maryland, Minnesota, Nebraska, New Jersey, New Mexico and New York, in urban and rural locations. These activities included:

- Primary election observation in two counties and four polling places in rural and urban New Jersey; general election observation in two counties in rural and urban Nebraska, from preproduction to close of polls (in association with the pilot study);
- Field interviews with election officials (in their work environments when possible); informal interviews with poll workers, election staff and voters at primary and general elections;
- Fifty-four usability evaluations with voters in seven states, revealing voters' in-context thoughts and behavior during task-based interaction with ballot and information material prototypes;
- Sample ballot and voter information materials language translation studies (languages included Arabic, Chinese and Vietnamese, which possess character sets most likely to challenge layouts based originally on English language);
- Alternate language studies exploring usability and readability needs for single- and dual-language (e.g., English–Spanish, English–Chinese) prototypes;
- Numerous prototype reviews with experts and advisers; and
- Pilot testing of a) optical scan ballot and voter information prototypes featuring real content, in an actual election (November 2006 General Election), with more than 7,000 voters from two Nebraska counties; and b) the *process* of adapting guidelines to local content and regulations via a three-month collaboration with the regularly assigned election officials and vendors, constrained by real production timeframes, budgets²⁰ and vendor contracts.

Sites of redesigned ballot pilot testing in November 2006



Rural polling place KC Hall, in Hartington, Nebraska, would potentially serve 415 voters

Map of Cedar County Nebraska voting precincts in 2006

The Auditorium, in Randolph, Nebraska, would potentially serve 952 voters

Research participants included:

- More than 60 voters over the age of 21 and of varied education levels, occupations, incomes, ethnicities and genders (many more voters were informally involved through Election Day and pilot studies; special interest voting populations were represented by key experts);
- More than 20 election officials responsible for local, state and national election execution, representing populations diverse in culture, language, population density and income;
- More than 30 subject matter experts from government, academia and advocacy groups, representing a range of voter interests, and with relevant knowledge of simple language, literacy, learning disabilities, language translation, usability, accessibility and election production;
- Poll workers, printers and translators through Election Day and pilot studies;
- General public through drafts made available for comment; and

- One major election equipment and technology vendor, Elections Systems and Software (ES&S) through the pilot study. (The four largest domestic manufacturers of commonly used election equipment, including ES&S, were each invited to participate in prototype evaluation. Due to difficulties engaging these participants directly, outside of the pilot study, and due to the proprietary classification of election technologies, the team relied heavily on experts and ballot samples to understand technical constraints and possibilities.²¹)

This research program resulted in findings and recommendations for election materials as well as election material production processes. Design recommendations are manifested in both best practice guidance and design samples and specifications.

Findings and recommendations: design best practices

Design for Democracy and the EAC determined that it was important to identify election design best practices that both inform their own actionable samples and are applicable to other starting points. A summary of best practices is offered here.²²

Language, content and structure

- Use clear, concise language (simple language) for all content.
- Processes should be clear. Voters should always know where they are in a process and be able to easily view and change selections made.
- Ideally, use one language per printed ballot or information resource. If multiple languages are required on a single material, display no more than two languages.

Text use and size

- Use left-aligned, upper- and lowercase sans serif type (avoid ALLCAPS and centered alignment), set at a minimum of 12 points (25 points for rolling DRE), in a minimal number of fonts.
- For 12-point text size, set printed content with 2 points of line spacing (leading).

Color, icons and graphics

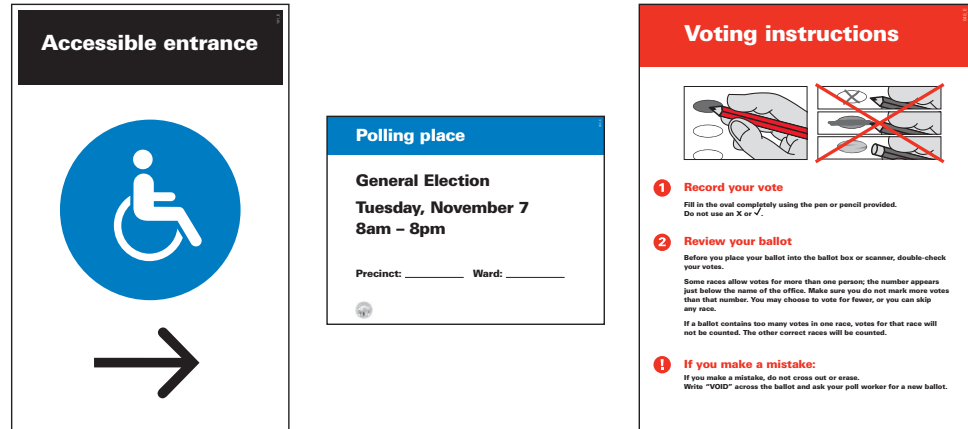
- Use color functionally. On optical scan ballots, limit color usage to two colors, using the second color exclusively for instructions; on rolling DRE ballots, the strategic application of color may effectively differentiate levels of information and cue voter interactions. Color must not be the sole means of communicating information or making distinctions.
- Accurate instructional illustrations help voters (especially less literate voters) understand requirements, processes and options. Instructional photo images are not encouraged, as they are subject to poor reproduction and they do not isolate the important information as well as graphics can.
- Use informational icons to draw attention to unique or important areas of the ballot or to improve the voter's ability to scan dense information. Political party icons are not encouraged, as literacy experts and design professionals believe they simply confuse many voters.

