SECURE, ACCESSIBLE & FAIR ELECTIONS COMMISSION STATE OF GEORGIA The above-entitled SAFE Commission meeting was held before Mary K. McMahan, Certified Court Reporter, in and for the state of Georgia, commencing at 9:11 a.m. on August 30, 2018, in the Columbia County Exhibition Center, 212 Partnership Drive, Grovetown, Georgia 30813.

1	Transcript Legend
2	(sic) - Exactly as said.
3	(phonetic) - Exact spelling unknown.
4	Break in speech continuity.
5	Indicates halting speech, unfinished sentence
6	or omission of word(s) when reading.
7	Quoted material is typed as spoken.
8	
9	TABLE OF CONTENTS
10	PANELS: PAGE:
11	Voting Rights Panel10
12	Election Security Panel47
13	Voting Accessibility Panel84
14	Intergovernmental Coordination Panel116
15	
16	VENDOR DEMONSTRATIONS:
17	Clear Ballot144
18	Unisyn Voting Solutions173
19	Smartmatic
20	Election Systems & Software233
21	Hart InterCivic263
22	Dominion Voting294
23	Public Comments317
24	Tubile commends
25	Index354

PROCEEDINGS

1.3

1.5

SECRETARY KEMP: We've about got everybody settled here. Let me just welcome you this morning to our second meeting of the SAFE Commission. I'll just note for the record that it's August 30, 2018 and I want to certainly thank you all for being here this morning. It's great to see such good turnout and involvement in this as we work on this meeting for the Secure Accessible Fair Elections Commission here at the Columbia County Exhibition Center in Grovetown.

And just before we do the pledge and the invocation, I want to -- Co-chair Fleming is going to speak a little bit more in detail to this, but I just want to thank all of those in the facility -- Ms. Wells and others -- for helping coordinate this. Certainly Representative Fleming, I know Chairman Cross is here this morning, several members of the commission, a lot of public safety folks who are making sure that we have a good, safe meeting today.

So thank you all for your hard work. Mr. Chairman, we appreciate that.

If you would all rise, we're going to do the

pledge to start us off this morning.

(Pledge of allegiance)

SECRETARY KEMP: And if you'll pause with me just a minute, I'll say the invocation.

(Invocation)

1.3

1.5

SECRETARY KEMP: All right, again thank you all. You can be seated. I certainly want to thank the commission members for their commitment to serving on this panel as we move forward.

Again thanks to all that helped us have the ability to be here in this great facility this morning. And I'm looking forward to another great meeting today as our work continues to progress. I also want to thank all of those local elected officials that are here. I know we have many members of the legislature. If you guys would please stand.

Just thank you guys for being here and for your involvement. We have local elected officials. Would you please stand.

Doug, you guys stand up against. Local elected officials.

And then how about our local election superintendents, registrars, board members, and other people that are involved at the local

election level. Any of you guys here if you'll please stand. Thank you so much for what you do every day and for all the others that are representing different constituencies and groups from around the state.

1.3

1.5

I think if you took anything away from our last meeting, we had a very inclusive group. We want to hear from everyone as we move through the process. I know that we have people here from the Georgia Municipal Association.

Larry, thank you for being here.

I'm fairly certain we have folks from the Association of County Commissioners of Georgia that are here. There's Todd in the back.

So thank you guys for being here and we will continue to move forward.

This session that we're going to have this morning will be composed of four panels on voting rights, election security, voting accessibility, and intergovernmental coordination to discuss the vital considerations in play as we move forward on the replacement of our voting system.

My co-chair Representative Fleming, we thank you again, Representative, for your dedication to co-chairing this and for all your work. He will

be moderating the voting rights panel.

1.3

Dr. Wenke Lee, the co-executive director of the Georgia Tech Institute for Information

Security and Privacy will moderate our security -- election security panel.

Amy Howell, the assistant commissioner and general counsel for the Department of Behavioral Health and Developmental Disabilities will moderate the voting accessibility panel.

And then Nancy Boren who's the Muscogee

County Director of Elections and Voter

Registration will moderate the intergovernmental coordination panel.

You will see that we have a great lineup, truly impressive folks talking about important subject matters. And we appreciate all of you that have joined us for this today.

Now, our afternoon session has been well-noted. We're going to hear from the following vendors which is Clear Ballot, Unisyn Voting Solutions, Smartmatic, Election Systems & Software, Hart InterCivic, and Dominion Voting. We certainly look forward to their presentations and appreciate you all making your way to the meeting this morning.

And now I'm going to turn it over to

Representative Fleming and he will offer some

guidelines and logistics on the rest of the

meeting today. And thank you all again for being

here.

REPRESENTATIVE FLEMING: Good morning.

AUDIENCE: Good morning.

REPRESENTATIVE FLEMING: Thank you,

Mr. Secretary.

As Secretary Kemp mentioned, this beautiful facility was made available to us free of charge by my county commission.

And he also mentioned my chairman Brian

Cross is here with a couple of his fellow

commissioners: Trey Allen and our incoming

chairman in January Doug Duncan. We certainly do

appreciate all of the work that they did in

helping us set this up today. It's invaluable to

us.

My sheriff also, Clay Whittle, he has been invaluable in helping to set up all of the details for today's event. I want to publicly thank him as well.

Just some housekeeping measures. Commission members, thank y'all all for coming over. This

is our second meeting, as the secretary said.

We've got a full lineup today. I'm going to ask you that when you speak today -- and there will be, of course, many opportunities for that -- that the microphones that are on the table. When you see that green light on, that's a hot mic.

So if you don't want it to be green, then you press it and it'll turn off and you won't see any light. So remember that, but if you bring it to you, make sure it's green so that we can hear you.

1.3

1.5

We will have four panels this morning.

There will be portions of that where you as commission members will be allowed to ask questions, and we encourage you to do that, as well as vendors this afternoon. They're going to show us their wares.

I will mention also that at the conclusion of our meeting today, there will be a portion for public comment. We will be circulating during the day sign-up sheets. I see one moving around right over here so please feel free to sign up as we will take public comment, two minutes each person, towards the end of our session today.

Of course, before we launch into each panel

session today, we will provide a brief introduction of those participants that are in the panel process. Because there is a public comment portion to our meeting today, I would certainly welcome our public that is here, but I would ask you if you would hold your comments until that point. I think we have a good, civil crowd here today, so that's not going to be a problem.

1.3

Just some other little housekeeping measures, some of you may have noticed this when you came in, but there are restroom facilities right outside these two double doors. There is another hall on the other side behind you there with more restroom facilities in case these are full.

So with that in mind, thank you for being here today. We're going to get right to it. I'm going to ask the first members of our panel if they would come forward in these chairs right in front of me. I will introduce you and we'll switch to that mic over there and then we can start.

I also think I failed to mention, but I want to make sure that I do, we have a court reporter

here with us this morning who is taking down all of these proceedings. As you know, when two people talk at once, it's hard for you to understand. Can you imagine the court reporter trying to take down everything that's said? I've told y'all before that my dear wife is a court reporter and I have been trained not to talk over somebody else -- at least I think I've been trained -- when the court reporter is taking down what we've said. So if during the day, I mention that to you or remind you, I know that not everybody is not as used to being in a legal proceeding where everything is being taken down, but I'll certainly try and keep it straight so we have a good public record of all of the things that are said here today.

1

2

3

4

5

6

7

8

9

10

11

12

1.3

14

1.5

16

17

18

19

20

21

22

23

24

25

At this point, it is my pleasure to introduce our panelists for our first group to speak this morning, and as mentioned to our members of the commission, as we work through this, if you have a burning question just raise your hand up there, and I'll try to recognize you. And of course, as we moved through toward the end, we'll also try to make sure there's time for any questions for you.

The purpose of this panel is to provide information to the commission from a diverse group of experts in the field of voting rights as to what we should be considering regarding voting rights' perspective as we formulate a recommendation for our next voting system here in Georgia. This will also allow our commission members to be formulating questions they want to ask the vendors this afternoon when we have our demonstrations.

1.3

1.5

The panel today, this morning, is not meant to be a survey of the entire landscape of voting right issues. That's a big area. However, it is meant to be focused on the issues that are relevant to the work of this commission, which are really the ones that take place from the time the voter shows up to vote to the time he or she casts their ballot. And we have a distinguished group of panelists to take us through some of those issues this morning.

I'll introduce each of you, allow you to say a few introductory remarks, and I will ask some follow-up questions with the idea of getting our panelists to engage one another, and then we'll allow the commission members also to ask

questions.

1.3

1.5

First, to my far left, your far right, Sean Young with the ACLU. Sean is the legal director of the ACLU in Georgia. He's been actively involved in litigating cases around the country, challenging voter discrimination, identification requirements, cutbacks to early voting and same-day registration, and other attempts to make it harder to vote.

Prior to joining the ACLU, he was a judicial law clerk in the US Court of Appeals for the Seventh Circuit, and the US District Court for the Southern District of New York. He also served as associate to Skadden, Arps, Slate, Meagher & Flom LLP where he litigated a variety of pro-bono matters involving civil rights, fair housing, and racial justice issues.

He has published articles in the Yale

Journal of Health Policy, Law and Ethics and the

Florida Coastal Law Review. Sean is a graduate

of Yale Law School and Duke University.

Sean, welcome, and tell us a little bit about what's on your mind.

MR. YOUNG: Sure.

Members of the state commission, thank you

so much for giving the ACLU of Georgia an opportunity to speak about the impact of voting systems on voting rights this morning. We're especially dedicated to ensuring that voters from vulnerable populations and historically disenfranchised communities, like communities of color, are able to participate in our democracy. The manner of voting, of course, can have a direct impact on that participation.

1.3

1.5

So for that reason the ACLU of Georgia would love to make three concrete recommendations concerning any anticipated move to a paper ballot system.

The first is catching errors. Transitioning to a paper ballet system increases the rate of voter error. I would venture to say that's pretty understated. So there must be a system of automatically catching those errors before the ballot is cast. The most common error, as most of you've heard about in the last session, is overvoting, when a voter votes for more than one candidate in an office that can only have one candidate. The commission is well aware that this problem was rampant through the 2000 elections. One example of a system that can

catch such errors is one that requires voters to run their paper ballots through a scanner that will spit it back out if there are errors, which will then allow you to cast a fresh ballot.

1.3

1.5

I was a poll worker in New York in a past life and that's the system they had. And it's unfortunate to say, but there were a number of folks that came back to me needing to cast such ballots. Partly that was because the New York ballot design was a nightmare, and I hope Georgia doesn't repeat that. But we did see a fair number of errors. It's really important to have that safeguard.

The second recommendation is that

transparency and open-source software. Now, I

imagine this recommendation is not going to be

very popular with our vendors, but election

systems should not be a black box. That means

that whatever system is adopted by the

commission, any source code that's involved and

any electronic counting procedure should be

open-source and not proprietary. It shouldn't be

a trade secret which means that the public should

have the ability to inspect it.

Any kind of voting system, whether

electronic or paper-based, must be transparent in order to determine whether a procedure that seems to be facially neutral on its face may actually violate the Voting Rights Act or other laws by having a disserted act of vulnerable computer needs. And I don't think anyone in this room wants to wait until litigation in order for that black box to have to be opened. If it's opened up-front, that would resolve a lot of issues.

1.3

1.5

The last recommendation is increased access. To switch to a paper ballot system, we think you have to increase the number of check-in stations, of voting stations, and perhaps even polling places because there will be guaranteed longer lines at the polls when voters need to recast erroneous ballots and especially in the short term as coworkers and voters adjust to the new system. Longer lines almost invariably disproportionately impact lower-income communities because many do not have the flexible working schedules or childcare arrangements necessary to wait any longer than 30 minutes to cast a ballot.

And to that end, we strongly urge the state commission to also recommend increase -- or the

existence of and increase state-level funding for the increased number of check-in stations and polling places that are necessary to accommodate this transition. This assures that voter access isn't left to the whims of a hundred and fifty-nine different counties, which would be terribly unfair to rural communities in particular who may be budget-strapped.

1.3

1.5

And so in sum, the ACLU Georgia recommends that any transition to a paper balloting system, including a system for catching voter errors, increase number of voting stations or polling places and transparent and open-source software. Implementing these measures will help ensure that the most vulnerable and historically disenfranchised among us can fully participate in our democracy.

REPRESENTATIVE FLEMING: Thank you, Sean.

Next on our panel, I have the pleasure of introducing Elizabeth McNamara of the League of Women Voters. Elizabeth is the immediate past president of the League of Women Voters. She joined the League of Women Voters in 1983 and has served in some leadership roles at the local, state, and national levels including president of

the League of Women Voters of DeKalb County, president of the League of Women Voters of Georgia, and from 2010 to 2016 was president of the national league. During her tenure as national president of the League of Women Voters, engaged in national campaigns to protect and empower the vote of every American eligible to vote.

1.3

1.5

Professionally, Elizabeth is an attorney in the state of Georgia. She received her bachelor's and juris doctorate degree from Emory University in Atlanta. She serves as a fellow -- she served as a fellow prosecutor in DeKalb County, Georgia from 1986 to 2010.

Since 2004, Elizabeth has volunteered with the Georgia High School Mock Trial Program as an attorney coach at her local public high school.

Elizabeth, great to have you this morning. We appreciate you being here. We'd love to hear from you.

MS. MCNAMARA: Thank you. Well, thank you for including the League of Women Voters on this particular voting rights panel. For any of you who are not familiar with the league, the League of Women Voters was founded nearly 100 years ago

by the women who fought so hard for voting rights for women.

1.3

1.5

Since 1920, we've been defending our democracy by empowering voters so that everyone has the right, the desire, the knowledge, the confidence to participate. And of course the most important way, there is no more important way for Georgia citizens to participate than by voting.

The League of Women Voters has been actively engaged with elected officials and with election officials at every level of government to ensure that our election systems are free, fair, and accessible to every eligible voter. And we've done that throughout the country and throughout our history.

The league helped draft the Help America

Vote Act in 2002. The League, I want to mention

also, was actively involved in the passage of the

National Voter Registration Act in the early

1990's and of course it supported the Voting

Rights Act as well, particularly recently with

all of the changes the courts have made to that

particular piece of legislation. In 2002, we

worked closely with civil rights coalitions in

developing amendments and lobbying for key positions.

