Vote-by-Mail Research Report

SUMMATIVE EVALUATION
MAR 2016
IDEO + LA COUNTY

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Summary

This research session tested the vote-by-mail experience, providing the IDEO team with qualitative and quantitative data to inform the final design of the vote-by-mail ballot, secrecy sleeve, and envelopes. During previous research sessions, we learned about experts' best practices for vote-by-mail design, how speakers of other languages prefer to read ballot information, and how to design a vote-by-mail system that might fit in voters' hands, cars, parties, bags, kitchen tables, and lives as they prepare their selections and ballots over the span of days. This summative evaluation tested usability and accessibility while also assessing the impact of the ballot size and secrecy sleeve on the overall experience. This research provided a final round of feedback from Los Angeles communities, including people from a diverse linguistic, race/ethnic, educational, socioeconomic, age, and voting experience backgrounds. It was a deeply collaborative effort with leadership and operational support from the IDEO and LAC RR/CC teams. The analysis of quantitative and qualitative data provided insights, both validating existing system design and identifying remaining opportunities for improvement.

Participants

IDEO and LAC RR/CC worked in partnership with community-based organizations and governmental departments to recruit diverse participants from across LA County. Partnering organizations included Korean Resource Center, League of Women Voters, National Association of Latino Elected and Appointed Officials, United Cerebral Palsy of Los Angeles, and Asian Americans Advancing Justice of Los Angeles. A total of 76 people participated. Participants were recruited purposefully, meaning that the IDEO and LAC RR/CC teams selected participants according to traits that might most inform vote-by-mail design decisions.

SELECTION CHARACTERISTICS

Experienced VBM voters
New VBM voters
Seniors (65+)
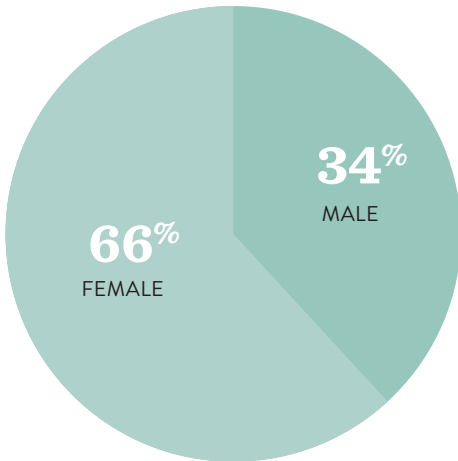Young people (18-25)
People with minimal formal education
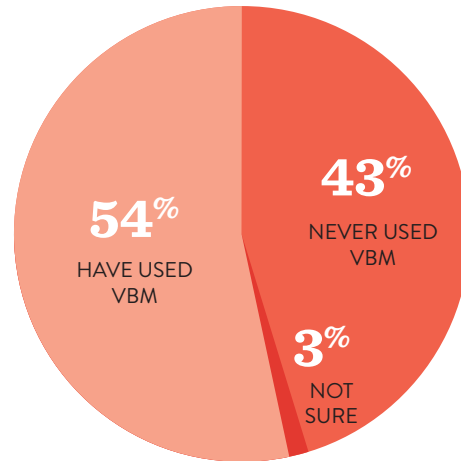Spanish-speakers
Korean-speakers
People with motor impairments
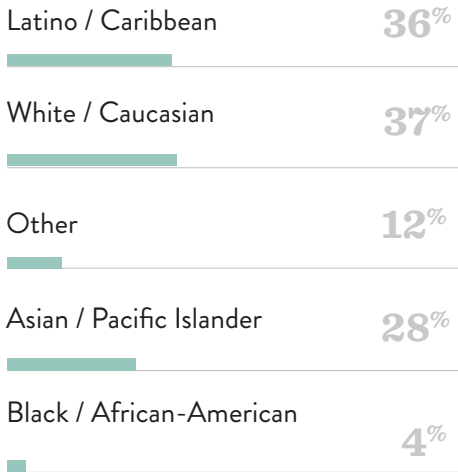People with mild visual impairments

GENDER

34% MALE

66% FEMALE

VOTING EXPERIENCE

54% HAVE USED VBM

43% NEVER USED VBM

3% NOT SURE

RACE / ETHNICITY

Latino / Caribbean **36%**

White / Caucasian **37%**

Other **12%**

Asian / Pacific Islander **28%**

Black / African-American **4%**
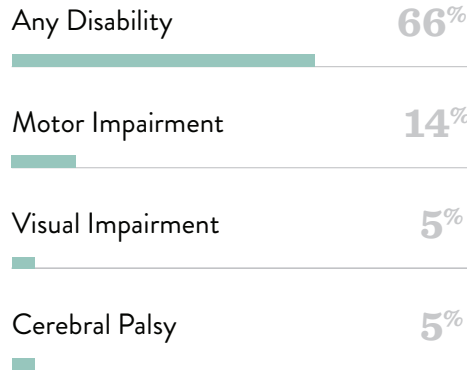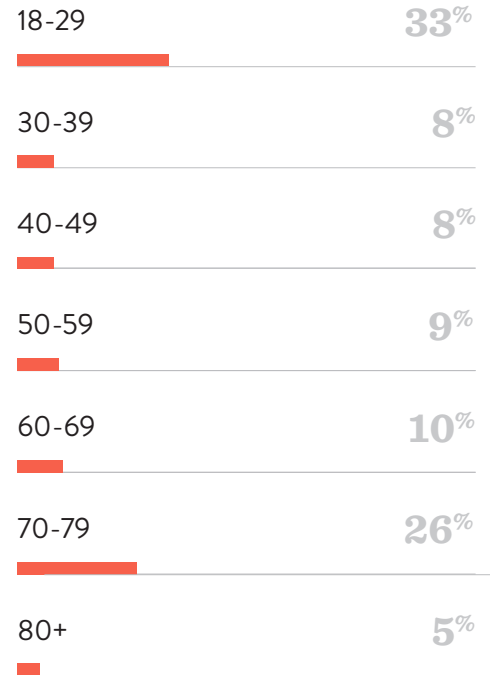
Results add up to greater than 100% as several participants reported mixed racial/ethnicity by marking more than one race/ethnicity category.

ACCESS CHALLENGE

Any Disability **66%**

Motor Impairment **14%**

Visual Impairment **5%**

Cerebral Palsy **5%**

AGE

18-29 **33%**

30-39 **8%**

40-49 **8%**

50-59 **9%**

60-69 **10%**

70-79 **26%**

80+ **5%**

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Participant Breakdown

Participants were diverse in terms of race/ethnicity, gender, age, educational attainment, ability, voting experience, technology experience, and financial status.

COMPUTER USAGE

13% RARELY USE

12% USE WEEKLY

75% USE DAILY

MOBILE PHONE USAGE

46% USE MANY APPS & FEATURES

23% RARELY USE PHONE

31% USE FOR BASIC CALLS & TEXTS

FINANCIAL SITUATION

Not enough for basics like food — **1%**
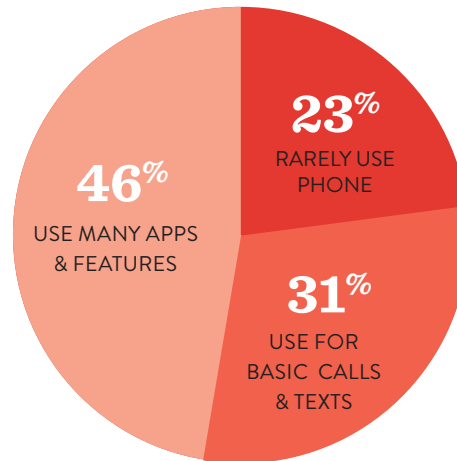
Not enough for bills — **20%**