Findings and recommendations: design samples and component specifications

Design for Democracy and the EAC also felt it critical to illustrate best practices for each type of voting material and to anticipate and show common variations that will be required of each example. The components of these samples and variations are broken down and specified, establishing elements of a design system that may be applied beyond the samples themselves. This same sample set is available in editable form to be applied to local content in accordance with local laws and voting equipment constraints. Samples are described here by election material type.²³

Polling place voter information material samples that meet and exceed HAVA requirements are offered in one and two languages. The collection features layouts for wall-postings, tabletop information and binder pages, and many samples that can be produced on a desktop printer. Materials include:

- Polling place identification including poll worker name tags;
- Wayfinding information including directions to accessible entrances and where to turn in paper ballots; and
- Voting information and instructions including sample ballot and voters bill of rights.

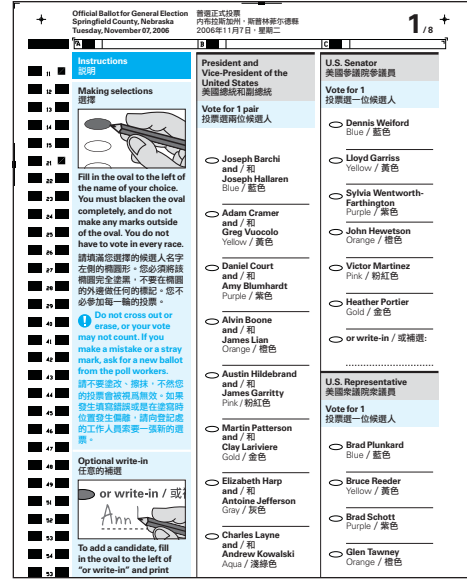
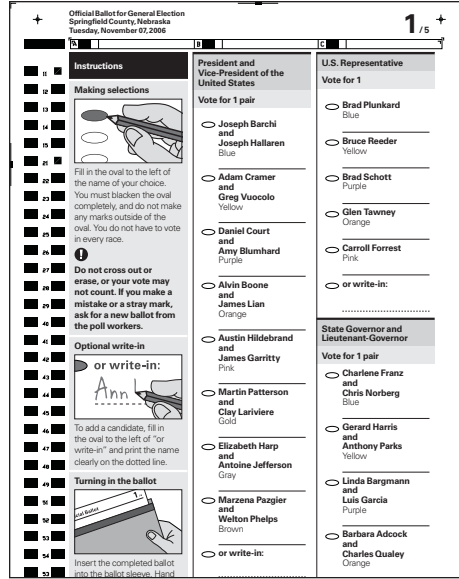


Accessible entrance wayfinding sign, polling place identification sign and voting instructions designed to match ballot type

Optical scan ballot samples are offered in one and two languages and articulate design systems for the following components (these specifications are applicable to other paper ballot formats, such as absentee, emergency and primary election ballots):

- Election information (e.g., jurisdiction, general election, date)
- Ballot instructions
- Ballot navigation, including page numbers and reminders to vote on the other side or go on to the next page
- Questions, including contests, retentions and ballot measures