1.3

1.5

We continue to support the Election

Assistance Commission. We appreciate their

standard best practices and the fact that they're

sharing election administrators around the

country, which we think is extremely important.

The League of Women Voters of Georgia was actively involved when the current voting system was designed and created. Our members work closely with election officials in every election and many of our members serve as poll workers. So we are intimately familiar with the current system in Georgia, how it works, and we have supported that system since it was implemented 16 years ago.

The league supports an election system that is secure, accurate, recountable, accessible, and transparent. For that reason, we support a system that doesn't include voters verifying paper ballots.

We support risk-limiting audits using statistical principles to certify election results. We support a system that treats all voters equally, providing for voters with

disabilities, and ensuring language accessibility and while ensuring the privacy of each voter's ballot. Protecting voting rights at the polls means protecting voter access and ensuring that every vote counts.

1.3

1.5

A voting system is about more than simply the device upon which we cast our ballots, and ensuring equal access and accurate results is about more than what voters experience at the polling location. The league is focused on the entire system and so it's not prepared to be too prescriptive as to what technology is employed in the new system so long as it is secure, accurate, recountable, accessible, and transparent.

Creating a system that significantly limits our options moving forward simply for the sake of creating a voter-verified paper ballot strikes us as dangerous and the Georgia league does not support such a move.

The league also supports a voting system
that is uniform throughout the state and funded
by the state. We see this as a matter of
protecting voting rights by protecting voter
access and ensuring accuracy. Uniform
procedures, protocols, and trainings are critical

1 to protecting the vote.

2

3

4

5

6

7

8

9

10

11

12

1.3

14

15

16

17

18

19

20

21

22

23

24

25

So I want to thank you for this opportunity and look forward to the discussion this morning.

REPRESENTATIVE FLEMING: Thank you, Elizabeth. We appreciate that.

Our next panel member that I have the pleasure of introducing is Anne Lewis with the law firm of Strickland, Brockington, and Lewis. Anne is a partner of the Atlanta law firm I just mentioned. Her practice involves election-related litigation including redistricting, Voting Rights Act cases, election contests, and candidate qualifying challenges. She has served as counsel in elections to the Georgia general assembly and as a special attorney general for the state of Georgia in election litigation. She is the general counsel to the Georgia Republican Party, President of the Atlanta Lawyers Chapter of the Federalist Society, a member of the State Bar of Georgia's Indigent Defense Committee and Post-conviction Relief Committee.

She received her undergraduate degree from the University of Georgia -- go Dawgs -- and her law degree from Georgia State University where

she was the managing editor of the Georgia State Law Review.

I always wish that I was smart enough to be a lawyer, Anne, so it's good to sit next to you up here anyway. But we appreciate you being with us today and we'd love to hear from you.

MS. LEWIS: From here?

REPRESENTATIVE FLEMING: Well, will that one stretch?

MS. LEWIS: Yes.

1.3

REPRESENTATIVE FLEMING: When you get elected to office, they teach you to hog the mic if possible and I want to make sure I can do that. There we go. Thank you.

MS. LEWIS: Well, thank you for having me today. I want to say -- just a point of personal privilege at the beginning, I want to thank my sister Mary who, for a variety of circumstances, had to serve as my chauffeur today. So thank you to Mary for being here and she's here to learn a lot about the voting system too.

As I look around at the commission, it's certainly a great group of people with a lot of knowledge. I'm looking at Lynn Bailey who for many years has been my go-to person about my very

weird questions about: Okay, what do you do about this? I think something came up about this about 20 years ago. And Lynn always says: Oh, yeah, yeah, you know what that was. That was a particular precinct.

1.3

So I appreciate all of the help I've gotten from you over the years. If you look at our backgrounds, you might think that we have a lot of differences, and maybe we do philosophically, but I think with respect to lawyers who practice in a voting arena, we all are dedicated to one purpose which is that every eligible voter gets to vote and it's not hard to vote, it's not hard to get on the list to vote, and if you have a problem, it's not hard to figure out how to resolve the problem.

When we started talking about this panel, we were originally talking about voting rights and so all of you are familiar with the capital VR, Voting Rights Act which generally speaking involves Section 2, minority vote dilution, and for a long time involved Section 5, the preclearance provision. We're not really talking so much about that today.

I think with respect to the voting machines,

the instances of minority vote dilution, which is really the focus of the Voting Rights Act now does not come up as much as an issue related to districting, maybe particular voting laws, but I want to talk a little bit more about the small V and small R, Voting Rights.

1.3

1.5

Like I said, I think that any voting system that you consider has to consider from the beginning to the middle to the end. And what the overarching purpose is is to make sure that people get to vote and that their vote is cast correctly, and frankly that they are confident that that happens.

You may be surprised to hear a lawyer say:
But the object here is collaboration. It's not
litigation because litigation evolves from issues
like: Did we think about this before we
installed this voting machine or did we think
about this before we changed this voting law? I
mean, everybody's paying for it. You're paying
on both sides of the ledger. Somebody has to pay
the state and probably outside lawyers to defend
the law. If the plaintiffs win, then plaintiffs
get their attorneys' fees, and as the secretary
of state is well aware, he's the lucky winner

being named as the defendant in every case and having to come up with the money to resolve litigation.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

And so I think that what we want to see is a system that (a) is going to be a system that contemplates what is the registration mechanism. We have a great voter registration system in Georgia. We're not looking to change the voter registration system but you have to have the electronic polls books, which is garbage in, garbage out, right? We have to make sure that what goes in is actually who's supposed to be voting. And then when people come in, they need to show up on the list. If they don't show up on the list, they need to know what to do about that so that whether you pick to vote absentee, early, or at the polls, when you get there, it's not a problem for you to vote so long as you're eligible to vote.

I think that any voting system has to consider how do we troubleshoot on the spot. I know when we first installed the voting machines back in 2002 -- and some of you may remember this -- the biggest complaint on that election day was: I voted for Sonny Perdue and the

machine said I voted for Roy Barnes. Or I voted for Roy Barnes and the machine said I voted for Sonny Perdue. Well, there's no way to sort of go back and figure out what happened there. So a lot of it is training for voters to not leave the machine. Until there is a resolution, I think any system is going to have to contemplate what is it that we do with problems.

1.3

1.5

And then finally, at the end of the process, if there is a problem -- so a big problem is a recount on contests. A smaller problem is something that doesn't rise to that level but is going to have to be followed up on. What system is going to allow us to go back and find out -- and along the lines of what Sean was talking about, what is it, how do we -- do we understand how the system works so that when you have to go back and find the evidence, do we know how to get that and are we confident that we're getting everything that we need?

I wanted to address real quick something that Sean said. I think that, yes, you do want to make sure that any system adequately "staffs," for a lack of a better word, the precinct. Well, we also have to live within our means. I mean,

we have to have a system that works, but it may not be the most expensive system that has the most bells and whistles. And I'm not trying to, you know, disparage anybody's system out there that might have every bell and whistle, but I do think that that has to be a consideration when the state is thinking of spending so much money on something new. And I agree -- I think everybody agrees it's time for something new.

1.3

1.5

REPRESENTATIVE FLEMING: Thank you, Anne.

And I want to go ahead and mention -- or start us off by talking about -- I think Sean mentioned this and so did Anne. When we think about voting machines, our mind immediately goes to particular laypersons that don't deal with elections every day: How do I touch that thing and how does it record my vote?

But there's something very important that happens before that. The voter shows up at the polls and they have to be allowed the privilege of going into it and touching that machine because that's where they're registered. And in my polling precinct, the ladies that sit there tell me whether or not I'm registered and in the right place.

So this -- you called it a poll --

MS. LEWIS: Poll book.

1.3

1.5

REPRESENTATIVE FLEMING: Poll book. Talk about that for a second and we'll pass the mic around, the part of the machinery, the system we're buying -- because you have to make sure when people arrive there, it's been set up well so that we can tell them that they're in the right place. Anne?

MS. LEWIS: So for those of you who have been, you know, working in or being voters for a long time, like me -- I mean, originally the books were kind of giant things that were delivered to the precincts probably the night before the election had happened, everyone that was eligible to vote -- or whoever was listed as a registered voter in that precinct and if there were any problems that were noted in some sort of room.

And now we have the -- as you will recognize, when you go in and vote, your driver's license is scanned in. And so the book is now electronic. But we were talking when we were talking about this panel about how do we -- because I think for so long we sort of thought

about, okay, well, that's one part of the system, then the voting machine's another part of the system, and the counting is another part of the system, and it really has to all work together.

So as Barry said, when you go in, you're eligible to vote there, your name does appear on the list -- and if it doesn't appear on the list, then how are we going to fix that quickly so that (a) your time doesn't run out before the day is over or (b) you just don't get so frustrated that you just leave.

REPRESENTATIVE FLEMING: Any other comments or any of the others want to respond to that issue? The poll book that would make sure that when they walk in to vote in the system, it says: We know you're in the right place.

MS. MCNAMARA: Yeah, absolutely. And, you know, I realize that the -- I think we all realize that the voter registration system is not necessarily within the commission's purview, but nevertheless it has to work with whatever system gets designed. And I think perhaps the focus that we keep talking about is the design of the voting machines.

Really I think everybody on the commission

understands that we're talking about redesigning a voting system and that that system has to include considerations on the voter registration system.

1.3

1.5

The league supports an online voter registration system. In this day and age, we're talking about eliminating human error. The best way to do that is to have the voter enter in their own data and eliminate transcription errors. We'd also have the ability to communicate with the secretary of state's office because when we were resolving problems out of those big books and we had to get on the phone and the frustrations with having to get through voters waiting absolutely has to be avoided.

So how you, you know -- securing that voter registration system which needs to remain online, it needs to be -- it needs to communicate with all polling systems, it has got to be part of the design of the system and understanding how that's going to work at polling locations.

REPRESENTATIVE FLEMING: Sean, if we get to the point -- and you commented on that and I want you to touch on this also. If one walks into the polling site and, for whatever reason, you're not

in the poll book and they can't tell you where else to go, we have something in Georgia we call a provisional ballot. And that means that you get to vote and then you can come back later and straighten it out for three days. Touch on that as well --

MR. YOUNG: Yeah.

1.3

1.5

REPRESENTATIVE FLEMING: -- and what the new system might entail or keep the same about the provisional ballot.

MR. YOUNG: That's exactly where I was headed. Provisional ballots -- and they have some version of this in every state, the principal reason for the use is if your name doesn't appear in the poll book when you show up to vote.

As you think about what system you're going to design, I wanted you to have the provisional-ballot fear linger over your heads because no one likes them. They're confusing. They reduce voter confidence. Poll workers don't like dealing with them, election officials don't like dealing with them. They're confusing. They -- there's very little confidence that your vote is going to be counted because how the

registrar is to determine on the back end whether you're really a registered voter is, frankly, from experience, a kind of ad-hoc process. I may be wrong and I don't mean to -- I haven't surveyed all hundred and fifty-nine counties and I'm not saying there's a better way because it is kind of an ad-hoc issue.

And so really making sure that people who register to vote actually show up on the polling book, accounting for potential discrepancies in, you know, someone putting drive instead of avenue or accounting for that small margin of error is so critically important because otherwise you result in provisional ballots, and I know that Georgia has one of the fewest rates of provisional balloting in the country and it would be great to keep it that way.

REPRESENTATIVE FLEMING: So, Sean, this whole idea of provisional ballots is kind of like a floatation device on the airplane seat that you hope you never have to use --

MR. YOUNG: Yeah.

1.3

1.5

REPRESENTATIVE FLEMING: -- but it's there for emergencies and if you ever have to use it, people have a hard time with it sometimes, but we

have to figure out how to work through that, right?

MR. YOUNG: Absolutely.

1.3

1.5

REPRESENTATIVE FLEMING: Let's talk about something that needs more time for people to work out a problem and it's becoming more popular in the state when you look at the numbers and that's early voting.

So right now -- and then, Anne, talk about this for a second -- when I walk into the voting booth, I vote on a touchscreen. When I walk in to early vote, I think I can do the same thing unless I ask for an absentee ballot. Our new system is going to have to take into account both of those things: absentee ballots and early votes. What are your thoughts about that?

MS. LEWIS: Well -- and real quick before I answer that, I want to say that I am a proponent of provisional ballots because I do think that you shouldn't -- the answer should not be that you don't get to vote. There should be some way -- and in Georgia, it is very transparent. You can see what was voted as a provisional ballot and what was counted.

Now, can you sit there with the election

officials as they determine that? I guess you could if you wanted to, but there are specific instances we know why they will or will not count. So I would not be for having fewer provisional -- I agree with Sean. We don't have a lot of provisional ballots, but I think that safety measure is always needed.

1.3

1.5

So back to your question about early voting versus absentee voting. So, you know, when we first started early voting, we had a constrained period and we opened it up more. Then we found out, hey, look, people are not coming. We are having these for six weeks and they're not showing up. And we haven't found that the overall voter turnout has increased because of the early voting. I think people who are going to vote, they either decide they're going to go to the polling place on election day or they're going to early vote, but I don't think people say: Oh, now I can early vote, I guess I'll vote when I used to not vote.

So in terms of deciding, which way do you want to do it? So do you want to -- you decide:

I want to vote at home, I want to be able to look on the computer and spend 25 hours researching

all the candidates before I cast my ballot. Well then you want to mail in an absentee ballot, saying you can do that. You want to just make sure you vote and don't miss election day because work or something requires you to be out of town on that Tuesday, then you're going to go and -- and I always get this wrong. I think the period, the one week before is called advance voting and maybe the two weeks before are called early voting, but in any event, you can vote on the machine for three weeks before the election.

1.3

1.5

So that's just like being in the polling place or you can go to the polling place. I think a lot of people have found that: Oh, I'll just go to the polling place because there's nobody there.

REPRESENTATIVE FLEMING: And whatever kind of system we adopt, we would have to account for those two things. Well, really three things: The provisional vote, then we have now the early voting, and the absentee voting.

Sean, you may have touched on this
earlier -- and I don't know, maybe it was
Elizabeth -- you talked about Georgia has very
low residual votes. And we're about to wrap this

up. I'm getting close to the end of our
discussion, but you said, and I think that was
very good, in residual votes. Explain that in a
little more detail and tell us why the current
system we have has been good at keeping that low.