Living month-to-month — **36%**

Comfortable with a little left over to save — **38%**

Enough to splurge — **4%**

Prefer not to answer — **1%**

EDUCATIONAL ATTAINMENT

No formal schooling — **1%**

1-8 Grade — **1%**

9-12 Grade — **8%**

High school — **12%**

Associates or Bachelors — **34%**

Masters — **13%**

PhD or professional — **12%**
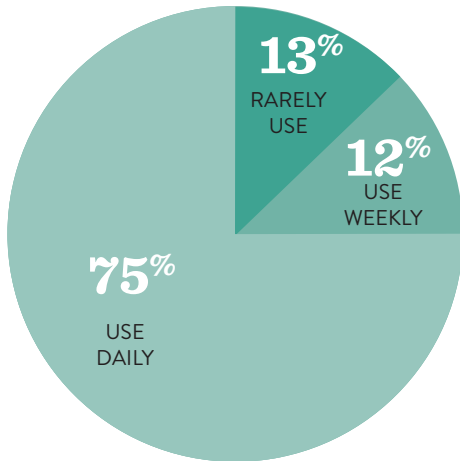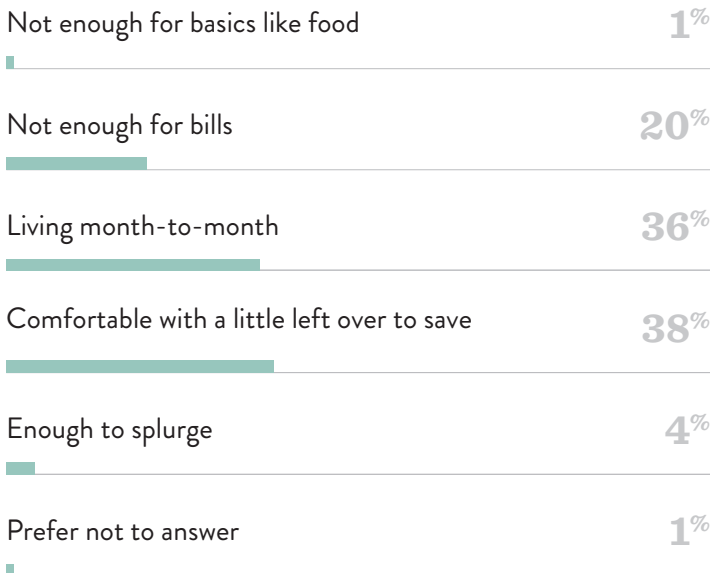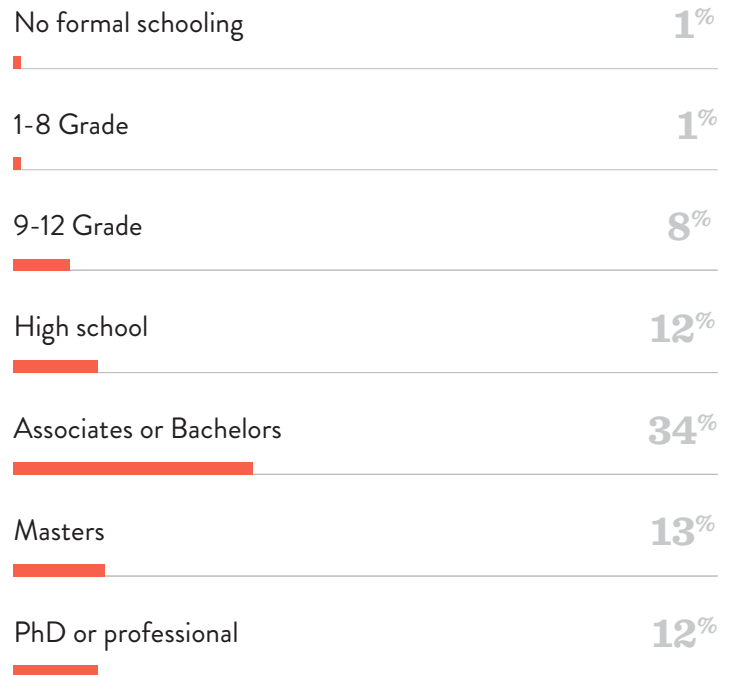
Methods

This summative evaluation assessed the vote-by-mail experience using quantitative and qualitative design research methods. Upon agreeing to participate in this research, participants received a randomized vote-by-mail packet through the mail. Packets in each appropriate language were randomly selected from four packet types, including: large / small ballots and secrecy sleeve / no secrecy sleeve. When participants received their packet, it included a message introducing them to the study, a reminder of their phone appointment time, and a note asking them not to open the official ballot envelope until their scheduled interview time. During their interview times, research staff called participants and led them through the vote-by-mail experience over the phone. These methods allowed the team to assess the vote-by-mail experience from a more natural context, participants' own homes.

The voting process involved several distinct steps designed to simulate a real vote-by-mail experience. With their interviewers on the phone, voters opened the official vote-by-mail envelope, unpacked it and described their first impressions. The interviewers gave voters a series of tasks to complete, such as finding a particular issue or candidate on the ballot and making a selection.

Voters then used a vote list to complete the ballot's 21 contests. The vote list method, supported by the federal and state voting system certification board, entails supplying the voters who are testing the new system with a common list of choices for candidates and propositions and asking them to select only these choices. This method is perhaps a better assessment of a voters' ability to follow written instructions than their ability to think through complex decisions and indicate their preference on a ballot. However, the real situation is difficult to simulate and even more difficult to evaluate. So, the vote list method is a flawed but helpful means of assessment.

After completing the ballot with the vote list, participants were then guided by the interviewers to pack their ballot into the official return envelope and post it through the mail. When these packets returned to the LAC RR/CC offices, the team assessed how voters marked their selections, the accuracy of selections, completion, and validity.

A data collection instrument was developed by the IDEO team to collect quantitative and qualitative metrics to capture data during this experience. Trained LAC RR/CC staff collected this data using a Qualtrics survey operating on the interviewers' computers. Interviews were conducted in Spanish, English, or Korean, depending on the preference of participants. For a list of all questions and answer choices within these instruments, please see Appendix at end of document. Quantitative data was analyzed using descriptive and comparative statistics on SPSS data analysis software.

As a part of validating and finalizing the vote-by-mail system, the IDEO and LAC RR/CC teams assessed usability and accessibility of the design during each stage of the experience. Usability was defined as satisfaction, ease, and completability. In addition to the qualitative feedback the team received, there were several specific calculations and considerations for each of these usability assessments.

- Satisfaction and ease were determined through voters' quantitative ratings and qualitative feedback. Quantitative ratings were typically on a 1-4 point scale and qualitative feedback involved an open description of how each task was completed using the talk-aloud method.
- Completability was also assessed through accuracy rates and a valid ballot rate. The accuracy rate is the number of correct selections (according to the vote list) divided by the total number of selections on returned ballots. Valid ballot rate is the number of castable ballots divided by the total number of returned ballots.

A quantitative assessment of accessibility was challenging for the vote-by-mail system because it is inherently inaccessible to many communities. This system requires voters to have the motor skills needed to hold a pen and mark the paper with

precision and control. It requires voters to have enough vision to read text. Once it arrives in a voter's mailbox, the vote-by-mail system cannot be customized or tailored to a particular person's needs. Given this reality, assessments of accessibility had to be more nuanced, providing deeper insights into how the experience may have been different for people from traditionally underserved communities. Accessibility was calculated through a comparative analysis of disparities between traditionally well-served and under-served communities. For example, we assessed whether particular stages in the experience were significantly more difficult for Spanish-speakers than English-speakers, people with motor impairments than people without, seniors than non-seniors, etc. Through these comparative statistics, we were able to opportunities for improvement, although perfecting accessibility is not feasible.

Overall limitations and biases for the study include a Hawthorne effect[1], social desirability bias[2], and sampling bias[3]. Additionally, it is important to recognize that this simulated experience may differ in important ways from real vote-by-mail experiences, meaning that voters' behaviors could be quite different during a real election. These limitations are addressed, in part, by unobtrusive observation protocols, encouraging critical feedback, stimulating realistic voting scenarios, and recruiting participants from diverse race/ethnic, linguistic, ability, and socioeconomic backgrounds. Moreover, these research sessions are among several iterative cycles of research and design, all contributing to an overall understanding of user behavior and preferences.

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1. People tend to act differently when they know that they are being observed.
2. People tend toward social acceptable behavior and statements in a new social environment, often avoiding giving negative critique.
3. This is not a strictly representative sample of individuals, so their experience and feedback might not be representative of all Los Angeles voters.

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Prototypes

The proposed ballot system includes an official receive and return envelope, an informational booklet, secrecy sleeve (tested among half of participants), and a double-sided 11x17" or 8.5x11" (randomly tested among half of the participants, each). On the large ballot, a 20-30 contest election will fit on one sheet and a 75-contest election uses three sheets. The system uses thicker paper for durability. For people who prefer to vote in another language, the bilingual layout provides both English and their chosen language.

LOS ANGELES COUNTY, NOV. 6, 2018

Vote-By-Mail
Voto por correo
Information

Ballot must be received by 8PM on November 6.

Boleta debe ser recibido por 8PM el 6 de Noviembre.

OFFICIAL

Secrecy
Sleeve

Place your ballot in here nefore returning.

Marking your votes
Marcando sus votos

To make your selections, fill in the oval to the left of your choice. Make sure to fill the oval completely, and don't make marks outside the oval. Please don't vote for more choices than indicated. You don't have to vote in every [...]

Para hacer sus selecciones, llene el óvalo a la izquierda de su selección. Asegúrese de llenar el óvalo completamente, y no haga marcas fuera del óvalo. Por favor no vote por más opciones que se indica. Usted no tiene que votar en cada ciencia.

Misplaced or damaged ballots
Fuera de lugar o papeletas dañadas

- Vote in person OR return a damaged ballot in envelope provided and call (562) 466-1323 or (800) 815-2666 to request a replacement ballot before [...]

- Vote en persona o devuelva por correo votación o llamada (562) 466-1323 o (800) 815-2666 para solicitar una boleta de reemplazo antes de las elecciones.