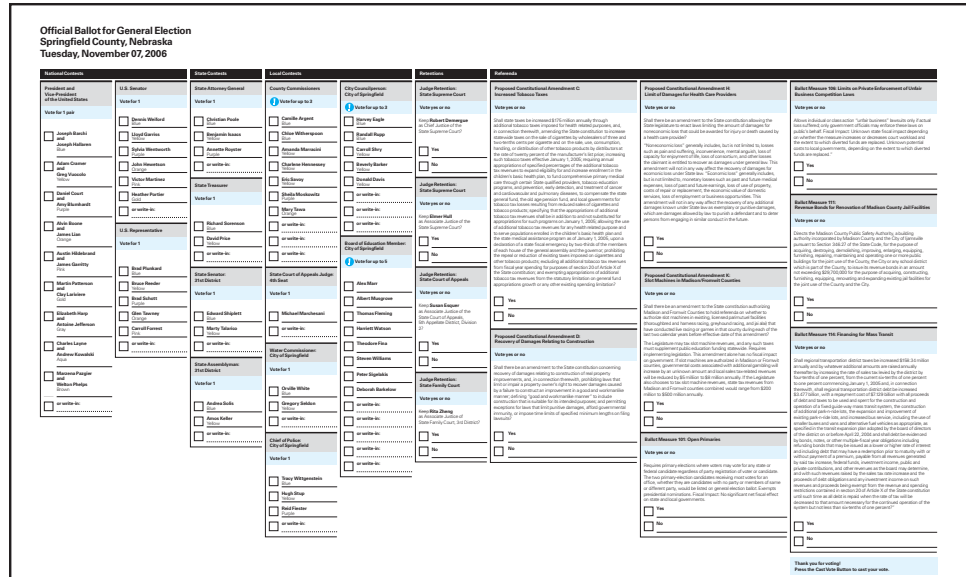
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Optical scan ballot samples in black-and-white and two-color/two-language varieties

Full-face DRE ballot samples articulate design systems for:

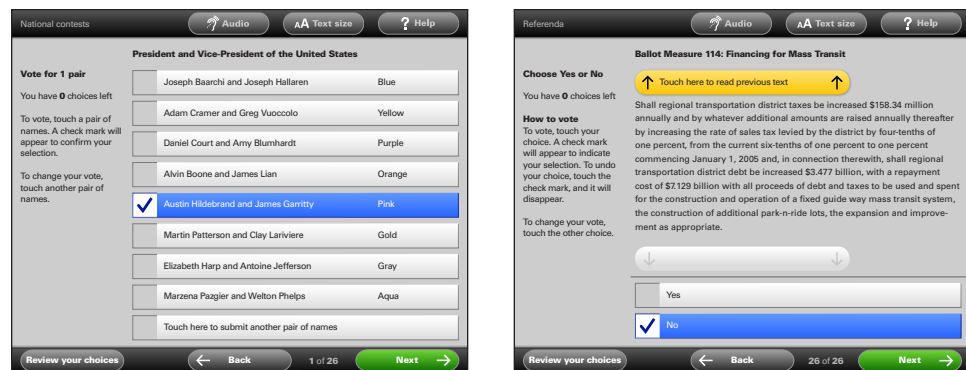
- Election information (e.g., jurisdiction, general election, date)
- Ballot instructions
- Ballot navigation or highlighting of each casting step
- Questions, including contests, retentions and ballot measures



Full-face DRE ballot sample

Rolling DRE ballot information architecture and screen samples articulate design for key tasks and features in the voter experience:

- Language selection
- Voting
- Persistent review/edit access prior to vote casting
- Casting the ballot
- Clear, simple instructions
- Completion indicators
- Under-voting notifications
- Easy to access help, instructions and screen settings



Rolling DRE (touchscreen) sample ballot screens showing candidate and referendum selections

Findings and recommendations: design process and contributors

Without an adequate planning and development process, including the appropriate subject matter experts, it may be difficult to make headway in applying these design best practices and samples toward ballot reform in particular. Therefore, Design for Democracy and the EAC were compelled to offer recommendations regarding design process and contributors as well as election design artifacts. These recommendations are summarized here.²⁴

- **Develop relationships with and understand the objectives of all production stakeholders** in advance of the election production cycle. Key stakeholders may include ballot manufacturers, printers, writers, designers and legislators.
- **Advocate for revisions to existing or create new election design work plans** to include the appropriate contributors, production steps and realistic timelines. Be sure to consider that voting does not start and end on Election Day with just ballots and informational materials, but rather is comprised of many voter touch points and modes of interaction. Voter education and poll worker training materials, for instance, may be impacted by decisions made about polling place materials.²⁵
- **Recruit the following election design contributors** to augment existing election production teams: simple-language experts; information designers experienced in the organization and presentation of complex information; interaction designers, for electronic systems; usability experts; human translators; and cultural experts. Given the complexity and stakes of election design, it will be most effective for local jurisdictions to join forces with experienced contributors who are well versed in advocating for user (voter) needs while understanding administrative and technical constraints.