MR. YOUNG: Residual votes, at least the way
I understand them, are votes that don't end up
being counted because there's an error. Usually,

I understand them, are votes that don't end up being counted because there's an error. Usually, again, overvoting, someone voting for more than one candidate or just otherwise marking the ballot in a way that can't be logically correct.

Georgia has had a low rate because of its electronic voting system, because the machine automatically will not let -- it just will not let you cast a ballot that is logically inconsistent.

REPRESENTATIVE FLEMING: In other words, if you try to vote for two people for the same office --

MR. YOUNG: Right.

1.3

1.5

REPRESENTATIVE FLEMING: -- it will revert that to you and make you correct it before you finish.

MR. YOUNG: Exactly. And it's so important to keep it that way, and that was our first

recommendation, which if is there is a way, if you're moving to paper, to still do it by running it through some kind of scanning machine that can automatically catch that there's inconsistencies and then they can spoil the ballot and get a new one and do it again.

1.3

1.5

REPRESENTATIVE FLEMING: When you contrast that to some of the other systems, when you paper-ballot vote, you can actually mark two people for the same thing and spoil your vote, or if you have a punch system, you can punch two people for the same ballot. With our current system, you don't have that, correct?

MR. YOUNG: That's correct.

REPRESENTATIVE FLEMING: Elizabeth?

MS. MCNAMARA: Yeah. Georgia's rate of overvoting and undervoting is something to be very, very proud of. The machines have certainly made it a lot easier for us to accomplish that.

I do want to, however, point out that, you know, when we're talking about pen and paper, human-marked paper ballots, no matter how you set those machines, you know, you catch an error there at the polling location, nevertheless that

voter is now going to have to go through the process again and that, you know -- so convenience to the voter, there are obviously new -- technology has now caught up with the need to have a voter-verified paper ballot that doesn't necessarily require another human being to have to mark that. And human error has of course been one of the largest issues in any election system all the way along.

1.3

And so -- from the least point of view, just remember and, you know, just bear in mind that making it as -- you know, in making sure that the vote counts and that we do have as few provisional ballots as possible is the technology is there and it would be dangerous, I think, in our opinion, to ignore that technology simply for the sake of making people feel better at the polls because they can touch that ballot and mark it themselves.

REPRESENTATIVE FLEMING: As we get ready to wrap this up, Anne, I'm going to go ahead and I'll let you comment on that. But I'm going to give each of you about a minute after Anne speaks. And we'll start with Sean to give us a closing while we get ready to move the next panel

in.

1.3

1.5

MS. LEWIS: I just wanted to make one comment about overvotes and undervotes. I think the biggest risk of an overvote is a paper ballot because the machine is not going to let you vote for two people for the same office. And while, yes, you could have a system where a voter scans in his or her paper ballot and it spits it back out and then you have to vote again, I would say I think people would lose patience with that.

But the overvote issue really is only an issue on the paper ballots. The undervote issue I would suggest is not an issue. You have the right to vote for governor but decide you don't want to vote for county commissioner -- no offense to any county commissioners, but you have just the right to do that.

An undervote doesn't really tell you anything. It tell you that there were more votes cast in this election than there were in the same election but for a different position. So I don't really think that undervote has anything to do with that particular issue.

 $\label{eq:REPRESENTATIVE FLEMING:} We have one \\ \text{question.}$

Jimmy? I'll repeat it. Go ahead and say it because I have a mic.

MR. MCDONALD: No, just when they're done,
just to go over some things, I do have a question
before we let them go and it might not be --

REPRESENTATIVE FLEMING: Well, ask it now.

MR. MCDONALD: Well, since we have the three here, it's not exactly in the scope of what we've been discussing, which has been very informative, but I was wondering if you could speak a little bit to -- is there a legal standard regarding the language in which ballots are made available and is that something that is maybe not currently right, but can anticipate being right, and, if so, is that something that should be considered when we're looking at machines regarding the flexibility of the machine or anything happens with respect to being able to have access to a ballot that might be in a different language or something?

REPRESENTATIVE FLEMING: Here's how we're going to handle that question. Sean, I want the mic to go down to you and I'm going to let you answer that and also give us your closing comments as we move on to the next panel. Go

ahead.

1.3

Good question, Jimmy.

MR. YOUNG: It's a great question. Just briefly, there's a formula that the census is in charge of applying. If a county has -- and I'm shortening this. If a county has 5 percent of its population that's primarily non-English speaking and it's literacy rate is under a certain threshold, they are put in the category of counties that must provide ballots in that language.

Right now Gwinnett County is the only county in the state that has been certified as being required to provide Spanish-language ballots and all voting materials. We would also certainly contend actually that US citizens from Puerto Rico are also entitled to a Spanish-language ballot under a much lesser know provision of the Voting Rights Act, and so that's the brief answer to your question.

But I know that counties that are anticipating reaching that threshold soon are already making preparations. Hall County has done a great job. They hired an elections director that has done Spanish-language ballots

before in anticipation of their county meeting the threshold.

1.3

So great question, great thing to keep in mind.

Just briefly, for my closing remarks I just want to say it's true that the -- Anne's right that the Voting Rights Act cases specifically involve voting dilution which is not an issue in this case. But there have been Voting Rights Act challenges to voting machines, I think, in Ohio in particular when you have systems that have disparate impacts on lower income or communities of color, and then there's a link somehow to socioeconomic discrimination. That is a violation of the Voting Rights Act.

Georgia now -- the good thing about Georgia is that it has a uniform system throughout all counties which not all states do. And that's wonderful. I think everyone in this room, I would just guess, agrees that that's a great system. That already eliminates a lot of problems of disparate counting and whatnot. But that still is something to keep in mind as you pick a machine and pick some kind of system that you want to make sure it doesn't have a

discriminatory impact.

1.3

REPRESENTATIVE FLEMING: Thank you, Sean.

Elizabeth?

MS. MCNAMARA: Well, again, thank you for having us. And thank you for considering the rights of voters. Obviously voting is about voters. From the beginning, the middle, and the end, it's about our ability to cast ballots. We do a good job here in Georgia under the current system. We need to replace that system and in doing that we take what is good about our system, it's uniformity, the resources. Of course all election systems use more resources.

If there was ever a silver bullet out there for creating a better election system, it's making sure it's properly resourced, but it also preserves early voting which may not increase overall voter turnout, but it's very popular with voters and does provide a huge convenience.

That's going to be a consideration with all of those ballots as well, taking into account the folks that have disabilities where a pen-and-paper ballot would be problem, it could actually impair their secret vote. And the language accessibility issues that are coming up,

all of which the technology is available as I understand it, to make that happen and preserve what's good about Georgia's system and move us forward in the ways that we need to move forward. Keeping the voter in mind is always the most important aspect of this.

REPRESENTATIVE FLEMING: Thank you.

Now, Anne?

1.3

1.5

MS. LEWIS: Well, thank you very much for having us. And I'm just going to go back through what I talked about in the beginning. I think that any new voting system has to contemplate, I think, three parts of the system: Who's on the list, how does this person vote when he or she shows up at the polls, and what do we have to inform us if something goes wrong and there is a recount or a contest? What information do we have to inform us about what happened and what the results should be?

I think a lot of times people are surprised that in an election contest the result if you win is not that you win the election, you just get a new election. And so we don't want to have a system that gives us a new election because we still want to know what the problem is.

I think that it is correct that we have not had a capital VR voting-rights issue with our machines, and I agree with Sean that a lot of it is due to the fact that we have a systemwide "system," for lack of a better word, and I think it is --

REPRESENTATIVE FLEMING: Continuity.

MS. LEWIS: Continuity in the system, that's right. And so I'm not expecting there to be capital voting-rights issues related to the new machines. I mean, I think that, again, what we're looking for -- not for the legal business but good for the voting business, it's collaboration and not litigation because ultimately what we want is for people to have faith in the system.

Unfortunately, I get up on my soapbox a lot about the fact that we say: Oh, we had great turnout. We had 15 percent of the voters turn out. That's a terrible turnout. It may be great compared to last year when it was 12 percent, but it's not great. And so we want people to know: When I show up, I want to be welcomed, they're going to find my name on the list, I'm going to be able to vote, and I'm not going to hear two

days later that everybody in this particular precinct's vote didn't count.

And last but not least, I just have to say, repeat, that we want the best system we can have, but we can't necessarily always afford everything that we want. So we have to decide what we have to have to avoid problems in litigation and what we can afford.

REPRESENTATIVE FLEMING: I want to thank our three panelists today for the fine job.

As we get ready for our next panel, I want to mention one housekeeping measure. I think all of you kind of know who you are, but I'm not sure everybody else does. Would you flip your name tag around so that everybody sitting up here can see who you are and they want to call on you and everything. If you forget your name, you can turn it back around and look at it for a second.

The closing thought that I would have for you as we move to the next panel is what we call the poll book. You know, there's a lot to be said about the right to vote but one thing about the right to vote is that when I go vote, somebody else doesn't get to not count my vote or steal my vote or somebody who is not eligible to

vote, comes in and votes a different way from somebody that votes twice. So this idea that when we protect people's voting rights, we're also supposed to remember that means getting it right and not allowing votes not eligible to vote to come in there because it cancels out somebody's else vote who did the proper thing and registered and was the right place and didn't vote but once.

So that will conclude.

1.3

1.5

Amy, I think you're the moderator of the next panel; is that correct? No? Oh. I believe -- you are? Okay. I didn't mean to scare you there.

Will the next panel come on up.

And I just want to make sure you're on your toes, Amy. See, I knew all along you weren't and I just wanted to make sure you knew that.

And we'll move to our next panel.

SECRETARY KEMP: Mr. Chairman?

REPRESENTATIVE FLEMING: Yes, sir?

SECRETARY KEMP: I just wanted to say we'd like to thank our panelists for being here this morning.

(Applause)

DR. LEE: Good morning. Welcome to security voting panel. So my name is Wenke Lee. So let me briefly tell you how we're going to structure this panel. So we'll first go around with a very brief introduction and then we're going to go through the questions.

1.3

1.5

So the questions will be mostly in three parts. The first part is about what we think are the most important vulnerabilities to our voting and election system. And the second part is what can we do about it, in particular what are the roles of the private sectors, including companies and academia and systems groups. And the third part will be what do we think that the federal government can help us.

And I hope that we're going to have some time at the end for questions from the commission and the audience.

So let me start with myself. My name is
Wenke Lee. I'm a professor of computer science
at Georgia Tech. I'm also one of the two
co-executive directors for our institute for
Information Security and Privacy. I've been now
at Georgia Tech since 2001. I teach information
security annually to about 2,500 students. We do

have large online student body. And I've been doing cyber-security research for 25 years. I specialize in system software security. That means, you know, I go to malware and see the kind of intrusions and network. I look at activities on machines to see what damage has the malware done to your system and I also have started a company with that malware, focusing on botnet detection and attribution, and the company was acquired by Core Security here in Georgia.

1.3

1.5

And it is obviously my pleasure and honor to be here. But the work here is in my own opinion only and I rely on my training in the principle of cyber security for this work. I also (indiscernible) from my professional colleagues who work on voting system security.

So let's move on to the panelists. First up, Mike.

DR. GARCIA: Good morning. Thank you for having me. My name is Mike Garcia. I am here representing the Center for Internet Security, a nonprofit based in Albany, New York.

A little bit on my background. I'm a PhD economist by training but I've been working in cyber security for about a decade. I've served

in a number of positions, including senior cyber security strategist at the Department of Homeland Security. I led a trusted identities group through the National Institute of Standards and Technology as part of the Department of Commerce.

1.3

1.5

So I've had a wide variety of cyber security initiatives that I've worked on over time and been mostly focused on election security over the course of the last year.

So the Center for Internet Security is home to both Multistate Information Sharing Analysis Center and the Elections Infrastructure

Sharing -- Information Sharing Analysis Center.

These entities focus like all CIS -- excuse me, on developing consensus-based best practices in cyber security and empowering organizations to implement those best practices.

Over the last year and a half, CIS has put additional emphasis on elections, including creating the EIISAC, the Elections Infrastructure Information Sharing Analysis Center, which for obvious reasons and time limitations I will be acronyming, and now has more than 1,000 members. Those members entirely consist of state elections directors and localities elections directors.

I know you have a substantial number of them. The count was zero on March 6th and it is now well over 1,000. I'd also like to say Georgia, as a state, and several of its counties are members of that organization. I strongly encourage and recommend that all counties become members of the EIISAC.

1.3

1.5

At worst, you'll receive timely information on threats and mitigations. At best, we operate a 24/7 security operation center. So should there ever be an incident, they have true cyber security experts at the ready at all times for it.

We are funded, in part, by the US Department of Homeland Security. Our sole mission in EIISAC is to support the elections community on cyber security and best practices and risk mediation. There is no cost for governments to receive these services and so there's very little to lose by signing up. It's a two-minute registration process.

I'll also highlight that the state of

Georgia operates what we call an Albert sensor.

It is similar to the Einstein sensors that are

used in the federal government for cyber security

intrusion, detection, and prevention. It is an intrusion detection system that looks for known vulnerabilities and threat information, conducts an analysis of what we call "netflow data" which is basically anything crossing through a network. And we appreciate that partnership with Georgia. We're proud of it and we look forward to a continuing partnership on the cyber security conference.

1.3

1.5

In February of this year, the Center for
Internet Security published a handbook called the
Handbook for Elections Infrastructure Security.

We worked very closely with many state and local
elections directors and officials on this project
as well as some national associations and the
Department of Homeland Security and other federal
agencies.

This handbook highlights 88 best practices that election officials should take to secure their networks from cyber security attack. This sounds like a lot of best practices, but let me tell you that cyber security is very detailed work and when you miss the detail, only one needs to be exploited for an adversary to take advantage of it. So it's indeed important that

as much as we look at policy recommendations that are offered in all a small number, five to six policy recommendations that are critical and should be followed, it is really important from a cyber-security perspective to do the very detailed work that comes along a broader set of best practices.

1.3

1.5

I strongly encourage you to use this handbook in your deliberations. It's available for download from our website. I am more than happy to provide hard copies for free to absolutely anyone in the elections infrastructure in Georgia who would like to have it, commissioners of course included.