Federal Offices
Oficinas Federales

President and Vice President
Presidente y Vicepresidente
Vote for One / Vote por Uno

- ○ **Gary Johnson** [US]
  for President / para Presidente
  James P. Gray [US]
  for Vice President / para Vicepresidente
  Party Preference: Libertarian
  Preferencia de Partido: Libertaria

- ○ **Roseanne Barr** [PFA]
  for President / para Presidente
  James P. Gray [PFA]
  for Vice President / para Vicepresidente
  Party Preference: Peace and Freedom
  Preferencia de Partido: Paz y la Libertad

- ○ **Barack Obama** [DEM]
  for President / para Presidente
  Joseph Biden [DEM]
  for Vice President / para Vicepresidente
  Party Preference: Democrat
  Preferencia de Partido: Demócrata

- ○ **Jill Stein** [GRN]
  for President / para Presidente
  Cheri Honkala [GRN]
  for Vice President / para Vicepresidente
  Party Preference: Green
  Preferencia de Partido: Verde

- ○ **Thomas Hoefling** [AI]
  for President / para Presidente
  Robert Ornelas [AI]
  for Vice President / para Vicepresidente
  Party Preference: Independent
  Preferencia de Partido: Independiente

- ○ **Mitt Romney** [REP]
  for President / para Presidente
  Paul Ryan [REP]
  for Vice President / para Vicepresidente
  Party Preference: Republican
  Preferencia de Partido: Republicano

State Senator: 26th District
Senador Estatal 26 Distrito
Vote for One / Vote por Uno

- ○ **Ben Allen** [REP]
  Party Preference: Republican
  School Board Member Santa Monica-Malibu Unified School District
  Preferencia de Partido: Republicana
  Miembro de Junta Escolar, Santa Monica-Malibu Unified School District

- ○ **Sandra Fluke** [DEM]
  Party Preference: Democrat
  Social Prosecutor
  Preferencia de Partido: Demócrata
  Procurador de Justicia Social

United States Representative: 43rd District
Diputado Unidos representantes 43 Distrito
Vote for One / Vote por Uno

- ○ **John Wood, Jr** [REP]
  Party Preference: Republican
  Political Writer
  Preferencia de Partido: Republicana
  Escritor Político

- ○ **Maxine Waters** [DEM]
  Party Preference: Democrat
  United States Congresswoman
  Preferencia de Partido: Demócrata
  Congresista de Estados Unidos

Insurance Commissioner
Comisionado de Seguros
Vote for One / Vote por Uno

- ○ **Jerome E. Horton** [DEM]
  Party Preference: Democrat
  Member, State Board of Equalization
  Preferencia de Partido: Demócrata
  Miembro de la Junta Estatal de Impuestos

- ○ **G. Rick Marshall** [REP]
  Party Preference: Republican
  Chief Financial Officer
  Preferencia de Partido: Republicana
  Jefe de Finanzas

Member State Board of Equalization
Junta de Igualación del Estado miembro
Vote for One / Vote por Uno

- ○ **Jerome E. Horton** [REP]
  Party Preference: Republican
  Member, State Board of Equalization
  Preferencia de Partido: Republicana
  Miembro de la Junta Estatal de Impuestos

- ○ **Alex Padilla** [DEM]
  Party Preference: Democrat
  Chief Financial Officer
  Preferencia de Partido: Demócrata
  Jefe de Finanzas

Controller
Contralor
Vote for One / Vote por Uno

- ○ **Betty T. Yee** [DEM]
  Party Preference: Democrat
  California State Board of Equalization Member
  Miembro de Estado de California

- ○ **John Chiang** [REP]
  Party Preference: Republican
  California State Controller
  Preferencia de Partido: Republicana
  Contralor del Estado de California

State Offices
Oficinas Estatales

Governor
Gobernador

Secretary of State
Secretario de estado
Vote for One / Vote por Uno

- ○ **Pete Peterson** [REP]
  Party Preference: Republican
  Director of California
  Preferencia de Partido: Demócrata
  Completado

- ○ **Alex Padilla** [DEM]
  Party Preference: Democrat
  California State Senator
  Preferencia de Partido: Republicana
  California Senador Estatal

Treasurer
Tesorero
Vote for One / Vote por Uno

- ○ **Greg Conlon** [REP]
  Party Preference: Republican
  Businessman/CPA
  Preferencia de Partido: Republicana
  Empresario / CPA

- ○ **John Chiang** [DEM]
  Party Preference: Democrat
  California State Controller
  Preferencia de Partido: Demócrata
  Contralor del Estado de California

Attorney General
Ministro de Justicia
Vote for One / Vote por Uno

- ○ **Ronald Gold** [REP]
  Party Preference: Republican
  California Attorney
  Preferencia de Partido: Republicana
  Abogado de California

- ○ **Kamala D. Harris** [DEM]
  Party Preference: Democrat
  Attorney General of California
  Preferencia de Partido: Demócrata
  La Procuradora General de California

Insurance Commissioner
Comisión [...]

OFFICIAL

Return Envelope

Ballot enclosed

Los Angeles County
Registrar-Recorder/County Clerk
PO BOX 30960
Los Angeles CA 90030-0960

11

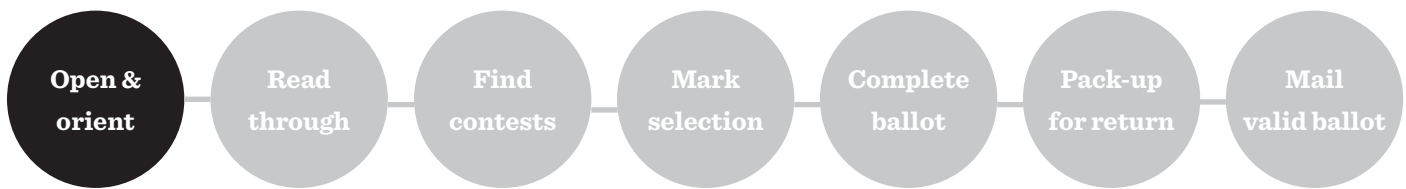# USABILITY & ACCESSIBILITY OF THE VOTE-BY-MAIL EXPERIENCE

The vote-by-mail experience involves a journey of seven stages, from the moment a voter opens the envelope until it is returned through the mail. These stages are not necessarily linear, so a voter might open the envelope, make some selections, go back and read the instructions, make more selections, put the ballot back in the envelope for a few days, read the instructions again, mark more selections, and eventually pack up and seal the package to be cast through the mail or another official deposit box.

| Open & orient | Read through | Find contests | Mark selection | Complete ballot | Pack-up for return | Mail valid ballot |

Privacy and sharing are a part of each stage, as voters complete their ballots from their own homes, cars, dining room tables. Voters have vastly different desires around privacy. As the IDEO team found during the first round of research, the vote-by-mail ballot is often completed in social circumstances. Families discuss and make selections together. Groups of friends, colleagues, and political advocates support each other in more communal gatherings and voting parties.

As described in the methods section, usability and accessibility were measured in a nuanced way. Usability is a quantitative and qualitative metric, defined as satisfaction, ease, and completability. Accessibility is examined through the measurement of any disparities in the experience between traditionally underserved communities and traditionally well-served communities.

OPEN & ORIENT

| Open & orient | Read through | Find contests | Mark selection | Complete ballot | Pack-up for return | Mail valid ballot |

BACKGROUND

During first stage in the journey, voters open the official vote-by-mail envelope and begin to orient themselves to its contents. These contents included a secrecy sleeve (for those randomized to this group), a large or small ballot (depending on randomization), and an official return envelope. As voters felt and saw the new system for the first time, interviewers captured their first impressions.

FINDINGS

Voters had overwhelmingly positive responses to the ballot, its size, weight, and layout. This narration of first impressions was typical of experienced voters, as they encountered and assessed the differences between this new ballot and the old one.

"Oh they changed the design. The palm tree. It is actually pretty nice. It is pretty long too. I remember it being a lot smaller. It looks a lot better. The instructions are all laid out on the left. Voter bill of rights on the back. Oh wow. It is a big card. Judicial and state measures. Governors. Oh you actually have to make the selections on it. On the back, there are a couple sections. But it is pretty big. I like the quality of the paper."

Voters especially commented on the weight and size of the paper. As they described the ballot, most made comments like,"It looks like something that carries weight and value" and "High quality paper, everything looks nice and big."

None of the voters expressed concern about the weight of the paper. Instead, they often associated weight with quality and formality in their descriptions.

Nearly every voter commented on the simplicity and perceived ease of the layout. Some common statements were "It looks really simple because there is not as much writing" and "It looks kind of modern. Very straight forward. I like the feel. The borders have a nice feel. It seems very efficient, instead of each page being one section. It is nicely put together. It is very user friendly," and "It looks less intimidating than current ballots."

RECOMMENDATIONS

According to these findings, the design of the ballot system gave participants confidence in their ability to use vote-by-mail and confidence in an apparently official and important democratic process. Given the diversity of our participant population, this response is very positive and enables us to confidently recommend proceeding with the overall design.

