Digital ballot design studio
Select, Deselect + Scroll, and Paging

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This is a report on a workshop to explore ways to design a ballot that supports voters and prevents over-votes while creating a good voting experience.
Goals

No interaction in marking a digital ballot is more critical than what happens when a voter tries to select more candidates than allowed in the voting rules.

The Help America Vote Act says that voters must be informed of an overvote and allowed to correct it.

Current voting systems handle this requirement in many different ways: with error messages or by simply not allowing selections past the allowed number. There is debate about the best design solution to protect voters while allowing a good voting experience.

To provide input to the Human Factors and Privacy Working Group on this issue, this design studio worked to generate new ideas for how voters can manage this interaction, even in large or a multi-member contests.

The goal was to form ideas that put the voter in control of marking the ballot, while supporting them through the complexities of voting rules.
How we worked

The Ballot Design Studio took place in December, 2016 in Boston, MA.

The participants included designers, researchers, developers, and experts in interaction and motion design, as well as accessibility who work in fields with constraints similar to elections, like government services, healthcare, and finance.

The workshop participants were urged to draw inspiration from their own work or from ideas in current user experience design, while also considering the constraints of elections.

The day started by brainstorming initial ideas, which were used as input to more complete designs as the teams worked together to refine the concepts. By the end of the day, we had several concepts that had gone through several iterations and many smaller ideas.

The work was done in in rough sketches, allowing ideas to be expressed quickly so the group could focus on the underlying concepts rather than “finished” designs.
Guiding principles

As a starting point for the design work, these guiding principles and constraints helped the group keep the elections context in mind.

Ballots must be be:

• accessible to voters with disabilities
• not frustrating or hindering
• help voters mark their ballots as they intend
• implementable by voting system developers
• future tolerant

Design constraints

• Voters may not be digitally literate or comfortable with technology.
• The design must work for both vote-for-one and multi-select contests.
• Contests may have many candidates.
• Scroll bars cannot be the only means of navigating within a page.
What we learned

Several themes emerged from the design studio. They are illustrated in the next section.

• Subtle motion in the interface can be helpful in drawing attention to buttons or showing that there is a long list of candidates.

• Visual cues like animation can be coordinated with information in the audio ballot so that both interaction modes have an equivalent experience.

Some of the ideas were surprising in the context of elections at first, but as they developed, could be promising for supporting voters. They include:

• More explicit ways of providing feedback about the number of selections as they are made.

• Transforming error messages into active windows where voters can make corrections quickly and easily.
The ideas generated during the design studio can be inspiration for future ballot design. They can be used individually or in combination.
Previewing + summarizing

Can a preview of the ballot set expectations for what voters will encounter on the ballot?

Idea: An initial preview page alerts voters about what to expect on their ballot, including number of candidates, number of pages, and number to select. Visual cues reinforce this information.

![Image of a school board with instructions](image)

- Gives simple instructions in plain language
- Gives visual cues, that change appearance to show how many are selected
- Works for either paged or scrolling layouts
Animating a preview

Can animation be a useful tool to preview the ballot?

Idea: An animation either on the welcome screen or before each contest will scroll through the ballot so voters can see what they will be asked to do.

Teach through animation.

Opening is an opportunity to include brief tutorial on how to vote in this contest.

Sets expectations about number of candidates on the ballot.

Works for either pagination or scroll layouts.
Getting attention

How can voters be given feedback as they navigate their ballot?

Idea: Build simple responses into the buttons to give voters instant feedback upon click, including visual style and bits of animation.

![Diagram showing selection changes color upon click and button changes color, enlarges to draw attention.](image)
Selecting candidates

Will building a list of selected candidates help voters select their candidates from a long list?

Idea: Selected candidates create a list that will move to the top of the page. Voters edit or confirm to vote.

- Selected candidates become part of list at top of page
- Empty slots show the number of candidates allowed
- Selected candidates are grayed out within candidate list (to help voters keep their place)
- Counter keeps track of how many candidates remain to choose
- Progress shown in navigation
- Ability to deselect in full list or at top
Selecting, then choosing

Can a two-step process help voters quickly and easily select their candidates?

Idea: With a two-step process, voters select any candidate they may be interested in and then make a final choice to vote.

Initially voters are allowed to choose any number of candidates.

Unselect the candidates to narrow down to a final choice.

The selected candidates shown, so voter can make a final choice.

Leads to review page before casting the ballot.
Making corrections

How can error messages be designed to reduce the amount of confusion and error?

Idea: When errors occur, the system shows a working box where voters can change or confirm their selections.

When too many are selected a box pops-up where the voter can refine the list.

In-line validation to guide voter.

When working box appears, all other text is grayed out.
Choosing one at a time

Can simplifying the choices make the voting process easier and better?

Idea: This idea breaks the ballot down into its simplest form by asking the voter to select 'yes' or 'no' for each candidate or ballot measure.

- Countdown ticker lets voter know how many more they can select
- Voters make a choice for each candidate
- Cues voter to the number of candidates and where they are in the list

The AVTI EZVote project used a similar idea

- Works for audio and digital
- Pagination or scrolling is not a problem
- Leads to a review/confirmation page
Scrolling + paging

How can the scrolling or pagination mechanism be designed to hint to where voters are in a long list?

Idea: Use scrolling mechanism as indicator of location in list.

Scroll bar has one dot for each candidates, and highlights current view.

Cuts last entry on the screen in half to show continuing list.

Shows complete number of pages and highlights current page.
Choosing your own adventure

Can voters customize the voting process for an optimal voting experience?

Idea: Prompt voters to select the settings that work best for them in addition to providing more voting options throughout the ballot, including what order they would like to vote in, their preferred order, or whether they would like to vote by party.

Choose a race to begin

- President
- Senator
- Governor
- School Board

go back | continue

Sets structure for ballot by letting voters know what races to expect

Allows voters to select their preferred order for their ballot?
Visualizing cues

Can visual cues help voters move through the voting process quicker and more easily?

Idea: Include consistent visual representations throughout the platform to reinforce how the ballot works and to let voters know what to expect.

Shows and tells complete number of candidates to expect

Representation of number of candidates to be selected

Shows and tells number of selections remaining

Progress bar indicates location in list
Designing for audio

How can we design for audio?

Idea: For every visual action there is a comparable audio prompt.

The visual screen scrolls through 35 candidates

"This is a list of 35 candidates for School Board."

The audio script tells the number of candidates

For every action on the visual side, there is the same action with audio.
Explaining civics

Can providing civics information help voters make decisions?

Idea: Include short information about the position or amendment being voted for right in the ballot.

Includes concise information about the position in plain language.
About design studio

We organized this work as a design studio. This method is a process for bringing a team together to generate ideas, explore design solutions, and review them.

It was created* as a way to bring a user-centered design approach into agile software development. The design studio is characterized by:

• Rapid sketching and iteration of ideas

• A focus on the user experience and consideration of different user needs

• Bring the whole team together in the design process, with different kinds of designers, developers, and other roles working together.

• Constructive evaluation, with both critique and appreciation of new ideas.

Sketches from the workshop

These are just a few of the original sketches from the day, from which the concept drawings in this report were created.
Participants

We were lucky to welcome many talented designers from the private and public sectors.

Participants:

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## Participants

Center for Civic Design and NIST led the workshop and also joined as participants to share election knowledge.

### CCD + NIST Participants:

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