The best practices in this handbook are prioritized. They include additional data points such as estimated up-front costs of implementation, ongoing maintenance costs which could be very useful in making decisions in a constrained resource environment. It can be downloaded from our website, as I mentioned, and we believe that it's a critical aspect of security systems across the country and security in democracy.

And I'll make the point we have now

distributed over 5,000 of these across the country, solely to election officials. So it has some attraction. It is in some ways becoming the standard benchmark for election security from a cyber-security perspective.

1.3

1.5

We believe that there is no right way to execute on elections. There are many factors involved. Even from a cyber-security perspective, there is no single way, but there are many wrong ways and avoiding those wrong ways is important. The key is to assess the risks, to prioritize those risks, and to mediate those risks. You can do things right by taking a number of different approaches. It is important that you do that work in assessing risk regularly and mitigating those risks completely.

And even when you eliminate them after you prioritize the risk, you cannot eliminate all risks. That's simply not the business that we're in. It just doesn't work like that. That said, we can be smart about it. And if we're smart about it, we can do a pretty darn good job then. And so that really needs to be the focus: Identifying what are the priority risks that need to be mediated and putting those resources

towards mediating those risks.

1.3

1.5

Let me say unequivocably that the threats against our elections and democracy as a whole are absolutely, positively real. And in this business, exposure of weaknesses tends to only bring along additional attackers.

The first question we have to ask ourselves is about the motivation of potential attackers. Perhaps it's a chain focus. Perhaps it is simply to undermine democracy more broadly. In some cases, it's solely for self-branding and the matter of proving that it can be done. From this perspective -- and we have to consider all of these potential motivations -- confidence and security is as important as the security itself. This underscores the importance of transparency and communication of your approach as well as developing and exercising incident response plans.

I strongly encourage you to consider the fact that elections are not static, and so they're not solely about choosing a correct approach to executing on elections but considering the operational aspects of those efforts and ongoing work. This includes a role

for exercising response plans, for expecting that something will go wrong, and for expecting the need that the threat will evolve as it always does and always has.

1.3

1.5

In general, we find that aspects of elections' infrastructure that have a network connection are the riskiest from a cyber-security perspective. This especially includes voter registration and election-night reporting but can include things like the poll books, election management systems, in some cases tabulation as well, and in some cases, depending on the configuration of them, voting machines.

It should come as no surprise, but please do not underestimate the importance of this point.

Focusing solely on one aspect of elections is a trap. I can assure you that our adversaries are not doing so. They seek weaknesses wherever easiest and cheapest to exploit. When we analyze our security risks, we must do so focused on the whole of the ecosystem from the first steps of voter registration and the filing through the last certification results.

I encourage the commission to consider the broad range of systems that are involved in

elections and to strengthen security within each of those components. It most certainly is easier to think conceptually at the system level, replacing poll books, replacing voting machines, et cetera, but this is not how those who wish to undermine democracy think about it, so it is incumbent upon us to not think about it in that manner, all right?

Thank you.

1.3

1.5

DR. LEE: Okay, thank you. So I just remind the panelists that we're going to do at first very brief introductions. Then we'll go to the questions and have plenty of time for the questions, okay?

So next we have Mark Lindeman from Verified.

MR. LINDEMAN: Good morning. My name is
Mark Lindeman, and I'm a senior science and
technology policy officer at Verified Voting.
We're a national organization, not a chapter
organization by the way. We're nonprofit,
nonpartisan, founded by computer scientists and
razor-focused on the challenge of securing
American democracy in the digital age.

A little bit about me. I have a PhD in political science. My fields of expertise are

American politics, public policy, quantitative analysis, political behavior, and I happen to be an expert on design of risk-limiting audits. It was nice to hear the League of Women Voters give a shout-out, but I'm not going to talk about those here. It's just too much. It'll be important. That will be an ongoing discussion I certainly hope for Georgia.

1.3

1.5

As Mike just said, elections have many parts and perhaps the greatest threat would be to suppose that we could find a silver-bullet solution that would solve the problem of election security once and for all.

Election security is like national defense. I suppose it's a form of national defense. It requires ongoing attention, collaboration, and investment on many different fronts.

So I'm very honored to be part of this ongoing discussion. It's a terrific testimony to the work that Georgia is doing.

Now, verified voters, I think these particular comments, I will indeed focus on voting systems very briefly. I'll be as short as I possibly can. Verified Voting does not recommend particular vendors or systems, but we

do have some central criteria, and this comes back to two related core principles: verification and resilience. So last week, Homeland Security Secretary Kirstjen Nielsen stated this nicely. She called on election officials to make certain that by the 2020 presidential election, every American votes a verifiable and auditable ballot. She said our systems must be resilient. We must be able to demonstrate that the votes count and that they are counted correctly. And that's what we've been saying since we were founded.

1.3

1.5

So it's a very exciting and also in some ways a terrifying time for verified voting as it is for many throughout the country. But in order to verify that votes have been counted correctly, in our analysis, our voting systems must use paper ballots that all voters have had the opportunity to verify. And we must routinely check the marks on some of those ballots.

So that routine check is what's called post-selection tabulation audit. And I want you to know, don't be terrified of the votes, they can be done very efficiently and in a variety of ways that are adaptable to the voting systems we use.

However, that said, it's important the audit officials must examine voter marks on the actual ballots, not just barcodes or digital images that voters didn't have the chance to verify. Because what we're trying to do, again, is demonstrate the votes are counted correctly. Auditors have to be looking at what voters could look at or otherwise verify through other means.

1.3

1.5

So ideally and usually, the audit confirms that the original count was highly accurate. That's how most audits turn out. There's at least one counter example that comes to mind where a routine audit actually led to a recount that changed the results in several local elections. So that's something that happens. Paper ballots, where maybe it will happen more, maybe it will happen less, but either way, paper ballots provide resilience. If there are any lingering questions about the accuracy of the count of paper ballots, remove the doubt because they're available for recounts.

I also wanted to point to another way that paper ballots provide resilience. Under consideration for the state of Georgia is to have all in-person voters use ballot-marking devices.

Either it could apply just to election-day voters or could apply to both election day and early voters. So verified voting has real concerns about this approach and I wanted to explain why.

1.3

1.5

In a system that relies on ballot-marking devices, the number of voters who can mark their ballots depends on the number of machines that are available. So when machines fail or even get turnout that's higher than expected, chaos can ensue.

And you've probably heard the stories from around the country before. In fact, in Johnson County, Kansas, which deployed a system that relied entirely on ballot-marking devices, they just had the primary and they experienced long lines for reasons they still don't entirely understand, they're not sure about, but it had to do with a flaw in the underlying software they were using. So it's inherently fragile, and indeed that fragility provides an attractive target for determined adversaries.

So the advantage of a system in which most voters are able to use hand-marked paper ballots is that the number of voters who can mark their ballot at once is limited only by the number of

available tables and privacy booths and those rarely ever fail. So in some sense ballot-marking devices are still a crucial part of the system because they provide accessibility which is a core principle of the commission and should be a core principle of everyone.

1.3

1.5

But the worst that there -- they're a less appealing target because if the ballot-marking device fails and if it's scanner fails, most voters still are able to mark their ballots by hand and deposit them in the secure ballot boxes underneath the standers. So we see that as a very valuable property that we should probably not abandon.

I heard concern in the first panel about overvotes and also some discussion of undervotes. I want you to note that, okay, it's true that ballot-marking devices can make overvotes impossible, and I agree that that's an advantage. Experience has shown that ballot design, the way that a paper ballot is laid out and instructions that are given, can have a very large effect on the amount of overvotes that are cast in the first place. So we can really help voters to avoid mismarking their ballots and then it is

important, just as I said before, to have a standard to reject those ballots so that the voter has a chance to correct them. But that ends up being a very, very small fraction of all ballots.

1.3

1.5

Something you do have to worry about is inadvertent undervotes. It's absolutely true that some people choose not to vote in a contest, perhaps many contests, because they just didn't want to. That's not a problem. We wouldn't want to automatically reject such ballots.

However, there have been elections in which voters on particular systems in particular counties somewhat mysteriously undervoted at double-digit rates that were not true of voters on other systems or in other counties. No one is quite sure why this is. We believe it probably has something to do with the way that the digital ballot was displayed on the screen.

Paper ballots can also be designed so
that -- can either be designed well or poorly so
that people do or do not see contests. One of
the scary things about ballot-marking devices
potentially is in the presence of cyber attack we
may not be able to determine after the fact

whether the contest was even displayed, whether it was even presented or not. The ability to check the selections on the ballot that's produced may address that problem, but that's how well voters are able to use that. It's using an untested hypothesis whereas over half of the registered votes are using a system in which -- in-person voters, I should specify, are using a system in which most people are voting successfully on hand-marked paper ballots. So don't overlook those advantages. Thank you.

1.3

1.5

DR. LEE: Okay. So in the interest of time, I'm just going to move on. So as I ask the panelists remaining to introduce themselves, I'm also going to ask a question that I think it will be best for you to answer.

So sitting next to me is Klint Walker. He's from the Department of Homeland Security. So I want him to introduce himself. I'll also ask him a question about what is in the role of federal agencies to help the states secure the election and working systems.

MR. WALKER: Thank you. My name is Klint Walker and I'm the cyber security advisor for Region 4 for the Department of Homeland Security.

That means that I cover North Carolina, South Carolina, Florida, Georgia, Mississippi, Alabama, Kentucky, and Tennessee. Just a small area.

1.3

So I'm -- I always like to use the term that I'm from the federal government and I'm here to help, so ... it's a good icebreaker.

Because elections security is a national security issue, our role, as we see it, is to add support. You know, just like FEMA does in the event of an emergency, you know, the Department of Homeland Security is not going to take over. We are not here, you know, to do things without permission. We're here to support. And we are here to support with information sharing, we're here to support with technical assistance and maturing partnerships, getting the right people in touch with the right services that they need. That is our role and that is what we're here to perform.

DR. LEE: Great. Thank you.

And we have Senator Bruce Thompson. And then the question I want to ask you is that what do you think about the roles of private sectors in helping in the interest of security. That would include a private security company's

consultants.

1.3

1.5

SENATOR THOMPSON: Thank you. What an honor it is to be able to be here and be a part of this, so thank you, Secretary of State.

My name is Bruce Thompson. I serve in the senate and I'm the chair of science and technology. I have a background in PII and software as well. Anyone that's been around knows my passion for cyber security and quasi-elections over the last three years.

Your question as well, that's what it says, what do you think with the private sector involvement. I think we have to engage the private sector. As a private sector businessperson, that's where a lot of this expertise comes from.

You can't just rely on the government. The government's not here. Although they may be here to help, they're not going to solve the problem that's brought in. The private sector is full of experts and professionals that are the front lines day in and day out.

The challenge I think we have is being allowed -- safe and sound is when we have corporations that can collaborate the innovation

and experience they have without creating vulnerability to their stockholders or those that have equity within those institutions. And I think that's the challenge we have set before us. How do you provide that mechanism in place where the MBA and so on would be able to not effectively harm their corporations but collaborate together for the best election process and/or security for the people of the state of Georgia.

1.3

1.5

DR. LEE: Great. Thank you. And last but not least Representative Ed Setzler, and the question I want to ask you is related to the previous question that I asked Senator Thompson which is a lot of operations now, they use plan to encourage -- including why hackers (indiscernible) many of the systems, and on the other hand you also have the desire to -- from a citizen's group that, you know, they demand to know about the abilities of our working systems.

On the flip side of that is, you know, that may develop -- let's say overconfidence. Also there's concerns about all the vendors and government agencies to keep certain operations and the details out of the purview of the public.

So how do you reconcile those conflicts?

REPRESENTATIVE SETZLER: Thank you for the question.

I want to say once again thank you for the invitation to be here to the secretary and the co-chairman.

And I think to frame this question, I'd like to start by saying that the key for us is to fund the right technology for the right task. When we talk about technology, everyone, I think, today is biased with what is emerging leading-edge technology used to solve our problems.

If I can remind us, if you think back to the first century A.D., there was a cutting-edge technology that was developed -- developed in China. Didn't make its way to the western world until about the 12th or 13th century, and it's called pulp paper. And paper is something that we've been able to use for about 800 years. It's something that's very good for recording a vote and recounting it. You know, the idea that if it's not leading-edge technology, it's not really technology, but all of the things we use, that we're talking about in voting context is technology.

The question is what is the right interplay between an array of technologies to solve the various problems and challenges we have in a fair, open, and secure election system. And as we do that, I just want to remind us, you know, the gist is that this paper technology is recountable. There's also vectors of threat with which it can be fraudulently used. And then we hear the stories of the 1948 election for the United States Senate where Ballot Box 13 was -- came in with 201 votes for one candidate and 3 votes for the other candidate in a race statewide in Texas that was decided by a total statewide differential 87 votes, and the rest is history as it were.

1.3

1.5

So whereas the technology is tremendously useful in a recounting setting, it by itself, when left into itself, has its own vulnerabilities.

Likewise, if you look at more modern technology, an electronic voting system is very easy to use. They're really -- they're a breakthrough for us in terms of ADA and handicap accessibility. They allow us to rapidly tabulate. They also allows us to rapidly recount

votes. And it takes quite a high level of sophistication to defraud and fraudulently inject votes into -- for elections, but we also know that no machine is unbeatable and is accurate.

1.3

1.5

So how do we -- I think as we face this challenge, we have to ask ourselves what is the proper complementary use of the various technologies we have, from paper to electronic technologies to taking care of ADA accessibilities, taking care of ease of voting, rapid recounting, but also the verifiability of a recounting component that we think paper provides for us. How do we fold those together in a complementary system that is really best in class, that we know we've got a recountable voting system?

I think this discussion sort of leads us to see that we have the best-in-class technology if we not just put our election system on the Internet because it invites hacking. And we have a process again that's a complementary process that insures we're doing our best to secure the vote.

I think those are the challenges we face in technology. Let's not be stuck in 2018 thinking

if it wasn't invented in the last ten years, it's not really technology and it's not relevant to this discussion.

Thank you very much. Yes.