TOPIC: Usability & accessibility at first glance

BIG QUESTION: How might we design a vote-by-mail system that gives voters confidence from the first glance?
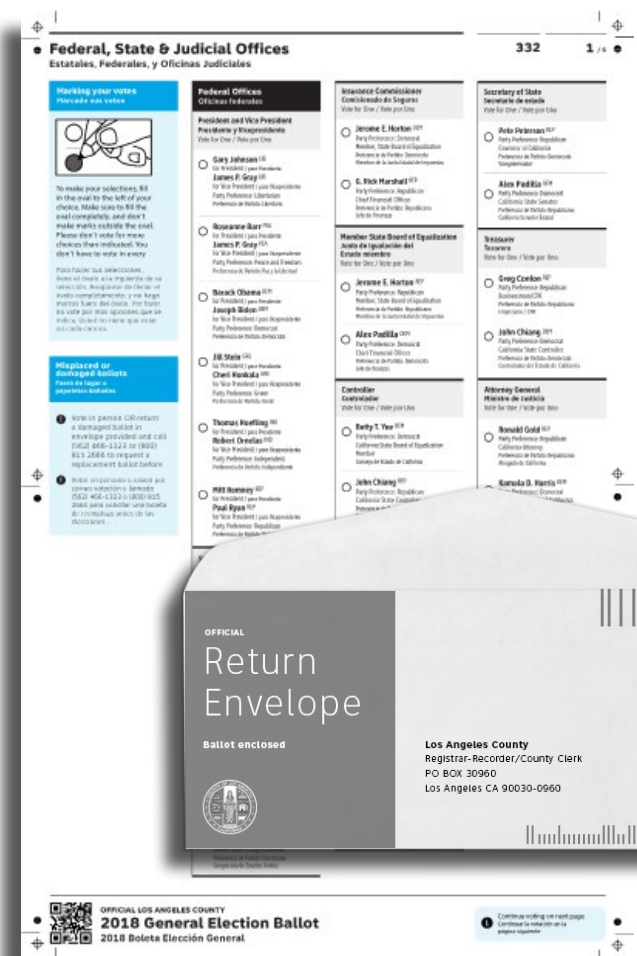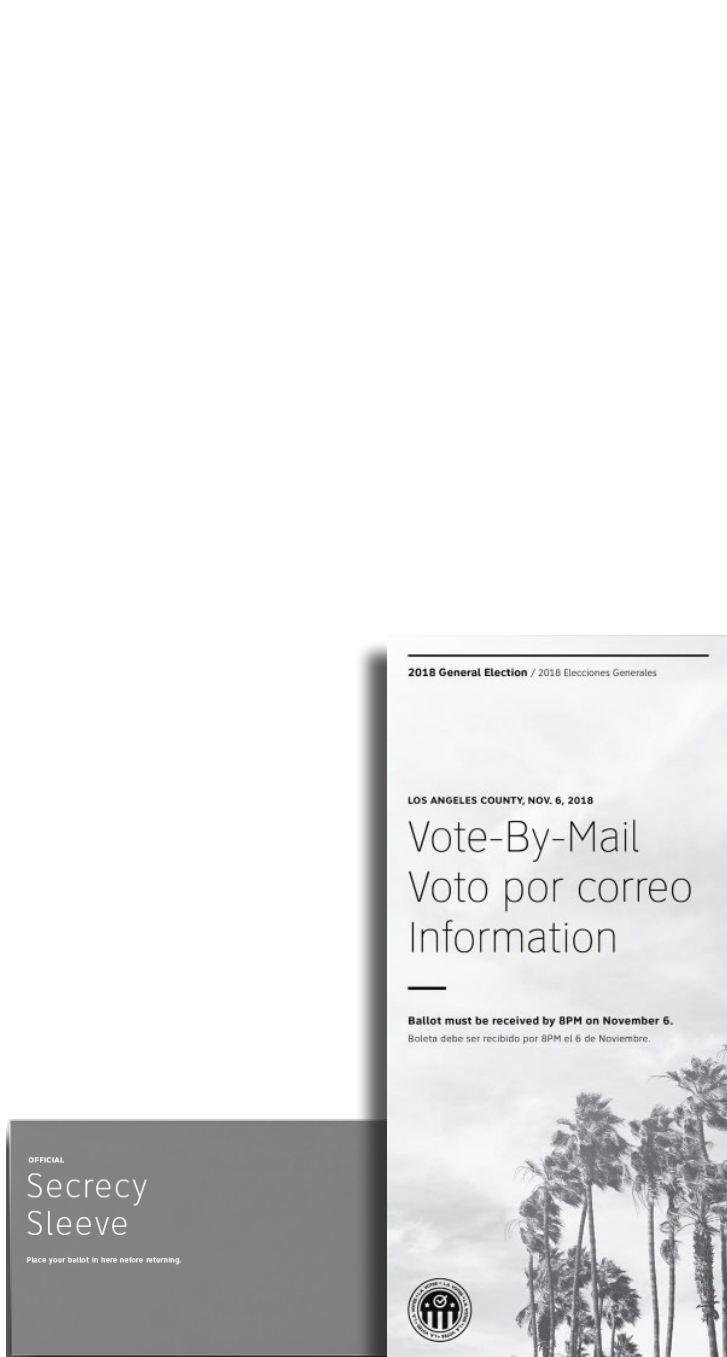
WHAT WE'VE LEARNED: The new system was overwhelmingly embraced by voters, who found it simple, efficient, and official at first glance.
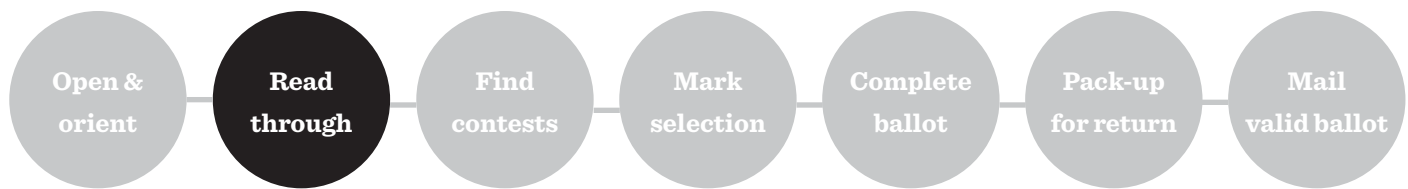
DESIGN DECISION: These learnings validate design decisions related to layout, font style, graphic style, paper size, and paper weight.

PRINCIPLES: Easy, private & independent

READ THROUGH

Open & orient	**Read through**	Find contests	Mark selection	Complete ballot	Pack-up for return	Mail valid ballot

BACKGROUND

After voters open the official ballot envelope and begin to orient themselves, the next stage in the experience involves reading through the instructions and contests. From a design perspective, the most important feature of usability and accessibility during this stage is the legibility of type. Vote-by-mail ballots involve a lot of text-based content, so the readability must be achieved through subtle graphics, font style, font size, paragraph style, and the white space.

FINDINGS

During this study, voters quickly transitioned from commenting on their overall first impressions of the ballot's approachability to commenting on its readability. Most noted the large font size. People with visual impairments, all of which were mild enough to be aided by eye glasses, were particularly contented with this font size. As one voter put it, "I have visual a perceptual problem and this is a thousand times better than what exists now. The print is really easy to see."

Positive statements of this sort were affirmed by quantitative ratings of the font size. 91% of participants thought that the font was an easy size to read, while 7% and 3% found it a little too small or way too small. Given the study's purposeful selection of seniors and other people with mild visual impairments, these ratings are overwhelmingly high.

Just as important for accessibility, there were no disparities in the experience of font size between voters overall and voters from traditionally marginalized communities. Specifically, there were no statistically significant differences in voters' satisfaction with the font size. This meant, for example, that older voters were as satisfied as voters of all ages and voters with visual impairments were as satisfied as voters of all abilities.

RECOMMENDATIONS

According to these findings, the vote-by-mail ballot is highly readable and legible to voters, even voters from communities that tend to require large type face to read content. Given the diversity of participants, these findings validate the current design direction around font, paragraph, and layout styles. It should be noted that maintaining relatively large font and ample white space does have design tradeoffs, including resulting in a potentially longer ballot, more ballot pages, and/or a heavier overall vote-by-mail packet, particularly for bilingual ballots. Given that excellent readability is a top priority, we recommend proceeding with the large font size and overall layout, and revisiting paper thickness if trying to reduce packed envelope weight.
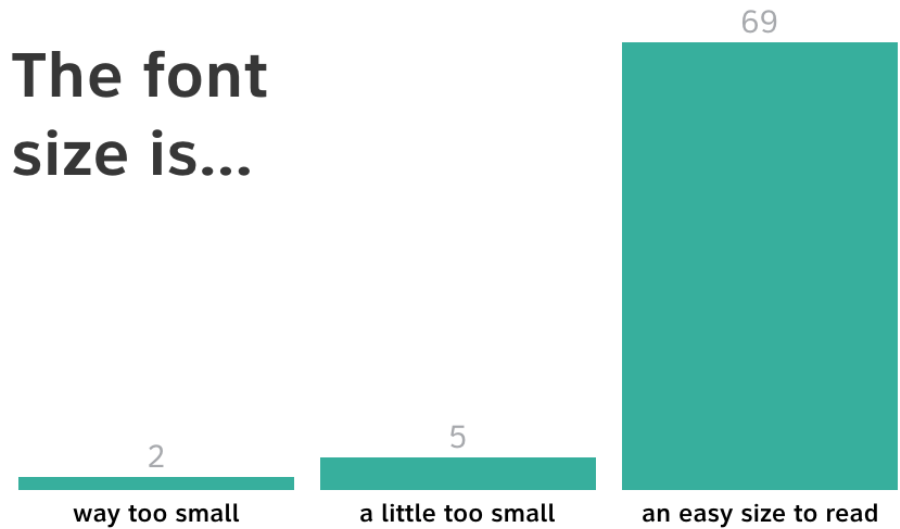
TOPIC: Usability & accessibility of content

BIG QUESTION: How might we design a vote-by-mail system that voters can read with ease?

WHAT WE'VE LEARNED: The new system was easy to read.

DESIGN DECISION: These learnings validate design decisions related to font paragraph, and layout styles.

PRINCIPLES: Easy, private & independent

The font size is...

```
                                                          69
                                                        ┌────┐
                                                        │    │
                                                        │    │
                                                        │    │
                                                        │    │
                                                        │    │
                                       5                │    │
                              2      ┌────┐              │    │
                           ─────     └────┘              └────┘
                        way too small  a little too small  an easy size to read
```

FIND CONTESTS

BACKGROUND

After reading through the instructions and skimming contests, the next stage in the experience involves finding important contests on the ballot. Earlier studies revealed that many voters do not vote by starting with the first contest and proceeding linearly through the ballot. Rather, voters start with the issues that are most important or familiar. From a design perspective, the most important feature of usability and accessibility during this stage is an intuitive ballot organization for easy wayfinding and navigation. This vote-by-mail ballot was designed with a strict and visual information hierarchy. To keep the design from becoming visually overwhelming, the hierarchy needs to be subtly differentiated and consistent.