Findings and recommendations: incremental change

Improvements to voter information materials offer fast, tangible evidence of progress for election officials. Generally, there are fewer legislative constraints on voter information materials than ballots.... [Ballot design] best practices should include realistic and incremental steps to support larger changes over time.²⁶

– “Effective Designs for the Administration of Federal Elections,”
AIGA Design for Democracy for EAC, 2007

Nebraska pilot examples, including the original, Design for Democracy’s recommendation and the result (recommendations were only partially integrated due to legal, equipment-based and budgetary constraints)

1. Cedar County, Nebraska, May 2006 primary election ballot. Designed by local election officials and equipment manufacturer, ES&S

2. Cedar County, Nebraska, November 2006 general election recommended ballot. Designed by AIGA Design for Democracy in cooperation with local election officials

3. Cedar County, Nebraska, November 2006 general election actual ballot. Based on recommended design; revised by equipment manufacturer, ES&S

Election design reform is met with different challenges in each jurisdiction, but some dynamics are fairly universal. With the goal of ensuring that design recommendations are actionable in the near term, Design for Democracy and the EAC sought to anticipate common challenges and pinpoint realistic or high-value opportunities for voter experience improvement. Examples of these opportunities are highlighted here.²⁷

- **Voter information materials**, many of which can be easily adapted from provided samples and produced on a desktop printer, are a ripe target for reform because their production processes are much less complex than those of ballot design.
- On ballots, **voting instructions** are a relatively accessible target for change in locations where their language and layout is not dictated by law. Some basic changes that may result in dramatic improvements include selective and deliberate use of color or shading to distinguish and highlight instructions (“Literacy instructors preferred the use of minimal color applied [only] to instructions ... stating that it draws attention to consistent and critical content without detracting from the visibility of candidate selection.”²⁸) and the simplification of instructional language (“users preferred ‘Yes’ and ‘No’ to ‘Accept’ and ‘Reject.’”²⁹).

If “voters” cannot understand how to use their voting materials, they may not be successful in voting for the candidates and positions of their choice. They may make mistakes that invalidate their ballot. They may vote for candidates or positions that are not the ones they meant to vote for. They may be intimidated by unclear or insufficient instructions and give up without voting. Indeed they may choose not to try to vote. Clear instructions are a necessary part of the voting process whether voters use paper ballots, mechanical devices (lever or punchcard), electronic devices or any other medium.³⁰

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- Simplification of **referenda language** on ballots, while not an easy thing to achieve, has many potentially positive outcomes: easier translation, shorter overall main ballot length, better user understanding leading to increased and more accurate participation. "The length and language used in measures in the prototype proved problematic for many users. For example, there was concern about making accurate selections when double negatives were used in descriptive copy."³¹ While it may not be realistic to expect that all measures will be written in accordance with simple language protocol, it is worth advocating that, at the very least, alternative versions should be created for incorporation into ballots (and made available along with full language versions to be studied by voters in advance).