To the professor's question, I want to make sure I'm drawing the fine point to your question. What component of that would you like me to speak to directly? I'm not sure I really understood your question --

DR. LEE: So I think one question you can answer is the tension between citizens' right to know. So basically I think one security principle is that you should not secure your system through obscurity. You know, you should let, you know, people look at system and there's advocacy for open design, open source so people can actually look at the (indiscernible) because (indiscernible). So by many people looking at the system, giving the system a chance, that we can help everybody.

But on the flip side, you know, vendors, including some of the secret government agency operations, they want maybe, you know, to keep it away from enemy hands. So there's always this tension, so I just wanted to see what's your

opinion on this.

REPRESENTATIVE SETZLER: I would tell you it's to face the tension between the open source and closed source system. You know, if we're in a circumstance where votes were all publicly cast and publicly known and the content of it was known, it would be easy to move to decide if complete open source, complete transparency to all parts of it as it were.

I think part of what we face in this is this mandate to maintain confidentiality of the ballot, that Senator Bruce Thompson when he goes down to his polling place in Bartow County, that vote, although your vote is considered public, your vote as a private citizen at the ballot box is private.

So the idea that everything can be made open, and -- of course, that'll never be part of our system. The idea to preserve the confidentiality of the individual's ballot presents some challenges to being completely open source. So that's all parts of the approach.

So we've got the tension between open source and sort of proprietary with respect to open source. Obviously, it allows for people to look

in and confirm. It also opens the door for a broad array of people coming in and figuring out how to hack the system. So you have that tension.

1.3

1.5

I think the potential we have, I think, to focus on -- you know, I think that a more difficult and complex way is the idea of confidentiality of the individual ballot versus everything being known about it. And I think that is a component -- when you study the system, that is a component of -- and when you know we've got, you know, 2,314 ballots in this precinct and we want to make sure that those are matching the people that voted, there's no way to tell -- we can't allow Mrs. Jones' vote for Hillary Clinton or Mr. Smith's vote for Donald J. Trump to be known relative to each other. So that provides inherent limitations to, I think, a complete open-source system.

So I think the -- I would tell you that if we're in a place where vetted, confirmed, white hat, or confirmed, vetted entities can have visibility in the system, but not everybody, that's probably the best place you can be. I think it would be an agreeable (indiscernible).

DR. LEE: Great. Thank you. So I think at this point, I think we should open to the commission members and audience to ask questions. So I think it's my -- this panel is only open to the questions from the commission members, so I apologize.

1.3

1.5

MS. BAILEY: Good morning. Lynn Bailey, local election official from Richmond County.

I have had concerns all along about the implementation of risk-limiting audit in an environment such as Georgia's where we are precinct counting ballots. Now granted, I'm sure that I don't have a complete understanding of how those audits work, but I do know that in the state of Colorado, as an example, it took them probably nine years or so to perfect a system, if it is in fact perfected at this point, of risk-limiting audits, conducting those audits.

They are an all mail jurisdiction and are mostly central count which I think differs greatly from Georgia's set up. So I -- we ask that, you know, we proceed cautiously with that and make sure we have some type of post-auditing effort in place, no doubt, but that we're careful that we don't bite off more than we can chew with

our current environment. Thank you.

1.3

1.5

DR. LINDEMAN: May I speak briefly to that?

So just to be clear, it's not that Colorado worked for nine years on implementing risk-limiting audits. For most of that time, Colorado was working on deploying the entire new voting system. It's absolutely true that if Georgia tried to emulate Colorado in 2020, I can't imagine that working. They are too many differences.

Many ways of implementing tabulation audits that are risk limiting. There are many ways of implementing tabulation audits that may not be risk limiting but nonetheless are valuable and provide justifiable confidence in results. And I can tell you that Verified Voting and I personally am very passionately committed to working with Georgia to find solutions that actually work. Because an audit that election officials cannot do is not a successful audit. So we're completely on board with that.

SENATOR THOMPSON: I think it's real important, first of all, to understand what the initiative is before us, and that is to make sure

we have a bipartisan approach in what we're trying to do. And ultimately the ingredients we're looking for is exactly what I think we have in the state of Georgia in our government. That is transparency and accountability.

1.3

1.5

Keeping that in mind, the one thing the chairman sitting to my left here and I worked on this last year, in hearing after hearing after hearing we kept saying let's not let perfection be the enemy of greatness. We keep thinking that it has to be perfect from day one, so therefore, for some reason, do not go forward. And ultimately when you do that in business, you find yourself a failure. And at that point, we have a huge problem. We know it's before us. What I would encourage our state is, again, come together, let's not let the perfection, what we're shooting for out there, be the enemy of greatness.

REPRESENTATIVE SETZLER: Taking off from what Senator Thompson said, the director -- examiner's question, that was the concern about risk-limiting audits in the debate this last legislative session, was I think there's a recognition across the board. I'm admitting that

risk-limiting audits are an important part of that complementary regime that I was referring to earlier in my remarks.

1.3

1.5

I would ask local election officials to not take a stance against risk-limiting audits because of what it could do if they're implemented in 2018 and 2020. I think we're where we need to be as we need to move towards phasing in a new system. We need to phase in a more rigorous risk-limiting audit regime as we can do it with confidence.

What we were very careful to not do this past year, legislatively, was not to mandate some statute that created a statutory set of handcuffs for us that cascaded unlimited consequences that would throw an entire election into chaos. I think the -- so with that, we step back legislatively from a -- the most rigorous risk-limiting audit regime we could mandate, but at the same time, I think we can validate the value of risk-limiting audits as an important part moving forward with any program.

The question is do we mandate a statute, a full state-wide thing year one, or do we put something in place, as Senator Thompson said, a

great system that we can continue to refine over years, and as we have confidence in our system and as we're able to move forward, step-by-step implement over the course of maybe a decade a system that's going to -- we're going to be able to achieve the political moves that we're looking for and not just throw us into chaos by a "Hail Mary pass" from day one, something again, that's -- as Verified Voting said: A radically different system. We just felt like -- so I would challenge political election officials to not be in the anti-risk-limiting audit camp. It's a very important part of what we do moving forward. But your legislature and others would say: Let's not go all in in year one. Let's step into that and let's take steady, short steps as we go.

DR. LEE: Great. Thank you.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

I think in the interest of time, we should move to -- oh, sorry.

SECRETARY KEMP: Thank you, Dr. Lee. I just want to ask -- this may be a good way to wrap this segment up, but Mr. Walker and Mr. Garcia are both fighting this battle every day, literally nationwide. And what are you guys

seeing out there that's working? Anything we should be concerned about? Any advice?

I think it's been a great panel.

MR. WALKER: So we've been pretty much boots on the ground, you know, for the last year for the election systems in the Department of Homeland Security performing assessments across counties' and states' election systems.

And one of the things I think comes out in every system is, you know, people. It's eventually that everything always comes back to your layers, how you value risk, how you accept risk, how you mitigate risk, and then how that trickles down to the people, having the right people in the right place.

You know, I always like to use this analogy. You know, that imagine you had a football team and you have a head coach and he never shows up until the first day, you know, the first game, throws the players the playbook and says: Head out on the field, win the game for me. They've never practiced, they've never been trained, they don't know what they're doing, but they're supposed to go out and win the game.

And how a lot of organizations treat cyber

security is we have a program in place, but nobody ever practices it, nobody ever, you know, trains for it. They're always sitting. But cyber security is everyone's responsibility down to the last person, and that's what the -- you know, the threat actor is targeting.

So whatever system then you're looking to putting into place, make sure that you have the policies and the processes and the training to support that system. I think that the key to the big things here is that that's what the thracker's going after, from phishing campaigns, you know, to social engineering watering holes, whatever it going to be. They're going after the people. And if your people aren't on board with you, if it's not a top-down approach to training and to holding people accountable for cyber security for the system, then it might all be in vain no matter what other controls you have in place.

DR. GARCIA: So I'd agree wholeheartedly with that and I would also agree with what Senator Thompson is saying. So there are times to take a moon shot or throw a Hail Mary. I was going to use a football analogy but I won't

double-up any.

So, you know, there are times to throw that Hail Mary, but you always continue making incremental improvements. So if something is not viable to implement now, it does not mean you don't continue mitigating risk and make improvements. Find ways to do that and when you design something where you are trying to make a large overhaul of a system, be sure that it is built for evolution as well because these threats will continue to evolve.

And that's really -- you know, if there is a takeaway about what the threat environment looks like, it's different today than yesterday. How dramatically? Well, that depends on the day.

But these things continue to change and that's okay. Our responses continue to change. We continue to get smarter and more capable and more capable, but we have to be thinking about risk in that perspective, that, yes, you mitigate something, you move on to the thing, you have to come back and assess that. You have to continually assess where you are and what you're doing. You have to understand your approaches, how effective they were yesterday is nice, but

how effective they'll be tomorrow is far more important.

MR. WALKER: Let me add on to that as well. As you've probably heard the term several times, you'll probably hear it a lot more: resiliency. Resiliency is the key. I mean, it's no longer a matter of, you know, if you're going to get an attack, it's when. And having resiliency built into your system -- and a lot of people think that resiliency is something that you can buy.

And we like to use this analogy as well, it's that you can't go out and buy health. I mean, we all want to be healthy, right? But health isn't something you go out and buy. You can't go to the store and say I'd like one box of health and you go home and you get healthy. Health is a way that you are, it's practice. It's putting into practice the things that you need to be healthy: Eating right, exercise.

Cyber resiliency is not different than that.

It's building a program that looks at the different risks and it says what do we need to do, everything from configuration control, owner building, management training, situational awareness, asset management. It's putting all of

those layers together and saying where are our threats and where are we going to actually put our resources and our time and attention to. So making sure that you're looking at resiliency as was said, you know, looking for tomorrow's threats and saying is our system going to be agile in development and resilient during the time of crisis and need. That's key.

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

SENATOR THOMPSON: Real quick because I know we're trying to wrap up. One of the things we're talking about is systems to be put in place, but in business, especially on a software business, it's important that not only we put something in place, but we as a state are committed to that because if we aren't committed to this, we can't go ahead and spend whatever the amount of resources are to be able to put an election system and so on in place, but we're going to need the resources to be able to be committed and be able to support that. Because as the people on my right have just said and to my left, this is an ongoing challenge. It changes on a daily It's going to take financial capital, basis. it's going to take emotional intellect and it's going to take physical capital.

1 In the software business, you do pin tests 2 on a regular basis to see where the 3 vulnerabilities are. Unfortunately, we deal with 4 elections as if it's -- when it goes live, that's 5 when we find out if we have a vulnerability, so we're going to have to handle this animal a 6 7 little bit differently, but the main thing we've got to do is we've got to be committed to this, 8 9 all in from the top down to the bottom or the 10 bottom or the top, wherever that is, that weakest 11 link, that's where we're going to find our 12 vulnerability. Unfortunately that vulnerability 1.3 then mitigates any risk that we put in place. 14 DR. LEE: Any last word? Okay. 1.5 So I would like to thank all the panelists. 16

So I would like to thank all the panelists.

I mean, I think that's very informative, helpful.

So let's wrap up and move on to the next panel on voting accessibility.

(Applause)

17

18

19

20

21

22

23

24

25

MS. HOWELL: Good morning. My name is Amy Howell, and I'm thankful for the opportunity to moderate this panel around access for individuals with disabilities in the voting process.

Before I introduce our panelists, I wanted to just give a little bit of the legal context

parameters that guide the state in relationship to our obligations around access. There are a number of federal laws, and the one primarily is the Americans with Disabilities and Rehabilitation Act, federal law, that provides protections for people with disabilities to ensure their equal access to activities that are operated by public entities and ensuring that equal access and prohibiting any exclusion from. It imposes requirements to the state and local governments to ensure that individuals have that equal opportunity.

1.3

1.5

There are a number of -- as has been mentioned by a number of our panelists before, federal laws also govern the voting process that also contain provisions explicitly making reference to equal access for individuals with disabilities, including the Voting Rights Act. HAVA was mentioned earlier and also the Voting Accessibility for the Elderly and Handicapped Act.

So I won't go into the specifics of those provisions, I know our panelists will mention them, but I wanted to just offer that framework to indicate how the state has worked to be in

compliance with those federal laws and how they guide the work ahead.

1.3

1.5

So now I'm going to introduce our panelists, and I'll ask as we engage in this discussion or if there are any questions from commission members to make sure that you pull the microphone close so everyone who's here can hear you really well.

So, first, let me introduce to my right,
Lou Ann Blake. She is the deputy director of the
National Federation of the Blind and Jernigan
Institute where she's worked since 2005. For
eight years Ms. Blake has served as the manager
of the National Federation of the Blind or NFB's
HAVA training and Technical Assistance Grant for
the United States Department of Health and Human
Services and has been responsible for working
with election technology, developers, voting
rights advocates, elections officials to ensure
that the voting process is accessible to blind
voters.

She's also published a number of scholarly articles and works with institutions of higher education to help them make their digital campuses accessible.

Prior to joining NFB, Ms. Blake worked as an environmental engineer for a number of consulting firms in the Baltimore and Washington area. She holds a BS in environmental engineering and a JD.

1.3

1.5

To my right -- excuse me, to my left, my other right, is Anne Kuhns. She is a staff attorney with the Georgia Advocacy Office which is a non-profit, federally-mandated entity that advocate on behalf of individuals with disabilities.

She graduated from Georgia State College of Law and after several years of practice in a big law firm, she left the corporate litigation team to join GAO. She advocates on behalf of individuals with all types of disabilities, living with physical, mental, and developmental disabilities.

And then we also have Ms. Elizabeth Jones. She is the director and COO -- executive director, excuse me, and COO of Shiloh Community Center, an agency that provides health and wellness services to senior citizens and persons with disabilities and other community-based services.

Ms. Jones is a certified Tai Chi instructor

and a licensed -- deri-fit (pronouncing)?

MS. JONES: Geri-Fit.

1.3

1.5

MS. HOWELL: -- Geri-Fit instructor. She has a master's degree in psychosocial rehabilitation, and she's also a former director of mental health and developmental disabilities in a fourteen-county area.

I want to thank our panelists for joining us. And I have a few questions for them to help sort of engage our conversation.

So if you could, tell us what are the key areas of interest for people with disabilities in relationship to their access to voting.

Elizabeth, do you want to start us off?