FINDINGS

As voters searched for particular contests and candidates, they described the experience to interviewers. In one typical description, a voter explained her search process

"Looking for the judicial person. OK. I am opening the ballot and laying it flat. I quickly scan and, yes, here it is located. I see that Harper Samuel is the only person nominated, yes or no. Got it."

As voters navigated across the fronts and backs of multiple pages to find a particular contest, they noted that it took them a moment to find what they were looking for but rarely found it too difficult. As one voter put it, quite simply, "I could not find her on the first page so I had to look on the back, then the next page but it was easy to find."

Participants rated the experience of finding contests on a

quantitative scale from very hard to very easy. On average, voters rated these experiences toward the hard-end of the scale 7% of the time, toward the middle or "okay" section of the scale 36% of the time, and toward the easy end of the scale 58% of the time.
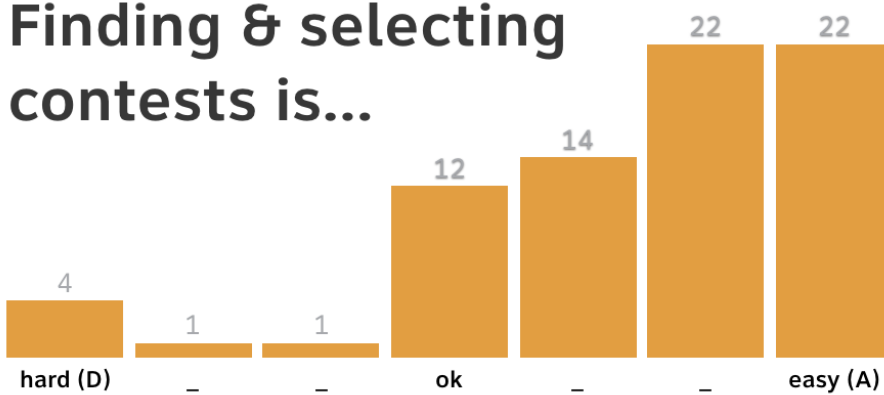
The quantitative analysis of disparities reveals which communities may have been struggling most with finding contests, giving the team some indication of how to focus efforts to improve the experience. Findings indicate that Spanish-speakers using the bilingual ballot had a harder time than speakers of other languages. Interestingly, this same disparity did not exist among Korean-speakers using the bilingual ballot. This suggests that bilingual ballots with two visually similar languages, in this case English and Spanish in general Latin alphanumeric character sets, may be more difficult to navigate. These ballots include twice as much content with two languages competing for visual attention throughout the ballot.

RECOMMENDATIONS

According to these findings, the vote-by-mail ballot is highly searchable for most voters. Those using a bilingual ballot with two Latin alphanumeric character sets, English and Spanish in this case, struggled most with navigation and wayfinding. To continue improving the vote-by-mail system, we recommend enhancing the visual distinction between English and target languages on bilingual ballots. This distinction might be achieved through font style or other subtle graphic indicators. Ultimately, however, the doubling of text content on bilingual ballots may offer higher linguistic comprehension but at the cost of reducing searchability.

TOPIC: Usability & accessibility of ballot navigation features

BIG QUESTION: How might we design a vote-by-mail system that allows voters to easily find the contests they care about?

WHAT WE'VE LEARNED: The new system was easy to navigate for most, but bilingual ballots with two Latin alphanumeric character sets were more difficult.

DESIGN DECISION: These learnings validate design decisions related to the search features of monolingual ballots as well as bilingual ballots with English and a symbolic character set. These same features will need to be amplified for bilingual ballots with Latin alphanumeric character sets.

PRINCIPLES: Easy, private & independent

Finding & selecting contests is...

hard (D)	_	_	ok	_	_	easy (A)
4	1	1	12	14	22	22

MARK SELECTIONS

| Open & orient | Read through | Find contests | **Mark selection** | Complete ballot | Pack-up for return | Mail valid ballot |

BACKGROUND

After finding important contests on the ballot, the next stage in the experience involves marking selections. Earlier studies of best practices from subject-matter experts revealed that circles, as opposed to squares or ovals, were easiest for voters to mark. These studies also revealed that ballot systems that allowed voters to read contest information and mark on the same page were more cognitively intuitive than those systems that involve a separate selections sheet, such as a Scranton style exam.

As such, this vote-by-mail ballot was designed with contest selection circles directly beneath each contest description. The circles were designed relatively larger than the current Scranton style system, yet small enough to be easy to fill, and spaced far enough from each other to minimize the chance of voters accidentally marking adjacent circles. All ballots and secrecy sleeves included instructions on how to mark the circle. These design decisions were aimed at enhancing usability in general and also accessibility for people with fine and gross motor impairments.

FINDINGS

As voters marked their ballots, they described the experience as being pretty straight-forward. As one voter described, "OK. All the contests are in order. It's easy to mark. The instructions are on the side, which helps to know how to mark. The separated boxes and lines are helpful. Bold text is helpful."

Experienced users of the current vote-by-mail system were surprised to find that they could mark the ballot directly, all making positive remarks about the change. As one woman put

it, "with the old way, the bubbles were so small that you had to be really careful. This is easy."

When they were asked to describe how they marked the selection circles, the vast majority (83%) filled the circle correctly. A smaller but meaningful percentage (17%) filled the circle incorrectly with either an x-mark, a check mark, or by circling the entire response.

Again, a quantitative analysis of differences between respondent communities reveals which voters may have been struggling most with marking selections. The experience was significantly more difficult for Spanish-speakers, people with less than a high school education, new voters, and people with cerebral palsy. These disparities did not appear for other communities of concern, including other language speakers and people with other motor or visual impairments. This suggests that some communities have less experience with marking selections by filling in a circle and that people with more extreme motor impairments may struggle with this mechanism of marking.

As is described in full in following sections, people who received a vote-by-mail ballot system with a secrecy sleeve were statistically more likely to mark their selections correctly. This implies that those who received the instructions on how to mark their ballot in two places were more successful at doing so.

RECOMMENDATIONS

Based on these findings, there are two recommendations for teaching voters how to mark their ballot. First, the ballot included instructions on how to mark the circle but no

TOPIC: Usability & accessibility of ballot marking features

BIG QUESTION: How might we design a vote-by-mail system that helps voters to correctly mark their selections?

WHAT WE'VE LEARNED: The vast majority (84%) of voters marked their ballot correctly. People with severe motor impairments found marking more difficult. People with less than a high school education, new voters, and Spanish speakers had more difficulty.

DESIGN DECISION: These findings validate design decisions related to marking style. They also indicate that some communities need further and repeated instruction on the ballot and secrecy sleeve.

PRINCIPLES: Easy, private & independent

Marking selection

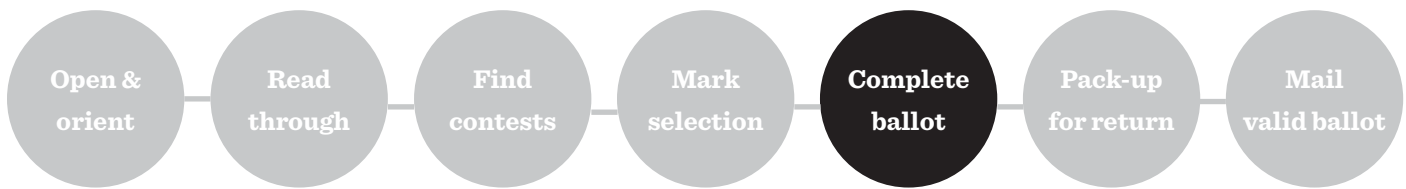| X	Checkmark	Circle selection	Fill in circle
4	8	1	63
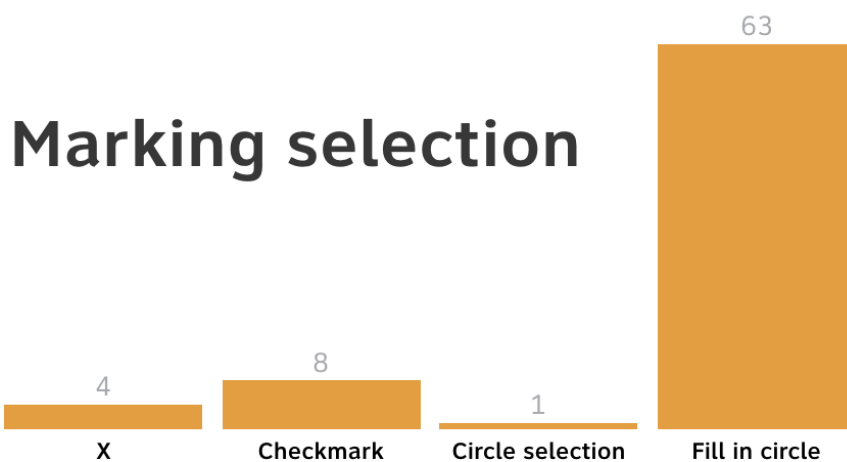
instructions on how **not** to mark the circle. We suggest adding a do-not-do line of instructions, showing voters that they should not check-mark, x-mark, or circle the response.

Second, the secrecy sleeve became a way to introduce voters to the new vote-by-mail experience and provided them with two opportunities to read instructions on how to mark their selections. As this study revealed, these instructions are worth repeating. We recommend enhancing the role of the secrecy sleeve as an on-ramping tool. As voters are on-ramped, they will learn how to (and how not to) mark their selections before they begin to interact with the ballot.