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PAYING DEBT SERVICE ON THE SALES TAX REVENUE BONDS DESCRIBED ABOVE. PAYING ALL NECESSARY OR INCIDENTAL COSTS RELATED THERETO, INCLUDING, WITHOUT LIMITATION, OPERATION AND MAINTENANCE EXPENSES, WHICH MAY INCLUDE EXERCISE AND RECREATION ACTIVITIES FOR ALL AGES, INTERESTS AND ABILITIES, AND REPAIRS, RENEWALS, REPLACEMENTS AND RENOVATIONS THEREOF, AND THE FUNDING OF RESERVES THEREFOR, AND CONSTRUCTION OR UPGRADES TO CITY OUTDOOR ATHLETIC FACILITIES. AND SHALL ALL TAX REVENUES GENERATED FROM THE SALES TAX AUTHORIZED HEREIN AND FROM ANY EARNINGS FROM THE INVESTMENT OF SUCH REVENUES AND THE PROCEEDS OF SUCH BONDS CONSTITUTE A VOTER-APPROVED REVENUE CHANGE, AND AN EXCEPTION TO THE REVENUE AND SPENDING LIMITS OF ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION, OR ANY OTHER LAW?</p> <table border="1"> <thead> <tr> <th colspan="3">TAX SCHEDULE</th> </tr> <tr> <th colspan="3">TOTAL SALES</th> </tr> <tr> <th>FROM</th> <th>TO</th> <th>TAX</th> </tr> </thead> <tbody> <tr><td>0.01</td><td>0.71</td><td>0.00</td></tr> <tr><td>0.72</td><td>2.14</td><td>0.01</td></tr> <tr><td>2.15</td><td>3.57</td><td>0.02</td></tr> <tr><td>3.58</td><td>4.99</td><td>0.03</td></tr> <tr><td>5.00</td><td>6.42</td><td>0.04</td></tr> <tr><td>6.43</td><td>7.85</td><td>0.05</td></tr> <tr><td>7.86</td><td>9.28</td><td>0.06</td></tr> <tr><td>9.29</td><td>10.71</td><td>0.07</td></tr> <tr><td>10.72</td><td>12.14</td><td>0.08</td></tr> <tr><td>12.15</td><td>13.57</td><td>0.09</td></tr> <tr><td>13.58</td><td>14.99</td><td>0.10</td></tr> <tr><td>15.00</td><td>16.42</td><td>0.11</td></tr> <tr><td>16.43</td><td>17.85</td><td>0.12</td></tr> <tr><td>17.86</td><td>19.28</td><td>0.13</td></tr> <tr><td>19.29</td><td>20.71</td><td>0.14</td></tr> <tr><td>20.72</td><td>22.14</td><td>0.15</td></tr> <tr><td>22.15</td><td>23.57</td><td>0.16</td></tr> <tr><td>23.58</td><td>24.99</td><td>0.17</td></tr> <tr><td>25.00</td><td>26.42</td><td>0.18</td></tr> <tr><td>26.43</td><td>27.85</td><td>0.19</td></tr> <tr><td>27.86</td><td>29.28</td><td>0.20</td></tr> <tr><td>29.29</td><td>30.71</td><td>0.21</td></tr> <tr><td>30.72</td><td>32.14</td><td>0.22</td></tr> <tr><td>32.15</td><td>33.57</td><td>0.23</td></tr> <tr><td>33.58</td><td>34.99</td><td>0.24</td></tr> <tr><td>35.00</td><td>36.42</td><td>0.25</td></tr> <tr><td>36.43</td><td>37.85</td><td>0.26</td></tr> <tr><td>37.86</td><td>39.28</td><td>0.27</td></tr> <tr><td>39.29</td><td>40.71</td><td>0.28</td></tr> <tr><td>40.72</td><td>42.14</td><td>0.29</td></tr> <tr><td>42.15</td><td>43.57</td><td>0.30</td></tr> <tr><td>43.58</td><td>44.99</td><td>0.31</td></tr> <tr><td>45.00</td><td>46.42</td><td>0.32</td></tr> <tr><td>46.43</td><td>47.85</td><td>0.33</td></tr> </tbody> </table>	TAX SCHEDULE			TOTAL SALES			FROM	TO	TAX	0.01	0.71	0.00	0.72	2.14	0.01	2.15	3.57	0.02	3.58	4.99	0.03	5.00	6.42	0.04	6.43	7.85	0.05	7.86	9.28	0.06	9.29	10.71	0.07	10.72	12.14	0.08	12.15	13.57	0.09	13.58	14.99	0.10	15.00	16.42	0.11	16.43	17.85	0.12	17.86	19.28	0.13	19.29	20.71	0.14	20.72	22.14	0.15	22.15	23.57	0.16	23.58	24.99	0.17	25.00	26.42	0.18	26.43	27.85	0.19	27.86	29.28	0.20	29.29	30.71	0.21	30.72	32.14	0.22	32.15	33.57	0.23	33.58	34.99	0.24	35.00	36.42	0.25	36.43	37.85	0.26	37.86	39.28	0.27	39.29	40.71	0.28	40.72	42.14	0.29	42.15	43.57	0.30	43.58	44.99	0.31	45.00	46.42	0.32	46.43	47.85	0.33	<p>EARNINGS FROM THE INVESTMENT OF SUCH REVENUES BE COLLECTED, RETAINED, AND SPENT AS A VOTER APPROVED REVENUE CHANGE AND EXCEPTION TO THE LIMITS WHICH WOULD OTHERWISE APPLY UNDER ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION OR ANY OTHER LAW?</p> <p><input type="radio"/> YES <input type="radio"/> NO</p> <p>3C - LEWIS-PALMER SCHOOL DISTRICT 38 SHALL LEWIS-PALMER CONSOLIDATED SCHOOL DISTRICT NO. 38 DEBT BE INCREASED \$33,500,000 WITH A REPAYMENT OF \$27,477,125 AND SHALL THE DISTRICT TAXES BE INCREASED BY \$2,994,037 ANNUALLY TO PAY SUCH DEBT; SUCH DEBT AND TAXES TO BE USED FOR THE PURPOSES OF: CONSTRUCTING, EQUIPPING OR FURNISHING A SECOND HIGH SCHOOL TO EDUCATE 800 STUDENTS IF BALLOT ISSUE 3B IS APPROVED AT THE NOVEMBER 2, 2004, ELECTION, AND RENOVATING AND ENHANCING THE DISTRICT'S EXISTING HIGH SCHOOL ATHLETIC FACILITIES; AND SHALL THE MILL LEVY BE INCREASED IN ANY YEAR WITHOUT LIMITATION OF RATE OR AMOUNT, TO PAY THE PRINCIPAL OF, PREMIUM, IF ANY, AND INTEREST ON SUCH DEBT OR ANY REFUNDING DEBT (OR TO CREATE A RESERVE FOR SUCH PAYMENT); SUCH DEBT TO BE EVIDENCED BY THE ISSUANCE OF GENERAL OBLIGATION BONDS BEARING INTEREST AT A MAXIMUM NET EFFECTIVE INTEREST RATE NOT TO EXCEED 6.5%; SUCH BONDS TO BE SOLD IN ONE SERIES OR MORE, FOR A PRICE ABOVE OR BELOW THE PRINCIPAL AMOUNT OF SUCH SERIES, ON TERMS AND CONDITIONS AND WITH SUCH MATURITIES AS PERMITTED BY LAW AND AS THE DISTRICT MAY DETERMINE, INCLUDING PROVISIONS FOR REDEMPTION OF THE BONDS PRIOR TO MATURITY WITH OR WITHOUT PAYMENT OF THE PREMIUM OF NOT MORE THAN THREE PERCENT; AND SHALL THE REVENUES FROM SUCH TAXES AND ANY EARNINGS FROM THE INVESTMENT OF SUCH REVENUES BE COLLECTED, RETAINED, AND SPENT AS A VOTER APPROVED REVENUE CHANGE AND AN EXCEPTION TO THE LIMITS WHICH WOULD OTHERWISE APPLY UNDER ARTICLE X, SECTION 20 OF THE COLORADO CONSTITUTION OR ANY OTHER LAW?</p> <p><input type="radio"/> YES <input type="radio"/> NO</p> <p>3D - LEWIS-PALMER SCHOOL DISTRICT 38 SHALL LEWIS-PALMER CONSOLIDATED SCHOOL DISTRICT NO. 38 DEBT BE INCREASED \$29,785,000 WITH A REPAYMENT COST OF \$60,375,825 AND SHALL DISTRICT TAXES BE INCREASED \$2,876,000 ANNUALLY TO PAY SUCH DEBT; SUCH DEBT TO BE ISSUED FOR THE PURPOSES OF CONSTRUCTING, EQUIPPING, OR FURNISHING OF SCHOOL FACILITIES AS FOLLOWS: ESTABLISHING A NINTH GRADE CENTER AND RENOVATING AND ENHANCING THE CURRENT HIGH SCHOOL CAMPUS TO EDUCATE 800 ADDITIONAL STUDENTS; RENOVATING AND ENHANCING THE DISTRICT'S EXISTING HIGH SCHOOL ATHLETIC FACILITIES; AND RENOVATING AND ENHANCING PARKING LOTS AND THE COMMONS AREA AT THE EXISTING HIGH SCHOOL CAMPUS; AND SHALL THE MILL LEVY BE INCREASED IN ANY YEAR WITHOUT LIMITATION OF RATE OR AMOUNT, TO PAY THE PRINCIPAL OF, PREMIUM, IF ANY, AND INTEREST ON SUCH DEBT OR ANY REFUNDING DEBT (OR TO CREATE A RESERVE FOR SUCH PAYMENT); SUCH DEBT TO BE EVIDENCED BY THE ISSUANCE OF GENERAL OBLIGATION BONDS BEARING INTEREST AT A MAXIMUM NET EFFECTIVE INTEREST RATE NOT TO EXCEED 6.5%; SUCH BONDS TO BE SOLD IN ONE SERIES OR MORE, FOR A PRICE ABOVE OR BELOW THE PRINCIPAL</p>	<p>BONDS BEARING EFFECTIVE NETE BONDS TO BE SOLD PRICE ABOVE OR SUCH SERIES OF SUCH MATURITIES DISTRICT MAY D REDEMPTION OF OR WITHOUT PA EXCEED 3%; AND INVESTMENT OF REVENUES BE C APPROVED REVE LIMITS WHICH A ARTICLE X, SECT CONSTITUTION C</p> <p><input type="radio"/> YES <input type="radio"/> NO</p> <p>3G - S SHALL THE MILL DEBT SERVICE C OF COLORADO S OR AFTER NOVEM MILL LEVY LIMIT QUESTION APPR NOVEMBER 7, 20</p> <p><input type="radio"/> YES <input type="radio"/> NO</p> <p>3H - PEYT Shall the elected d authorized to serv notwithstanding Ar Constitution, wher terms of office for</p> <p><input type="radio"/> YES <input type="radio"/> NO</p> <p>3I - FAL SHALL FALCON I TAXES BE INCRE PROVIDED THAT BEGIN UNTIL THE ALL ETERS TER YEAR, FOR THE R GROWTH, RELIEF FACILITIES AND IMPLEMENTATIO EXTENT FUNDS</p>
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Referenda on El Paso County, Colorado, 2004 general election optical scan paper ballot