MS. JONES: Yes. One of the major problems when talking with seniors in the fourteen-county area is a lack of access to polling sites. When we look at Richmond and Columbia counties, there are more polling sites. There is more access to transportation to get to those polling sites, whereas when you go out to the rural counties, there are not as many polling sites and there are -- there's a lack of transportation.

And a lack of transportation in the rural counties has been an ongoing problem for many,

many years. And the polling sites, some of them they lack the type of accessibility to enter and exit for people with disabilities, older adults, and so there is a problem.

1.3

1.5

And I know that a lot of the places where those sites are being located, they sort of volunteered their sites for that, but we do need to look at whether that site really is accessible for a person with disabilities or an older adult. Standing in lines, long lines, whether or not that person is actually capable of waiting in a line for their time to come in, and the -- and bathrooms.

Some people might think that's not a big issue for an older adult, but being able to -- if you're going to be at a site for a very long period of time, then they need access to bathrooms.

And so when we look at and we talk about accessibility, we need to remember that we have a lot of people with disabilities who might feel like they lost their citizenship because they are not able to vote. Older, frail adults who feel the very same way. It bothers me when I talk to a senior citizen and they say: You know, I

didn't get to vote in the last election because I didn't have a way to get to the poll. Or: I got to the poll and I didn't -- started not feeling well and I just said I'm just going to leave.

MS. HOWELL: Lou Ann?

1.3

1.5

MS. BLAKE: Sure. So I am going to speak primarily about blind, vision, and other print disabilities. So for a blind voter, access to the ballot, being able to mark your ballot privately and independently, and then having a secret ballot once you mark that ballot are the real key issues. And this has been particularly true with the movement from DREs to paper ballots.

Many states, for the lack of federal funding to purchase new machines, are having the majority of their voters handwrite their ballots and they're only purchasing enough accessible ballot-marking devices to serve as the, quote, ADA machine. But many of these second-generation machines create or generator ballots and it's different in size and content from a hand-marked ballot. So even though those ballots may be tabulated, so they're using the same tabulator and of the same ballot box as hand-marked

ballots, when there's a recount and those ballots are taken out of that ballot box, it's very obvious which ballots were marked by the ballot-marking device. And if those machines are only being used by voters with disabilities, then you know that that ballot was cast by a voter with a disability.

1.3

1.5

So it's very important that the processes be in place to ensure that other voters, voters without disabilities, are using those machines as well. So that's sort of the poll-based issue that's really faced by voters with disabilities or print disabilities.

Another issue that we're facing is absentee-ballot voting. Typically, an absentee ballot is a paper ballot which is not accessible to a blind or a disabled voter. So we're not able to mark that ballot privately and independently. So there are systems such as electric ballot delivery that will enable us to mark that ballot. So those are the real key issues that were facing right now.

MS. HOWELL: Ms. Blake surfaced two important principles around privacy and independence. So, Anne, as you talk about access

to voting, will you also sort of give us some information around the importance around independence?

1.3

MS. KUHNS: So, yeah. So the thing about voters with disabilities is they span across all race, gender, economic, party lines. So it's not a partisan issue. I mean, everybody wants the same thing. They want to go to the polls, they want to have their vote count, they want it to be private and accurate.

And so the law requires that people with disabilities have the same opportunity to access and participation, but obviously throughout history people with disabilities have been historically marginalized and continue to be so. At this time through systems or failure — failure of people at the polling station to understand the systems, failure of training to make sure that people understand the systems, and to make sure beforehand that the systems in place actually work.

MS. HOWELL: You raised a good point about new systems, Anne, and that's a lot of what we're going to talk about.

Anne, are there some features that could be

found in a new system that would enhance accessibility for people with disabilities. I know you talked about some of the challenges, but what might be some of the features that would be an enhancement and it would help?

1.3

1.5

MS. KUHNS: Well, all of the accessible ballot-marking devices have an audio-ballot component, so that's clearly critical for a blind voter or a low-vision voter.

Now, unfortunately there is no current poll basis on those accessible to a deaf-blind voter. You know, someone who's profoundly deaf, you know, cannot hear the audio ballot, and he's blind so they can't, you know, read the touchscreen.

You know, refreshable braille slates, you know, would solve the problem, however, for a number of technical or security reasons that doesn't exist. So, you know, of course, you know, having the large print, touchscreen for low vision is also really, really critical. And then, you know, for other disabilities, you know, the switch pack -- the tone switches and things like that, of that nature are also very important to the public.

MS. HOWELL: I think that I read that for a number of people who may be visually impaired and especially low ability to see and especially on an aging population that braille may not be their -- may not be -- they may not be familiar with braille, so are there other options that you mentioned that would be important?

MS. BLAKE: Yeah. So, you know, the user interface or control panel that a blind voter would use to get through the ballot to select their choices of candidates, you know, those -- you know, typically you'll have different buttons and shapes on the panel or on the control panel, like an "X" or an up arrow or a down arrow, right arrow, left arrow. So those are the ways that a blind voter can use those systems. Typically they are labeled in braille. The NFB encourages braille, the use of braille, so that is a key factor that needs to be included.

So the different shapes, they typically are color-coded as well for voters who can see color. So that typically is how those controls are made or are designed.

MS. HOWELL: Ms. Kuhns, for individuals who have physical or mental disabilities, what would

be some features of a new technology that would enhance accessibility.

MS. KUHNS: Well, of course you're allowed to have a person of your choosing besides your union leader or employer come help you at the polls. And one big problem is, at the polls, people don't under -- the poll workers don't understand, one, that you're allowed to have somebody help you, or, two, that you're allowed to vote at all.

So having somebody there to assist you is definitely the biggest issue, and I think the stigma attached to mental health issues and developmental disabilities is what holds that back more than the ability of people to vote because you may not agree with why somebody is voting for who they are voting for but -- I don't agree with the reasons why people vote for somebody, so just, again, as a policy, the procedures are in place, the people at the poll know that you can have somebody assist you as long as you have been not legally adjudicated incapable to do so.

MS. HOWELL: Ms. Jones, are there other features that would help with the aging

population?

MS. JONES: I'm not going to speak to the actual system as to the wording on some of the ballots. If there is an amendment or you're voting for some type -- say 1 percent sales tax or something like that -- I have a lot of younger friends on social media. And in one election, previous election, they made a big joke out of it, and it just went around and around: What did I just vote for? Because they really didn't understand the language of the ballot so some of them said they voted yes, some voted no, but they really didn't know what they had voted for.

So if we've got 20-somethings and 30-somethings not sure of how and what they should've voted for, can you imagine an 80-year-old person going in and reading an amendment that's a half page long and not understanding what they should vote for.

So it's a part of the process of how -- of what we're looking at. I would encourage the people here who have some control over our voting system to -- regardless of what type of system you go to, that it remain simple and accessible for people with disabilities and older adults.

MS. KUHNS: So another accessibility issue is you wouldn't actually think that people with hearing impairments might have a problem at the poll, but what a lot of people don't know is our American Sign Language is not the same as English. You can't just write somebody a note that speaks ASL. It's not the same, doesn't translate the same.

So there needs to be a contingency in place for somebody who shows up who needs an ASL interpreter. And you can do that through telecommunications relay service which is relatively affordable. But a person who ASL is their primary language is not going to be able to understand what is in that ballot.

MS. JONES: And language barrier, well, we've talked about, you know, the Hispanic community having ballots that are, you know, Spanish for Spanish-speaking populations, but I do encourage you also to not forget that we have a lot of citizens who are not -- were not born and raised in an English-speaking nation. And so having some type of support in place for people whose English might a barrier.

I just talked about that long amendment.

Now, if you weren't born and raised as an English-speaking person, you will get something like that, or you have a process that you're not familiar with, you're not going to vote the way you probably would like to vote. So not just looking at Spanish-speaking populations, but let's look at our entire population and say is this a system or a process that someone who was not born and raised in an English-speaking nation, can they navigate the system also.

1.3

MS. HOWELL: So I know I started by providing a little overview of the law that -- well, I mean, tell us a little bit about what the law requires of voting rights or otherwise around equal access. So in relationship to the issues raised around being able to understand anyone, and then when we talk about equal access, what does that really translate into in the voting process for people disabilities?

MS. BLAKE: Yeah. So Title II of the -well, first we'll talk about HAVA. HAVA, you
know, passed -- was passed after the 2000
election, and HAVA requires that there be at
least one accessible voting machine in every
polling place for all federal elections.

And then the Americans with Disabilities

Act, Title II requires that a voter with a

disability could be provided the same opportunity

to vote privately and independently as is

provided to voters without disabilities.

1.3

1.5

So what that means is that when I show up at the polling place, there needs to be a way or there needs to be a system in place that enables me to mark my ballot privately and independently and verify that I marked that ballot the way I wanted to mark it, privately and independently, as is, you know, available to voters without disabilities.

So with that, that is what Title II means in terms of voting, so that I have the same opportunity as everybody else, or any other voter with a disability has the same opportunity.

MS. HOWELL: And so in relationship to the issues raised about whether an individual understands the provisions of the ballot, that it might not cover that in any particularity, it's more around making sure that there is access to the process of the ballot, correct?

MS. BLAKE: Yeah. That you have an opportunity to the same benefit or service that's

provided by a government entity, yeah.

1.3

1.5

MS. HOWELL: I know that we've talked a little bit about the features of the system, and Georgia's comprised of a hundred and fifty-nine counties and we have officials from many of them, and then we've talked about that we have one system, that when we talk about replacing it for a new system will we look at other states. Are there challenges for a new system that might be unique to Georgia in terms of our disabled population?

MS. KUHNS: Well, you know, we talked about this earlier, and I just think it's -- I don't know that it's -- it's not particular to Georgia. We have centralized populations, and people with disabilities -- and I know this is in any state, but in rural areas, people with disabilities can't get transportation to get to doctor's appointments. They can't get transportation to get their groceries.

So getting transportation to get to the voting station so far as I can tell is not covered in any government benefit. So some system that actually finds transportation to the poll -- I don't have the framework for that, but

there should be a system that gets people to the polls, or -- or I believe the future of voting is going to be web-based. You know, when we start -- the system that we have now, 16 years ago was before the iPad and there was a pilot program in West Virginia that they started in two counties for military families to vote via -- it was Android or Apple phone. And I don't know if the answers are out about how successful that was, but apparently they're going to run the pilot into 50 counties I believe. It'll be general election this year, so that would improve accessibility for a lot of people. And I don't know -- I know there's security concerns, but it seems an absentee ballot has much more security concerns than watching technology which I can about, but ...

1

2

3

4

5

6

7

8

9

10

11

12

1.3

14

1.5

16

17

18

19

20

21

22

23

24

25

MS. HOWELL: I can too, but I'll let our security experts speak to that.

Ms. Jones, are there unique needs for our aging population in Georgia?

MS. JONES: I keep hearing that we're going to web-based voting, and the only concerns that I have with that is in rural counties, whether we like to admit it or not, we have a large group of

people who do not have the same educational background as people who come from larger communities who traditionally have had more access to education and technology. So if we're speaking about going to a totally electronic web-based type of voting, I think we need to make sure that the people in the rural counties actually know how to use those systems because if not, what you do is you disenfranchise a large population of people because they will not go to the polls if they feel that they don't know how to use the systems.

1.3

1.5

MS. KUHNS: So it is not my indication that mobile voting should ever be a surrogate for going to the polling place. Americans love to go to the polling place. We're entitled to go to a polling place. Don't think we need to eliminate it, but I think that it could help with a lot of accommodation issues to have that as an opportunity.

MS. HOWELL: Ms. Blake, did you want to add something?

MS. BLAKE: Yeah, I was going to say -- so regardless of what system you end up selecting, whenever you change voting systems, it's always a

challenge, and outreach to voters is really important when you change systems. So I would encourage you to reach out to the disability community here in Georgia, the National Federation of the Blind who I'm affiliated here in Georgia, National Federation of the Blind of Georgia. There are little chapters that I'm affiliated, they have a state convention every year.

1.3

1.5

So all of the local elections officials, I encourage you to reach out to those little chapters and the state affiliate. Take the new voting machine to a chapter meeting so they can try it out before elections. Take it to the state convention. I'm sure there are other organizations of disabled people here in Georgia that, you know, also have local chapters, affiliates, and, you know, those are all great opportunities for y'all to reach out to them, provide them opportunities to practice voting on the new machine. It would make the first election go much, much more smoothly when we do the change.

MS. HOWELL: Ms. Blake, you pilot a -- what sounds like a best practice around the state to

help improve familiarity with the voting systems. You've worked with other states, have you seen other best practices in other states that have more promising practices, that enhance accessibility for individuals with disabilities?

1.3

1.5

MS. BLAKE: Yeah. Poll worker training is really key. You know, I think that's probably the biggest complaint that I get from our members when they show up at the polls. Poll workers haven't set up the machine because they don't know how to set up the machine.

So training poll workers is really key and, you know, again, engage, you know, the local community, the local disability community in that training. Be sure that the training takes place on an actual machine. It's not just a PowerPoint that they're watching. Reach out to the disability community just to serve as poll workers. You know, what better person to have monitoring that machine and setting up that machine and making sure that it works than the person with disabilities, someone who has a vested interest in that machine actually working.

So those are some of the best practices that I would suggest and encourage.

MS. HOWELL: Ms. Kuhns, I know you highlighted some of the challenges. Are there also best practices that you think that a person should be aware of or you would like to recommend?

1.3

MS. KUHNS: Well, a couple things that I read about is that -- so being able to register as permanently disabled for the purposes of voting, Missouri did that, and so not having every year to fill out an application, have it come to you. We don't if you're -- you might not vote in every election because, again, transportation's hard and you have a disability, you might be in the hospital. And you have to vote every three years in order to stay on the rolls. Make it as easy as possible to vote for people who experience difficulty getting to the polls. So just have a permanent registration if I have to vote from afar.

Also, there was another statement. I'm not sure which one it was because, again, people with physical disabilities a lot of times have trouble using the machines, and you can have somebody help you do it, but you're -- once they allow where you can use -- you can have a stamp, you

can sign your name with a stamp because some people just physically cannot sign their name, but they can vote. They have a right to vote. They have opinions about who they want elected and the policies they want them making. So those are just a couple of things.