COMPLETE BALLOT

Open & orient — Read through — Find contests — Mark selection — **Complete ballot** — Pack-up for return — Mail valid ballot

BACKGROUND

Once voters get the rhythm of marking each selection, they work on completing the ballot. Past studies have revealed that voters do not necessarily vote on all contests, perhaps skipping contests on issues that are not important to them or that they do not feel well informed enough about to make a decision. They complete the ballot throughout a series of days and often with other people. Nevertheless, for the sake of testing, we asked participants to complete the entire ballot using a vote list. As described previously, the vote list method is an imperfect but practical way of assessing how well a voting system captures a voter's intended selections.

FINDINGS

In the analysis of accuracy, this study found that voters completed their ballots with an average 19.7 of 21 contests correct. The vast majority of participants who returned their ballots (80%) marked 20 or all 21 contests correctly. A small minority (4 people / 6%) marked ten or fewer contests correctly.

In the analysis of any disparities, we discovered two communities that struggled more with the completing the ballot accurately. People with motor or visual impairments made significantly more errors than people with no disabilities. People with less than a high school education made significantly more errors than people with a high school diploma or above. There were no disparities in the experience among people from different age, linguistic, or voting experience groups.

RECOMMENDATIONS

The high rates of accurate completion validate vote-by-mail design decisions. Disparities among people with disabilities and minimal formal education highlight the importance of education campaigns that provide further support to these communities of voters. Before using the new vote-by-mail system, voters were provided with no education, training, or additional instruction. Furthermore, voters with disabilities who might be accustomed to completing tasks like this with assistance from another person were asked to vote independently. Upon launching the new vote-by-mail system and new polling experience, it will be essential to provide educational support to these communities. This might also include encouraging people with more acute disabilities to vote independently through the fully accessible polling place experience.
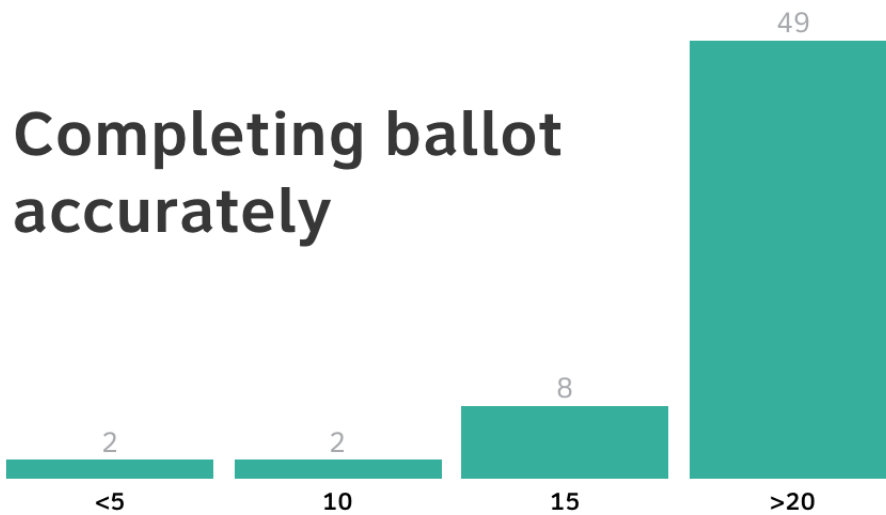
TOPIC: Ballot accuracy

BIG QUESTION: How might we design a vote-by-mail system that helps voters to accurately mark their ballots?
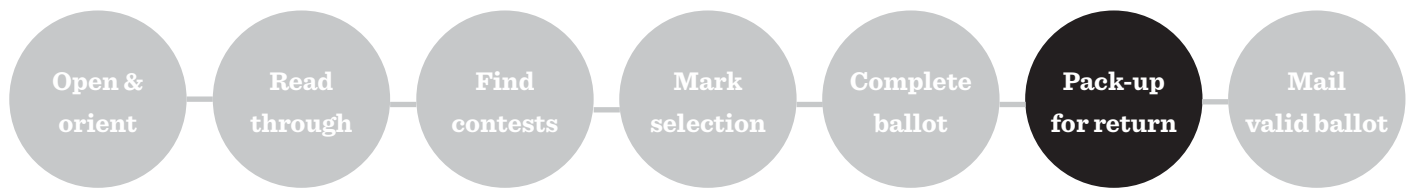
WHAT WE'VE LEARNED: On average, voters completed their ballots with 19.7 (out of 21) contests marked accurately. People with motor and visual impairments as well as people with minimal formal education had less accurate ballots.

DESIGN DECISION: These findings validate design decisions related to making selections on all contests. They also indicate that some communities need further educational support and may benefit from voting at polling places.

PRINCIPLES: Easy, private & independent

Completing ballot accurately

<5	10	15	>20
2	2	8	49

PACK-UP BALLOT

| Open & orient | Read through | Find contests | Mark selection | Complete ballot | **Pack-up for return** | Mail valid ballot |

BACKGROUND

After completing their ballots, voters have to fold the ballot into the secrecy sleeve (if included) and put everything into an official return envelope. Past studies provided some best practices but little specific guidance on how to make the task cognitively and physically easy. While the new ballot is large and easily readable, it still needs to fit into mailing and return envelopes that are small enough to meet the most cost-effective postage classification. We wanted to use this opportunity to prototype and assess the packing experience with voters. The prototype package delivered to voters included: a ballot nested within the secrecy sleeve (if included), a return envelop, and an elections booklet, all nested inside of an official mailing envelope. The package that voters were to return to elections operators included: a ballot nested within the secrecy sleeve (if included), all nested within the return envelope.

FINDINGS

As voters packed up their ballots, they narrated their experience aloud. The majority struggled with a tight fit. A typical narration included comments like this:

"I am folding it. I notice that it is so stiff, so its more challenging to fold. I am thinking that, given the size of the California ballot, a real ballot would be very large and thick. You have to fit all that in the envelope. And this is thick too. You are gonna need a bigger envelope."

Although voters were able to seal the envelope, it felt like "a tight fit" and some worried that it might not stay safely sealed in the mail.

While 74% found it easy to pack-up their ballot, 26% found it hard. Interestingly, all communities of voters had an equally hard or easy time with this task. Meaning, there were no significant disparities in the experience among people with motor impairments or visual impairments, with limited English proficiency, who are new to vote-by-mail, or from any other underserved communities.

RECOMMENDATIONS

Responses to the experience of packing up the ballot were neither poor nor excellent, inviting some recommendations for improvement. Specifically, the packing experience would be improved by a looser nesting system of ballot, sleeve, and envelope. Since we are already using the largest available return envelope for 3rd-class letter postage rates, and we would like to maintain ballot size to optimize readability, this suggests reducing the thickness of the paper stock used for both the ballot and the secrecy sleeve.
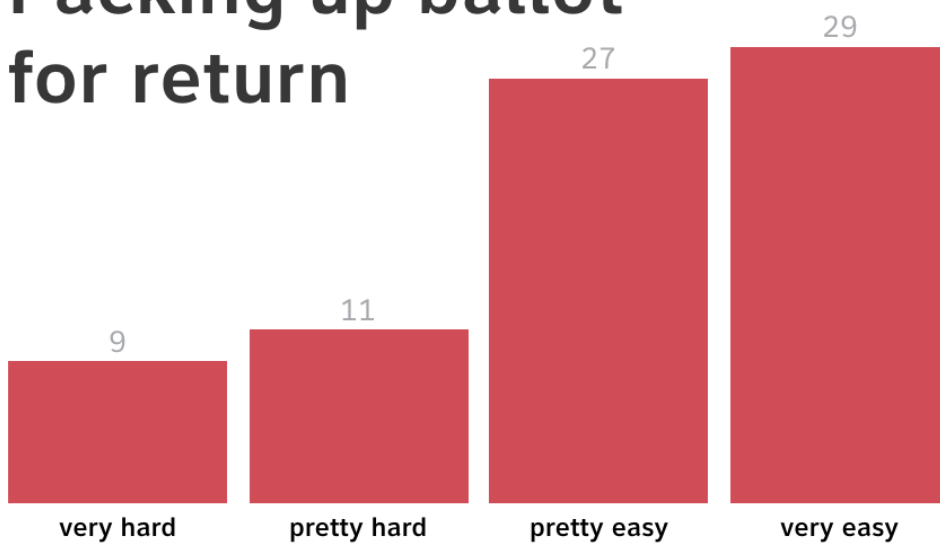
TOPIC: Packing-up

BIG QUESTION: How might we design a vote-by-mail system that is easy for voters to pack-up for return?

WHAT WE'VE LEARNED: 74% of participants found it easy to pack-up their ballots. However, a lot of voters expressed difficulty.
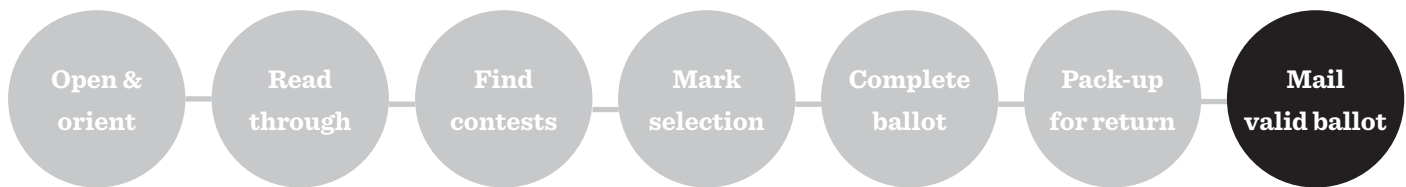
DESIGN DECISION: Use a large envelope and reduce the paper thickness of the ballot and secrecy sleeve.