- Increase in **type size** to 12-points is another small change that may have a big impact. While “[an] optimal print design [might] be a ‘booklet’ depicting one contest per page with use of images, graphics, color and large text,”³² printing budgets and lengthy ballots render this unrealistic (though a similar scenario is attainable in the electronic realm). Of these possible enhancements, larger text is consistently recommended as the area for investment; it poses no risks (unlike photos,³³ graphics and colors) and enhances usability and comprehension for all voters. In testing, users repeatedly favor larger type, even when it means more pages or additional on-screen scrolling. Ideally, local governments will understand that “ballot legibility and ease of comprehension for voters are more important than printing costs,”³⁴ and local election officials and designers will be able to effectively advocate for larger text. In one exception to this suggestion, it is understood that there are both voter and administrative advantages to ballots that are confined to a single page (which may still be long and two-sided). As a classic example of a design tradeoff, if a ballot layout that otherwise complies with best practices marginally exceeds a single page, it may be worth seeking opportunities for text compression.
- As with any design system, **redundant use of design elements** such as color or shading, symbols and textual treatment of design elements can enhance learnability and reinforce understanding. A systematically redundant approach may be especially useful for ballot design in ensuring that, even if some design specifications do not survive the production process (as the project team experienced first-hand during the Nebraska pilot), others will, and key distinctions will be communicated.