MS. HOWELL: Ms. Jones, are the things that you've heard from your group, the aging population that they say have -- are policies and practices that have helped them have access?

MS. JONES: I think that most of the older adults that are very active in the electoral process appreciate that the print, you know, is large, and so that helps. The lighting has improved at a lot of polling sites, so that has been very helpful to a lot of older adults voting. I think that if you're looking at changing the technology that we use to vote to remember to use the larger print, of course, and also the type of print, you know, the font, you know, making sure that it's, you know, user-friendly for anyone to be able to read and also the background of the screen being -- having a lot of contrast to the print because if you're using a dark screen and you've got, you know, a

light-colored font or a print, and it's very difficult to be able to see it to read it, and the more your vision is compromised, the more difficult it is for you to read.

1.3

1.5

So looking at all of those things, whether you're looking at shaping a system, making sure that people who have very low vision are able to read and access the voting ballot.

MS. HOWELL: For any of our panelists, are there any of the current features in our current system or in our current practices that we need to make sure that we retain, that really are helping Georgians access voting?

MS. BLAKE: Well, you know, I mean, I think what you have now is a universal system which is -- which is the ideal. I mean, the ideal is a system -- everybody uses the same system. So, you know, if it's possible to maintain that, I would strongly encourage you to do that. I know the financial realities being what they are these days that is not the case. I come from a state where we used to use the same machines we use now. Everybody used the same machine. You know, it just make things so much easier in so many ways, you know, from the administration of the

elections, to poll worker training, to, you know, just so many things. You know, everybody's ballot, you know, is the same. You know, and if it's possible, you know, to maintain that here, I would really strongly encourage you to do that, you know, so, you know -- and, you know, looking at the -- after looking at by mail that's another option, rather than the traditional poll-based. That is another option. Of course then you have to have an accessible way for a disabled voter to access that, access that ballot privately and independently, marking that ballot privately and independently.

1.3

1.5

And, again, electronic ballot delivery is an option there, so universal voting systems are so -- yeah, yeah.

MS. HOWELL: I'm mindful of our time so if there is for our panelists -- I know certainly Ms. Kuhns, if there is one thing you want to make sure that the commission takes away from our discussion today, what would that be?

MS. KUHNS: So even if you have all of the perfect systems in place, the best technology for the most impaired for the most accessible, there is no accessibility without availability, so if

the policies aren't in place that poll workers know what the technology is, what the rights of people that there are, and that it's checked the day of, that these systems are in place, that people know how to use them, and that there are contingencies because every person with a disability is not the same, every person with the same disability experiences things differently. So even if you have all of the right things in place, you've got to have contingencies and there should be a place where we can report this, where it's publicly -- it's publicly available, not to the individual but the problem encountered at the polling place, and also a record of how that individual problem was solved.

MS. HOWELL: Ms. Jones?

1.3

1.5

MS. JONES: The take away, to keep the system as simple as you possibly can so that it remains accessible to all voters, and that's all I have to say.

MS. HOWELL: Lou Ann? Ms. Blake?

MS. BLAKE: Well, I think -- I think it's important for commissioners to keep in mind that the right to vote for a voter with a disability is no different than the right of a voter without

a disability.

And then our right to be able to mark our ballot privately and independently, to be able to cast a ballot that's going to be a secret ballot is the same as that for everybody else. And I think that's really the bottom line. And whatever system will guarantee that, I think that would be the one that would be -- meet your needs the best, meet the needs of all of the voters.

MS. HOWELL: I just wonder if there are any commission members that have questions. Yes?

JUDGE MCCOY: I just have a couple of comments. I'm Darin McCoy, probate court judge and election superintendent from Evans County, Claxton, Georgia.

So just to make sure everybody understands, first of all, about the referendums and the amendments. They definitely can be confusing.

There is a summary that is provided by the state of those amendments in very plain lay terms. It is available in each county election office prior to the general election, and I believe that is also available online from the secretary of state's office, and that is a very helpful tool that I promote in my county for people to prepare

prior to their voting to understand what those amendments mean. And also, I know you are aware, but I want to make sure everybody is aware that there is a provision currently in Georgia law for the disabled voters who were not able to have transportation or for whatever reason to get to the polls and they are provided a ballot for every election in the election year by making just one application and indicating that they're either disabled or elderly. And that is the big advantage that we need to promote to the disabled.

MS. HOWELL: Thank you.

JUDGE MCCOY: Thank you.

MS. HOWELL: Yes?

1.3

1.5

MS. BOREN: Yes. I'm Nancy Boren. I'm from Muscogee County, Georgia, and I have a question for Ms. Blake.

When you discussed the electronic ballot delivery for blind voters, once you receive that e-mail, how will you handle that electronic ballot delivery? Because as we currently do it for our military, they receive an e-mail, but then they have to put it onto a piece of paper and then mail it to us. How would you suggest

handling that EBD, which is what election officials call it?

1.3

MS. BLAKE: Yeah. So I have used the Maryland electronic ballot voting system, what they call an online marking tool since it's been available. And so what happens with that system is I get an e-mail, it has a link to a website where you log in and you access the ballot on that website and mark the ballot, the ballot is very accessible.

Now, to be accessible the systems have to use websites or an HTML ballot, has to be compliant with the web content accessibility guidelines, 2.1(o)(a), and that covers all disabilities, so, you know, it's not just -- it doesn't make it accessibility to somebody who uses a screen reader or screen application. It covers, you know, other disabilities as well.

So I, you know -- and you see my own access technology, my screen reader, my screen magnification software. I'm able to mark that ballot privately and independently and I'm just using my keyboard. So once I finish -- once I mark the ballot, I then print it out and mail it just like anybody else.

And, you know, there's a number of systems that are available that are similar to the Maryland system. A number of different -- you know, Dominion, Five Cedars, Prime Three.

There's a number of them out there.

MS. HOWELL: Yes?

MR. MCDONALD: I wanted to piggyback on Mr. McCoy to make one clarification. The language on those referendums and those amendments, those are determined by the legislative process at the capitol. So when they're drafting it or writing it out, a bunch of lawyers like me -- I once told a civics teacher that came to the capitol it was my job to write things as complicated and ununderstandable as possible to make sure lawyers had jobs.

So we don't write these things so -- it's out of the hands of the process once it gets out of there, and I think that really needs to be clarified because I think the election officials do the best job they can in order to make that communicated, but the way it's written is part of the process.

MR. MCDONALD: Yeah. It was my job to write
those.

1.3

1.5

REPRESENTATIVE FLEMING: Amy, just one comment if I could about that. It's humorous to say that it's written as complicated as possible, but the courts will actually overturn the election results if they determined that the question legally was not written properly to ask the right question.

So that is a constant balancing act when the legislature is trying to ask the public through a voter referendum a question or a change to our constitution. Are we going to set aside what the courts are going to demand because it legally did ask the right question versus putting it in plain enough language?

So it's a constant battle that we have to try to get to a happy medium between those two and actually give the voters something, number one, they can understand, but, number two, giving what the full election contemplates because it was properly written.

MR. MCDONALD: One thing that you said in passing I found interesting was, you know, a big point of verifying who someone is is a signature

or some type of verification. You said that could be a challenge for someone. I think you said something about a stamp or some type of easily functional (indiscernible). Is that something that's mandated by federal law or is it codified anywhere? Or is that -- is that something that would be helpful if it's codified saying that this must be accepted?

1

2

3

4

5

6

7

8

9

10

11

12

1.3

14

1.5

16

17

18

19

20

21

22

23

24

25

MS. KUHNS: It would be helpful if it was codified because the process of -- literally, if I don't have any hands, how do I sign my -- and there are processes by which you can learn to make your mark, but something that's consistent so that it can be verified at other places. Because if somebody's stuck with a provisional ballot, and I guess I said somebody needs to -- I don't know if I said that but if somebody has to do a provisional ballot, somebody better follow up on that in the next three days or else somebody with a disability is disenfranchised. But if it's thrown out because a signature doesn't match or something, then again, disenfranchised.

MS. HOWELL: Thank you all for your questions and contributions, and thank you to our

panelists for your participation today.

(Applause)

1.3

1.5

panel that Nancy Boren, Muscogee County elections and registration director, is going to moderate for us dealing with intergovernmental coordination. I think we're going to get into a little bit about the state and the locals and the board of elections all work together and how this new system may go forward.

MS. BOREN: All right, good morning. I think we've heard what everyone wants to see in the new voting system, and now I think this group is going to tell you how to get -- we're going to kind of talk about the nuts and bolts of the funding, whether it's state funding, whether it's county funding, city funding, how we're actually going to accomplish getting a new system in the state of Georgia.

As you know, the burden of the expense is probably going to fall on the state as well as many of the counties and some of the cities. So we're going to talk about that. I've written down some of the quotes as I listened to the other panels and it's been a great opportunity.

Let's not let perfection be an enemy of greatness. I love that. Senator Thompson said that for us. And we heard from the three panels all the things that they would like to see.

1.3

1.5

And so I think this group talks about from the state perspective, the city perspective, and then the county perspective how we attain the funding and the ability to get what the state of Georgia and the people in the state of Georgia want.

So as we listen to Ms. Young -- or Mr. Young and Ms. Lewis, they said the object is collaboration because everyone is paying for it. And that's true for everyone in the room.

Representative Setzler said: We must fund the right technology for the right purpose.

And so I think this group can provide some information as far as funding. I'll introduce myself and then I'll ask each person on the committee to introduce themselves and give a little bit of information.

My name is Nancy Boren. I'm the director of elections and voter registration in Muscogee County, Georgia. I have held that position for 23 years and I have been in city government for

32 years. My position immediately before elections was the affirmative action officer for our county.

1.3

1.5

But, again, I've been in elections for 23 years and I've had the privilege of implementing optical scan in Muscogee County in 1996 so I'm very familiar with the aspects of optical scan voting.

Of course, technology has changed quite a bit since 1996, but I do understand the unique challenges that are posed through optical scan voting. We now have, of course, the touchscreen voting, and I'm interested in moving forward to see what the state of Georgia will have.

To my right I have Chris Wells with the Governors Office of Planning and Budgeting.

If you would like to take a moment and introduce yourself.

MR. WELLS: Good morning. My name is Chris Wells. I've been with the governor's office now for the last five years and I've had the opportunity to work as an analyst coordinator and currently as a division director. We noticed back in our division that after public safety, after health care, as well as health-care

education, our division kind of has a little bit of discretionary agency, so we have to fight and claw a little bit to make sure our agencies receive all the help they need. But part of my job in the everyday work is to provide independent analysis associated with any recommendations that our agencies may provide.

I previously worked with the Georgia

Department of Labor as a statistical analyst and previously worked with the executive budget office in South Carolina.

MS. BOREN: Thank you.

1.3

1.5

To my right, I have Pam Helton. She represents the Georgia Municipal Association, and that's kind of the city perspective. Counties and cities often are different, so she will give you maybe a city perspective of funding and the approach that cities may take.

MS. HELTON: Thank you.

I am Pam Helton with the Georgia Municipal Association, but I've been in city government for 26 years before I started with GMA. So I did serve as an election superintendent before I left. I think we were the only city in Georgia that had a tie on a liquor referendum, so ...

As you may know, in Georgia there are 538 cities, so we have a lot of needs. The branches of our municipals range from anywhere from Atlanta from almost 500,000 to the city of Edge Hill which has a 24 population. So you can see we're very unique. In that population, 70 percent of those are under 5,000 population, so -- and even 44 percent of those are less than a thousand population.

1.3

1.5

So you can see that we have to look out for our smallest to our largest cities. So there will be some concerns with the funding, what we're going to be required to do, how is it going to affect them, is there going to be some kind of legislative requirements asked of them and also is there going to be the availability of education and training that will be needed? So I think there's a lot of questions that some of our cities have as you go through this process to try to address.

MS. BOREN: And next if we could hear from Todd Edwards. Todd represents the county perspective. He is with the Association of County Commissioners of Georgia.

MR. EDWARDS: Thank you very much.

And I'm Todd Edwards. I'm the deputy
legislative director with the Association of
County Commissioners. We represent all hundred
and fifty-nine counties. Elections are a big
part of what we do. I won't go into all of it,
but we certainly -- Pam from the Municipal
Association, cost is a primary factor to Georgia
governments, to county taxpayers not only
up-front but the purchase of the machines, for
the subsequent training, the replacement of those
machines, et cetera. That certainly weighs in in
any factor.

1.3

1.5

What I do with ACCG, I've been speaking on intergovernmental coordinator. I'm a lobbyist on the advocacy side. So I work with the general assembly on the front end when they're considering legislation such as over, I think, five or six bills last session dealing with the replacement voting machines. We work closely with the secretary of state's office, and I know the office works closely with our local election superintendents.

And right up front, I just wanted to speak on that same note about intergovernmental coordination. With all those bills last year,

until the end, the big concern was over cost of replacement. I think the last versions of the bill had it. I was hopeful that that did not pass but I will commend this commission for getting together. It's a perfect example of working with your local governments. I know there's at least four local election folks on the commission. Getting their input, it's very important. They are our experts. I rely on them as well. But this is a key example of coordinating among our government in Georgia to try to get this right.

Thank you.

1.3

1.5

MS. BOREN: Last but certainly not least is my co-election official Nancy Gay from Columbia County who is hosting this wonderful meeting today.

MS. GAY: Thank you. Thank you for everyone joining us in Columbia County. I am Nancy Gay, the executive director. I'm kind of a newbie here. I've been the director for five years so I'm still kind of learning the way. I've been with the county for 18 years. Served the first 13 as the registrar for the county. So I do have a little bit of experience. I went through the

transition from the paper ballots back in 2000, 2002 and the DREs, so ... it was fun. It was entertaining and the public really -- I thought they received it well. So going in to this new transition should be exciting. We do have two cities in Columbia County that are kind of different in size. Harlem is maybe 2,000 registered voters and Burke County is right at a thousand. So it should be interesting to move forward with this.

1.3

1.5

MS. BOREN: Mr. Wells, if you could provide for us, coming from the governor's office, the process of obtaining funding for a statewide issue like this.

MR. WELLS: So this is actually a perfect time. Usually September 1, by law, agencies have to submit their agency recommendations as well as their budget. This year because we have the holiday it will be September 4th, but during that time, agencies will be able to submit their requests.