PRINCIPLES: Easy, private ,independent, & cost-effective

Packing up ballot for return

very hard	pretty hard	pretty easy	very easy
9	11	27	29

MAIL A VALID BALLOT

| Open & orient | Read through | Find contests | Mark selection | Complete ballot | Pack-up for return | **Mail valid ballot** |

BACKGROUND

Once the ballot is packed-up, voters need to sign the envelope and then either postmark and mail or deposit it into an authorized drop box by 8pm on election day. People who are unable to sign the envelope, due to an illness or disability, need to include the signature of a witness and an authorized person returning the ballot. This task is not at all trivial because the entire ballot is invalid without a signature.

Given the current regulations around the design of vote-by-mail envelopes, there are a lot of constraints around any potential redesigns. As such, the prototype tested during this study is based on the existing Los Angeles County envelope, with few innovations.

FINDINGS

At the end of their phone interviews, researchers asked voters to prepare the ballot to be returned, just as they might do for a normal election. Instead of adding postage and putting the envelope directly in the mail, however, researchers instructed them to place it in a prepaid envelope addressed to our team at LAC RR/CC. Once these packets arrived, the team assessed the number of ballots that would be considered valid and submittable. The study found that 67% of the returned ballots were valid and 33% were invalid. Among those that were invalid, all were due to voters failing to sign the envelope in the right signature box. Most voters neglected to sign at all and a few signed only in the witness box.

Voters described their confusion at this point in the experience, making comments like "I am reading the instructions but I don't understand the witness signature part. I am confused." Typical of this confusion, another voter asked "I put in my address. And my name. The witness, is that applicable?"

Some groups of voters struggled more than others. People of color, people with motor impairments, and people who had never used Los Angeles County's vote-by-mail were significantly more likely to submit an invalid ballot.

RECOMMENDATIONS

These findings suggest a need to improve the usability and accessibility of this critical step. However, strict regulations provide little room to innovate. We recommend that the team seek best-in-class examples from other municipalities, looking specifically for ways to make the most commonly used signature box more apparent. Instructions and educational efforts should focus on: 1. Providing clarity on how to sign the envelope for people who are able, 2. For people who are not able, who can be an "authorized person" and official "witness." The envelope is too small to include much instruction, so most of these instructions will have to be provided elsewhere.

TOPIC:	Mailing a valid ballot
BIG QUESTION:	How might we design a vote-by-mail system that is easy to sign and mail?
WHAT WE'VE LEARNED:	Among the voters who returned their ballots, 67% submitted a valid ballot. Many voters did not understand where to sign the return envelope. People of color and new voters struggled more than others.
DESIGN DECISION:	Make subtle revisions to the envelope to make the principle signature box more prominent. Provide more instruction on where to sign, both for able and unable voters.
PRINCIPLES:	Easy, private & independent

Mailing a valid ballot

invalid — 20
valid — 41
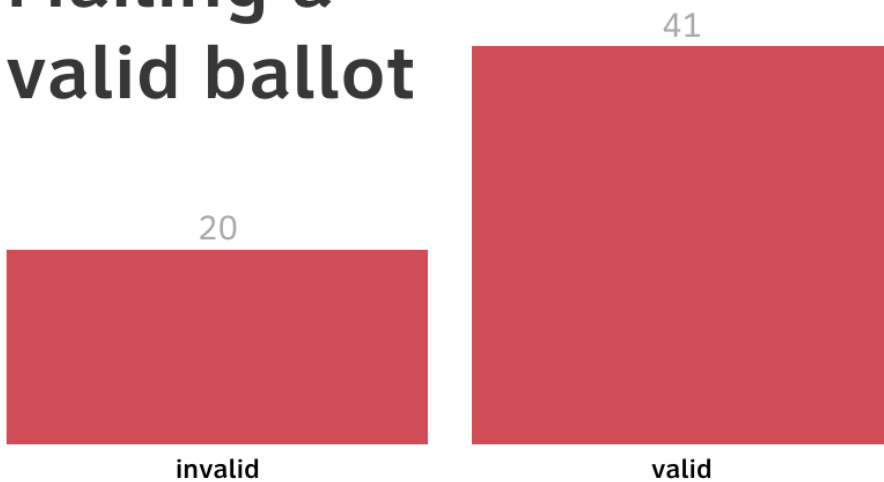
BALLOT SIZE & THE VOTE-BY-MAIL EXPERIENCE

BACKGROUND

Los Angeles County currently uses a vote-by-mail ballot with relatively small dimensions. This size is enabled, in part, by separating the Scranton-style selection sheet from the contest information booklet. Early testing revealed that a two-part system, like this, was cognitively overwhelming for most voters and mistakes in marking the wrong selections were easy to make. Earlier studies also revealed that systems that included many smaller ballot pages, which the IDEO team called "tiles," were problematic for the contexts in which voters would likely be making selections. Many small pages would easily get mixed up with others' ballot pages in social situations and whole pages were likely to get lost as voters completed the ballot in many places, across many days. Once these incomplete ballots arrive at the elections operations center, it is impossible for administrators to tell whether the ballot pages were missing on purpose or on accident. So this is likely a situation that has long contributed to lost votes.

Although previous studies encouraged the design team to consider large ballot pages, it was difficult to determine how large. Larger ballots might also involve other operational and budgetary concerns. From a user experience perspective, the design team was concerned that bigger ballot pages might be difficult to handle by people with motor impairments and might feel indiscreet for people concerned about privacy.

For these reasons and others, this study randomized among voters, so that roughly half would receive the smaller ballot (8 x 11 inches) and half would receive the larger ballot (10.5 x 17 inches). The study was double-blind, meaning that neither the voter nor the interviewer knew which ballot was delivered to participants. A numeric packet identifier was used so that data analysts could determine whether a particular voter was in the large or small ballot group after the interview.

An initial analysis revealed that the two groups were demographically comparable, which is the goal of randomization. This allows us to be more confident that the differences are due to the large/small ballot experience, not just because of demographic differences between the groups.

FINDINGS

A comparative statistical analysis provided insights into any differences in the vote-by-mail experience between those receiving the smaller versus larger ballot. Quite simply, there were no statistically significant differences in the experience. Specifically, some parts of experience that we might have assumed would be different, were not. For example, both groups had similarly positive responses to the ballot's readability, navigability, and completability. Both groups had a similarly difficult time packing the ballot and signing the envelope. Both groups felt similarly about the privacy of the experience.

TOPIC:	Ballot size
BIG QUESTION:	How does ballot size impact the vote-by-mail experience?
WHAT WE'VE LEARNED:	There were no significant differences in the experience between voters who used the smaller versus the larger ballot.
DESIGN DECISION:	Encourage the use of the larger ballot size, knowing that voters will likely have an equally positive experience while managing fewer ballot pages.
PRINCIPLES:	Easy, private & independent

RECOMMENDATIONS

These findings suggest that both ballot sizes are equally acceptable to voters. Choosing between the larger or smaller ballot might, therefore, be primarily driven by operational and budgetary concerns. It is important to note that, for this simulated 21-contest election, the larger and smaller ballot had the same number of total pages. For those elections that involve more contests, the larger ballot size might be more appropriate because it would involve fewer ballot pages. Again, previous studies provided some evidence that fewer pages are preferable. Elections operators can make the determination to use these larger ballots when necessary, knowing that the user experience of reading, navigating, and completing the ballot is likely to be equally positive.

SECRECY SLEEVE & THE VOTE-BY-MAIL EXPERIENCE

BACKGROUND

The new vote-by-mail system will not, from a regulatory perspective, require a secrecy sleeve. However, the design team was concerned that experienced voters may still associate the sleeve with anonymity and privacy, responding negatively to any design that did not include it. On the other hand, using the sleeve adds another step to the user experience, perhaps adding unnecessary complexity to the process of packing and mailing the ballot. Including the sleeve also adds production and postage cost. This study was the first opportunity to gain insight into the impact of the secrecy sleeve on the vote-by-mail experience, providing further evidence toward including or excluding it.

This study randomized among voters, so that roughly half would receive the secrecy sleeve and half would not. Those who received the secrecy sleeve would encounter it upon opening the official ballot envelope. The ballot was nested inside the secrecy sleeve, so voters had to handle it in order to access the ballot and begin making selections. The sleeve included some minimal orientation information and instructions.

As with the ballot size randomization, participants were randomized to receive or not receive the secrecy sleeve and interviewers were blinded to grouping. Initial analysis, again, revealed that the two groups were demographically comparable.

FINDINGS

A comparative statistical analysis provided insights into any differences in the vote-by-mail experience between those who received the secrecy sleeve and those who did not. Those who received the sleeve were significantly more likely to correctly mark their selections, mail a valid ballot, and feel that the experience was adequately anonymous. These findings suggest that the sleeve provided more than just secrecy, but also orientation and guidance.

RECOMMENDATIONS

These findings suggest that the secrecy sleeve enhanced the vote-by-mail experience in several important ways. The recommendation, therefore, is to include the sleeve as a tool for improving perceived privacy and anonymity and as a tool for on-ramping voters. The next design revision might enhance the sleeves role in on-ramping, providing more detailed instructions and guidance to voters. It might also leverage thinner paper stock to enable easier packing of the ballot for mailing.

TOPIC: Secrecy sleeve

BIG QUESTION: How does the secrecy sleeve impact the vote-by-mail experience?

WHAT WE'VE LEARNED: Voters who received a secrecy sleeve were more likely to mark their ballot correctly, return a valid ballot, and feel sure of their anonymity.