Outcomes

Redesigning election materials is like the first few steps in a 12-step program. First you have to admit you have a problem. Then you need to ask for help. And you need to act on it. That's why the best practices contained within this document are so useful. The EAC took the guesswork out of how to improve election materials.

— John Lindback, director of elections, State of Oregon;
president-elect, National Association of State Elections Directors
(NASED)

This project led to the creation of concrete and pragmatic guidelines and samples for local jurisdictions to apply and adapt. As a result, election officials are empowered with reform tools that they can use in 2008 elections and beyond. EAC Research Director Karen Lynn-Dyson expects that this work will result in remarkable change by 2012 and attributes its potential influence largely to “gold standard” precision based on deep underlying research that vetted the recommendations.

Design for Democracy continues to work with the EAC, to build awareness of the report, “Effective Designs for the Administration of Federal Elections,” distribute editable ballot design and voter information material samples to local jurisdictions and facilitate the assimilation of best practices through a number of channels. The AIGA initiative will remain involved in voting experience reform and evolution, helping to ensure that citizens are rewarded for participation with convenient, clear, trustworthy voting experiences and election results that accurately reflect their will.

Endnotes

1. Additional information about AIGA and AIGA Design for Democracy may be found at www.aiga.org and www.designfordemocracy.org.
2. Marcia Lausen's *Design for Democracy: Ballot and Election Design* describes AIGA Design for Democracy's work in Oregon and Illinois in detail.
3. The resulting report is entitled "Ballot Design Guidance," December 2005, by Design for Democracy and National Institute of Standards and Technology.
4. According to Election Data Services, approximately 80 percent of reporting counties and voters used optical scan or direct recording electronic (DRE) voting equipment in 2006. Other systems in use included punch card, lever and paper.
5. HAVA 2002 requires that local jurisdictions replace punch card and lever machines; it also requires each polling place to have at least one voting system accessible to individuals with disabilities (this is typically an electronic machine).
6. Project team and advisory board members are listed as contributors in the appendix of "Effective Designs for the Administration of Federal Elections."
7. "Voting: What Is, What Could Be," p.13
8. From California HB 1645, "The concise statement for a state referendum must not exceed 25 words in length. For a local referendum, it must not exceed 75 words..."
9. Because the notion of offering separate paper ballots for separate languages raises concerns about fraud (it is easy to segregate out and discard the ballots of certain populations when their submissions are so easily identifiable), some jurisdictions hesitate to limit printed ballots to one language. Because English is not the official national language of the United States, some jurisdictions hesitate to print multiple dual-language ballots where English is always one of the two languages.
10. Report recommendations address paper materials in one and two languages; rolling DRE ballots can be designed to accommodate multiple languages with ease.
11. *Design for Democracy: Ballot and Election Design*, p. 7
12. "Effective Designs for the Administration of Federal Elections," p. 6.6
13. "Ballot Design Options," p. 5
14. *Design for Democracy: Ballot and Election Design*, p.11
15. "Effective Designs for the Administration of Federal Elections," p. 7.21

16. For instance, despite the many advantages of electronic voting in managing the needs of a diverse population and the permutations required of U.S. ballots, and the fact that security and integrity issues have challenged every voting system in history, electronic voting remains hard to accept and an easy target for valid but misplaced concerns about voting system integrity. Yet the resistance among voters is often more theoretical than actual. For instance, when confronted with a well functioning touchscreen voting prototype during test sessions, voters of all ages and characteristics embraced the method.
17. "Effective Designs for the Administration of Federal Elections," p. 7.29
18. "Effective Designs for the Administration of Federal Elections," p. 1.3
19. The research team suspects that the generic language used in ballot usability studies resulted in a lack of voter emotional affinity, which may have subtly impacted results; this is a topic for consideration in future studies.
20. The Nebraska counties involved in the pilot paid for ballot printing; the cost of polling place signage printing was shared with the EAC; Nebraska did not pay for ballot design (prior to vendor handoff), which was provided by the project team.
21. Due to less direct vendor involvement in the project than originally imagined, final recommendations are vetted against user and content considerations to a higher degree than technical constraints; however, due to rigorous consultation with experts and analysis of vendor materials, it is believed that most major vendor systems can accommodate the design recommendations with minimal reprogramming.
22. For detailed recommendations by type of election material see "Effective Designs for the Administration of Federal Elections": voter information materials, p. 2.3; optical scan ballots, p. 3.3, full-face DRE ballots, p. 4.3; rolling DRE ballots, p. 5.1.
23. For samples and component specifications by type of election material, see "Effective Designs for the Administration of Federal Elections": voter information materials, pp. 2.10–2.65; optical scan ballots, pp. 3.6–3.57; full-face DRE ballots, pp. 4.6–4.25; rolling DRE ballots, pp. 5.6–5.37. Editable samples are available upon request to the EAC or at www.designfordemocracy.org.
24. For planning tools and guidance by type of election material see "Effective Designs for the Administration of Federal Elections": voter information materials, pp. 2.4–2.7; optical scan ballots, pp. 3.4–3.5, full-face DRE ballots, pp. 4.4–4.5; rolling DRE ballots, pp. 5.4–5.5.
25. Voters rely heavily on human interaction when at the polling place, independent of the quality of the informational materials, and there is a strong need for volunteer poll worker training in combination with signage accuracy. As the project team observed first hand, "'How to Vote' signs instructed voters to cast their ballot by pressing a yellow Cast Vote Button, however, the actual Cast Vote Button on the equipment was red. When poll workers told voters in the booth to press the yellow button, sometimes repeatedly, voters were unable to cast their ballots" ("Effective Designs for the Administration of Federal Elections," p. 7.16). Ideally, attention is paid to the redesign of polling place materials, in context of the greater election experience.

Case Study: AIGA Design for Democracy develops best practices for ballot and polling place design on behalf of the U.S. Election Assistance Commission

26. "Effective Designs for the Administration of Federal Elections," p. 7.12
27. These insights and suggestions are located throughout "Effective Designs for the Administration of Federal Elections."
28. "Effective Designs for the Administration of Federal Elections," p. 7.29
29. "Effective Designs for the Administration of Federal Elections," p. 7.29
30. "Guidelines for Writing Clear Instructions and Messages for Voters and Poll Workers," p.1
31. "Effective Designs for the Administration of Federal Elections," p. 7.20
32. "Effective Designs for the Administration of Federal Elections," p. 7.24
33. Candidate and instructional photo images and are not encouraged, as recognition and reproduction quality cannot be guaranteed.
34. "Effective Designs for the Administration of Federal Elections," p. 7.7

References

“Effective Designs for the Administration of Federal Elections”

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Election Data Services
www.electiondataservices.com

International Federation of Election Systems (IFES) ballot library
www.ifes.org/library

AEI Brookings Election Reform Project
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