DESIGN DECISION: Include the secrecy sleeve as a tool for on-ramping and enhancing perceived privacy.

PRINCIPLES: Easy, private & independent

APPENDIX:
DATA COLLECTION
INSTRUMENTS

Exercises

Participant Information

Fill out before the call

First and last name	
Language group	
Phone number	

Greeting

Hello, my name is _____ (your name) and I am calling from the LA County Registrar-Recorder's office. I am calling for _____ (participant's name).

[Confirm participant is on the phone]

Great. Hello! We scheduled this call to chat with you about the new vote-by-mail ballot. Is this still a good time to talk for 30-45 minutes?

[Confirm availability. If not available, reschedule for next 1-2 days]

Thanks. We really appreciate you taking the time today. I am going to walk you through a few activities and get your thoughts about the new ballot. But, first, so you have a pen or pencil ready?

[Confirm pen or pencil]

Most importantly, did you receive your packet in the mail from us?

[Confirm receipt of packet. If not, reschedule for next 2-3 days & express mail today]

Introduce the Packet

Great. If you haven't already, please open the packet up. You will notice a few items inside.

1. Target gift card
2. A piece of paper that says "vote list" on the top
3. A vote-by-mail official envelope that says "Do not open until your appointment."
4. A manila envelope with return postage on it.

Do you have everything in the packet?

◯ Yes

◯ No [If no, send missing materials immediately]

Consent

34

The Target gift card is yours to keep. This is a small thank you for your time today. It is yours to keep, even if you decide that you do not want to participate.

Before we get started, I want to discuss confidentiality and consent. Participation in this experience is completely voluntary. If you would like to stop, we can do that at any time and you can skip any question that you do not want to answer. I also want you to know that your name and contact information will be kept confidential. We will not share this with anyone outside our project team for any reason. We will be writing notes as you describe your experience, taking down your ideas and feedback. We are not recording this session in any other way. If you choose to participate, it should take about 30 minutes.

Do you consent to participate?

○ Yes

○ No [If no, conclude this interview immediately]

Start VBM Activities

Ok, let's get started. Please find the vote-by-mail envelope, again it is the one that says "Do not open until your phone appointment" on the outside. You can go ahead and open it now. Take everything out and look at the different parts and pages. I would like to know about your first impressions. What are the first words that come to mind when you see it? Just right off the top of your head.

[ ]

How official does it look to you? Is it...

○ ...really official looking,

○ a little official looking,

○ a little unofficial looking, or

○ very unofficial looking?

Let's try something out. Let's pretend that you just talked with a trusted friend about one of the judges running for office, Harper Samuel. You've decided to vote for her in the Associate Justice of the Supreme Court contest. Find this contest and vote for her, Harper Samuel.

As you do it, just talk out loud so that I can hear what you are doing and thinking.

[Write, in detail, what the voter is doing and thinking.]

[ ]

How easy or hard was it to find the Harper Samuel contest? Was it...

○ ...very hard,

○ a little hard,

○ pretty easy, or

○ very easy?

People have all sorts of different ways to mark what they are voting for. What did you do to mark your vote for Harper Samuel?

○ X on the circle.

○ Check mark on the circle.

○ Put a circle the entire selection.

○ Filled in the circle.

Now let's try this. You did some research on state measure 46, about drug and alcohol testing of doctors. You decided to vote "Yes" on this measure. Find this contest and vote "Yes."

Again, just talk out loud so that I can hear what you are doing and thinking.

[Write, in detail, what the voter is doing and thinking.]

Tell me how easy or hard was it to find this measure? This time, was it...

○ ...very hard,

○ a little hard,

○ pretty easy, or

○ very easy?

These page timer metrics will not be displayed to the recipient.
First Click: *0 seconds*
Last Click: *0 seconds*
#QuestionText, TimingPageSubmit#: *0 seconds*
#QuestionText, TimingClickCount#: *0 clicks*

0 0 0 0 0 0

Ok, now let's try another exercise together. Let's say that over the past week, you finished all of your research and you put together a list of everything you want to vote for. Find the Vote List in your packet. Go through the ballot and mark all of the selections that are on this list. As you go, just talk out loud so that I can hear what you are thinking and doing.

[Describe, in detail, what the voter is doing and thinking.]

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Nice work! Now that we finished the entire ballot, tell me more about what you think. Was the size of the text, the font size,...

○ ...way too small to read,

○ a little too small to read, or

○ an easy size to read?

We are still working on improving the ballot to make it easier to use. We will make a new version, based on your experience and ideas. So, we need to know which parts to spend more time on. What parts of the ballot would you change? Why?

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What parts would you want to keep the same in the next version and why?

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Now that the ballot is complete, lets get it ready to send in the mail. Please go through the process of packing it up and sending it back in. Talk us through how you might start to do this and think out loud as you go.

[Describe, in detail, what the voter is doing and thinking.]

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How hard or easy was it for you to pack up your ballot and prepare to send it? Was it...

○ ...very hard,

○ a little hard,

○ pretty easy, or

○ very easy?

How confident are you that this system would successfully record your votes during an election? Are you...

○ ...really confident,

○ pretty confident, or

○ not confident at all?

Some voters are concerned about your ballot being totally anonymous, so that no one at the ballot counting center can whose ballots is whose. How private is this vote-by-mail experience, in your opinion? Is it...

○ ...really private,

○ pretty private, or

○ not private at all?

What special equipment did you use to help you to read and fill out ballot, for example reading glasses or a magnifying glass?

[   ]

Can you please look on the back of the vote-by-mail return envelope. What is the 4-digit number on the back?

[   ]

Demographics

Ok! So we are almost at the end. I just have a few more questions about you before we finish up.

How old are you?

○ 18-24	○ 50-59
○ 25-29	○ 60-69
○ 30-39	○ 70-79
○ 40-49	○ 80+

What's your gender?

○ Male

○ Female

○ Other: _____

What is your race/ethnicity? (Select all that apply)

☐ Latino

☐ Asian

☐ Black or African American

☐ White or Caucasian

☐ Other:

☐ Other:

Let's talk about school. What is the highest level of school you finished?

○ No formal schooling

○ 1st to 8th grade

○ 9th to 12th grade

○ High school graduate (or equivalent GED)

○ Some college but no degree

○ Associates degree in college

○ Bachelor's degree in college

○ Master's degree (For example: MA, MS, MEng, MSW, MBA)

○ Graduate or Professional degree (For example: MD, PhD, JD)

I am going to read a few sentences and you tell me which best describes your current financial situation. We...

○ ...don't have money for basics, like food;

○ we sometimes don't have enough to pay our bills;

○ we live month-to-month, just getting by;

○ we have enough, but need to save more;

○ we have enough to live comfortably, and even save; or,

○ we have enough to live extremely comfortably and splurge.

○ prefer not to answer?

Which of these statements fits? When it comes to the phone that you use most, you...

○ ...use lots of apps and features;

○ use it mostly for the basics like calling and texting; or,

○ barely even use a phone to make calls?

Now let's try this one. When it comes to computers, you...

- ○ ...use them all day, every day;
- ○ use them a few times a week or so; or,
- ○ barely ever use them?

What language would you prefer to vote in?

- ○ English
- ○ Spanish
- ○ Korean
- ○ Chinese (traditional)
- ○ Japanese
- ○ Arabic
- ○ Khmer
- ○ Thai
- ○ Vietnamese
- ○ Filipino
- ○ Hindi
- ○ Russian
- ○ Other:
  [   ]

Do you have any conditions or disabilities that might make voting difficult for you? It could be anything from vision loss to learning disability to limited use of arms or legs. (Select all that apply)

☐ Blind	☐ Hearing loss or deafness
☐ Low vision	☐ Severe memory loss
☐ Arthritis or other joint pain	☐ Speech or language disorder
☐ Use wheelchair	☐ Prosthetic limb
☐ Use walker or cane	☐ Have a hard time reading (low literacy)
☐ Limited use of my arms	☐ Limited gross motor skills
☐ Learning disability, like ADD, dyslexia, or hyperactivity	☐ Limited fine motor skills
☐ Anxiety and/or depression	☐ Other: [ ]
☐ On the autism spectrum	☐ Other: [ ]

Have you ever voted in the USA?

- ○

○ Yes

○ No

Have you ever used the vote-by-mail or absentee ballot in Los Angeles County?

○ Yes

○ No

○ Not sure

What did you think of this new ballot, compared to the current vote-by-mail in LA County?

Great! That is it. We have just one last request for you. Would you please put your completed ballot packet in the extra manila envelope? It's the one with the return address and stamp on it. Can you put it in the mail today?

Again, this is not an unofficial ballot and has nothing to do with any real election. We will take what we learned from you today, though, and make sure that we make the best possible vote-by-mail system in the future. We cannot thank you enough for your help.

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IDEO, MARCH 2016

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(Alphabetical) Henry Balta of Los Angeles County Chief Information Office, Michael Byrne of Rice University, Joshua Franklin of the National Institute of Standards and Technology, Diane Cordry Golden of the Associations of Assistive Technology, Joseph Lorenzo Hall of the Center for Democracy and Technology, Brian J. Hancock of the U.S. Election Assistance Commission, Jared Marcotte of the Turnout, Whitney Quesenbery of the Center for Civic Design, Noel Runyan of Personal Data Systems, Rich Sanchez of the County of Los Angeles, Pamela W. Smith of Verified Voting Foundation, Charles Stewart III of Massachusetts Institute of Technology, and David Wagner of the University of California, Berkeley.