The office of the secretary of state is actually within our division and so we've been working with them throughout the summer to establish some guidelines and some goals related

to how to submit a request of this nature in the system. Currently, just based on the rules and regulations, we have a certain amount of capital bonds that agencies are allowed to request. And so we're -- we disseminate that particular amount across most of our agencies.

1.3

1.5

In this particular year, we provided the office of the secretary of state about 25-million in a bond planning amount. And so by that process, we're able to evaluate for the next six months of what is the total cost, look at this panel, look at what the recommendations are, work with the general assembly when the governor submits his recommendation in January, make a determination of what will that ultimate number be.

So right now we're under the process of just evaluating; knowing that the current administration as well as the next administration and general assembly would have a say in terms of what that ultimate number will be. And so because we're working closely with our agencies and their counterparts, we'll know in January what that initial number will be. We'll know throughout the legislative process what the

counterparts in the House and Senate may recommend. And usually around May, the governor has an opportunity to sign the budget, and from that point, whatever number is settled on between the general assembly and the governor's office, it may be a bond. And if it's a bond, we usually sell bonds in July of each year. And so we would probably see a lot of movement, again, in May when the governor signs the budget, in July when those bonds come up for sale, and potentially provide the office of the secretary of state the opportunity to enter into any type of RFI to be to secure whatever recommendations that come with this panel, the general assembly, and the next governor.

1.3

MS. BOREN: So kind of May is the deadline
or the focus point for budgetary items?

MR. WELLS: Ultimately, an opportunity to see what the appropriations process and what the general assembly may request also during that time. So usually around January, I'm assuming that this will probably be one of the topics that will be of discussion and so as you see the appropriations bill pass through the House and the Senate, through conference you'll probably

start seeing a lot of the recommendations related to funding that come about, and so that is usually where we see a little bit of movement, and again in May, you'll be able to see what the governor may sign and prepare. The decisions will be made in terms of bond allocation, what's being sold, based on those particular recommendations.

1.3

1.5

MS. BOREN: And I do believe I'm correct, with the implementation system that we have now, the state expended \$54 million if that is correct, I believe, in 2001, to implement the system that we have now. That does not include funding that each of the counties and cities chose on their own to purchase additional equipment.

So from the city perspective, cities have the option currently, under current law, to use the touchscreen voting that we have or they can use other technology. If you could speak to that just a little bit.

MS. HELTON: Actually cities like being able to have that choice, to be able to use a paper ballot or the old sheet machine or optical scan or even to contract with the counties to hold

their elections for them. So they like having that option to go do that, and I think that's important.

1.3

1.5

MS. BOREN: Okay, and you can tell us about county input that you get as far as: We don't have enough money or, you know, our county needs to buy a fire truck and we don't have enough money for extra voting equipment.

MR. EDWARDS: Well, because I usually tell most folks about what I do for living or how to explain everything most people deal with, it's going to be about money one way or another. I did call several of our members, including our elections folks, prior to coming down here.

Our overall thoughts, if we do agree that it's time to replace Georgia's voting equipment, I think that's pretty clear obviously security is an issue: tampering, hacking, all of that. We do also believe uniform systems across the state will work.

We appreciate the state putting up the funding in advance last time, the state and federal government. We hope to work together with them this year again in that regard. I think some of the concerns with the old equipment

is when you -- well, even though the state initially paid for it, replacing it over the years is not always easy. You have to buy some used. A lot of times it comes with technical difficulties, so I think there's a wide acceptance of replacing it, and then when they do get them, they're not in good shape.

So we're on board. We look forward to working with you, but I think it's -- again, as I stated earlier, this is the time and we hope to get it right.

MS. BOREN: And, Nancy, I -- Nancy and Nancy. I do believe that in the county -- obviously, I don't know what priority elections are as far as your county expenditures, but often we see that it's fire trucks and public safety and salary adjustments. How would you say that your county would be receptive to expending lots of money to change your voting system?

MS. GAY: They wouldn't. Sorry. I mean, fortunately for Columbia County, the -- I might be going out on a limb here, where we might be better off financially -- not to say we're loaded or anything, but the cost is a factor and nobody wants to come out and come out of pocket for it.

So if the state can mirror what they did back in 2002, I think that would be beneficial to all of the counties and the municipalities in the state. I know for our two cities, they would have a hard time funding anything, and so they depend on us to conduct the elections. And we do have a contract so I try to keep their expenses as low as possible. But for the county as a whole, I'm going to go to my county commission and ask them for additional money to buy additional equipment because I like to be overly prepared.

1.3

1.5

MS. BOREN: Mr. Edwards, do you see different concerns from counties that are more rural? Say economic issues? Do they have greater concerns?

MR. EDWARDS: Certainly, and that's usually the case in most issues that we deal with across the state. A panelist mentioned earlier the difference between the size of the cities in the state. The counties are the same, we have several right around or below the 2,000 population, and, obviously, four or five in the metro area that are right around or above 1 million. Any decision like this will definitely impact the smaller, rural, less

affluent counties more than it will the larger. I mean, obviously, it's going to be a larger expense with all of the additional equipment for the larger counties, and you're going to find that they may be able to have a little bit more leeway. And I can't speak for all of them, certainly, in this disregard, but it's going to have a disproportionate impact on Georgia's rural and smaller counties right at a time when they can least afford it.

MS. HELTON: May I?

1.3

1.5

MS. BOREN: Sure. Please.

MS. HELTON: We've probably got about half of our cities that still do their own elections, that do not contract with the counties to hold their elections. So we really have to think about those cities too as we move forward with this process.

REPRESENTATIVE FLEMING: Nancy, I have a question if I may --

MS. BOREN: Yes.

REPRESENTATIVE FLEMING: -- that I think blends well with this portion of the program.

We're here to discuss getting a new voting system for the whole state of Georgia. Some people are

throwing around the figure \$100 million, plus or minus depending on what kind of system we get.

Many of us remember back in 2002 how big a change that was for some people to learn how to touch these fancy computer things and have their vote recorded. And we tend to forget the trepidations that some people had for a system. It worked out pretty well and served us well.

1.3

So I got a question the other day from one of my constituents that said: Hey, why do you want to change? What's wrong? I have learned how to do this thing now. Why do we want to get new machines?

And, Nancy, I asked that question maybe to you or anybody else. I remember when you came to the capitol and testified before the committee that I was chairing about this issue. You talked about the fact that when we first started in 2002, Columbia County had less maybe than a hundred thousand people. Now, it has close to maybe a hundred and sixty thousand. You've had to go out and get new machines because, number one -- and you commented on this -- you didn't have enough, and, number two, some of the ones you had had -- like any other piece of equipment

had had a problem and you had to replace them.

1.3

1.5

So talk about the status of our current machines and why we're here talking about spending all this money on new equipment.

MS. GAY: Well, I can only speak for Columbia County, and currently we do have 94,000 active registered voters. If you combine the inactive, that's a hundred and thirty thousand.

In our inventory we have just over 500 total voting units. Some of them, the bulk of it, I think 360 of them, are the original 2002 R6 models. Out of those 40, maybe 50, of them no longer work. We do -- we have been very creative in making them last this long. Some of them might have some duct tape on them, but, you know, they still work.

The actual voting unit itself is great. The life of it has done very well. In 2016, I think it was, I purchased -- or it might've been last year, I purchased a hundred and twenty newer machines from California because they don't make these units any more, so, you know, as a growing county, I am -- I'm really stuck.

So I hope we don't grow too much more right now because I'm at my limit. I don't have any

more units to put out. So if they break, then that means longer voting time for the voters.

1.3

1.5

MR. EDWARDS: May I please add to that? She brings up a good point. And, you know, it is a partnership. Obviously we're asking that the state advocate for initial costs up-front, but that doesn't mean that the counties are necessarily getting a free ride. There are all sorts of other costs involved that particularly -- we mentioned before the training for the replacement. That might be difficult.

But that was a big -- you know, one of the biggest questions we get is, you know, how -- there are concerns are over replacement issues, being able to find them and the condition of them.

And so it's not -- it is a partnership with both paying (speaking out of microphone range).

Sorry.

SENATOR STRICKLAND: Nancy, I have a question as well on making change. There's currently a federal lawsuit pending that's asking -- the group's asking the state for the paper ballots for this fall's election, which I believe early voting is a month and a half away

from starting or less now.

1.3

1.5

Todd, do you have any perspective on behalf of the counties as to how that could work?

MR. EDWARDS: Well, obviously we're aware
of --

Do you want it?

MS. GAY: No.

MR. EDWARDS: Okay. We're aware of the concerns with the current machines with the issues. They're being looked at. But also are greatly concerned with the impact this would have on such a quick turnaround prior to the November election.

I don't think there's one magic bullet that's going to solve all of this, but I -- you've got to balance with what are the potential risks, what sort of complications would switching in a short time frame be. You're going to have to require -- you know, require the light inventory.

I talked to some of our folks. Train local officials and folks on how to vote on whatever ballot you put out there. I think there is going to be confusion. I think one thing we heard earlier, at -- I believe it was the last meeting

of this commission about Virginia doing it in such a short time frame.

1.3

1.5

When Virginia did it, it already had legislation passed the previous year that set out a two- or three-year time frame to replace all of them. They were in the middle of the process and when they got the -- I guess it was a recertification of the DRE systems, at that time -- and I wrote down some numbers -- there were only 13 localities in the state that had to make that change. Or I think there were about 20 total. Seven of those are already in the process. We're dealing with only a couple thousand -- let's see, about a hundred and ninety thousand voters out of 5 million. That pales in comparison to the task we would have in front of us today here in Georgia.

We do have concerns. Again, you're going to have to weigh the benefits of us sticking with the current machinery and paper ballots, but I believe it would be quite challenging for counties and voters in the state to pull it off.

MS. GAY: (speaking out of the range of the microphone) I'm sorry. For me, from my standpoint, this is going to sound crazy, I'm not

worried about the staffing or the poll worker. I would be more concerned with the confusion for the voter if you try and make that kind of change in such a short time frame because it's just unfair to them, having to try learn something on short notice. And the confusion of it, they don't need that, but that's not what this is about, so ...

1.3

1.5

MR. EDWARDS: If I -- and real quick, one of the questions -- I did follow the Virginia Association of Counties. One of the big issues they had was making sure if they're going to do something like that, the rule was in place of what is a vote, what counts as a vote. We talked about overvoting and mismarking a ballot. You're going to have to have those rules in place to make sure that the voters and the poll workers understand them beforehand and I'm not sure we do.

MS. BOREN: And just a little perspective from me. Again, I implemented the optical scan voting in Muscogee County in 1996, and at that time, we did not have a vote review panel to determine voter intent. And so many of the ballots that were voted --

I went back and looked at the 2000 presidential election. As we were converting to the DRE voting, many of the choices were clear, who the voter wanted to vote for but because of current legislation, we could not reject that ballot. It was rejected as an overvote even though they had voted for a candidate and then had marked or bubbled-in the write-in line and written the same candidate's name in. Voter intent was extremely clear, but it was an overvote because the law wouldn't provide us to send it back or to give it to that voter for them to fix.

So there are a lot of issues that you have to think about in paper balloting.

Ms. Bailey, I believe you had a question.

MS. BAILEY: Yes, I do. This is Lynn Bailey from -- local election official from Richmond County. It's a question going to -- going back to cost. I know when we made the transition in 2002, the counties were able to write it on the contract to purchase additional equipment.

And I don't know if you've heard from any of your constituents, Mr. Edwards, from a county's perspective if that's desirable, but I would

imagine it would be, and I would hope that we could consider putting that into the contract moving forward.

1.3

MR. EDWARDS: I think our voters would be most pleased with that, ma'am.

DR. LEE: Thank you. So this may be a crazy question, and if so, forgive my ignorance. So it seems if we spend all of the money up-front, we kind of tend to stick with it for a long time. So from a cyber security point of view, we may establish too short (indiscernible), right, to meet with the degrees of threats.

So why can't we lease the systems? Suppose we keep the templates the same so we don't have to cause voter confusions. So can we do anything like that?

MS. BOREN: So the possibility of leasing new equipment to use it through an intergovernmental lease through a company, is that your question? That's definitely a legal question, and I'm sure that somehow we would be able to do that.

SECRETARY KEMP: Well, I would say I think that's a very good question. I think that is something that certainly this commission can talk

about. It's certainly an option. I mean, we've had that option with other systems that we have. I think that also is up to the vendor community and what they're willing to do and then also what the legislature would be comfortable with. You go through the appropriations process to decide what's the most cost-effective way to do that. So I think that's certainly something that will remain on the table in my opinion.

REPRESENTATIVE FLEMING: I agree.

1.3

1.5

MS. BOREN: And my one fear with that would be, again, voter confusion. You have one set up voting for a couple of years and then you change it again. And there's that upward education, that you have to educate voters. We have 6 million voters in Georgia. That would be a difficult process to change paperwork and procedures over a short span or period just because you think you have a better technology. I think we want to move slowly on that leasing of equipment to use for a short period of time.

Again, that's my opinion, and I don't know how you want to respond to that.

MR. WELLS: Again, from a technical side, like I said, funding, sometimes once you to fund

certain things which -- for example, in using bond funds, there are certain requirements, like the state has the only asset and certain things of that nature. So I think the secretary made a perfect point in terms of it'll be a collaboration effort from the governor's office with the general assembly to determine what's the best approach.

And I think that once the approach is agreed upon, I think, the governor's office and the office of planning and budget would definitely work very hard to make sure that the money is available and that it's -- basically, it can execute being able to get the money to our partners at the local level.

MR. MCDONALD: Follow up?

MS. BOREN: Yes.

1.3

1.5

MR. MCDONALD: This might be a question for him (indicating) from a technology standpoint, but when we talk about the technology, we have machines that actually process the process. But the cyber security, is there any way of segregating those two things in the sense that we have the same process for the voter utilizing pushing the buttons, but as technology evolves,

the cyber security in there is something that might be being leased and actually evolving with the same system so that what we're not doing is changing whole system every time we have a cyber-security issue. Rather the system is the same but we're treating the security for that system different. I just don't know if that's even technically possible or is it a one -- is it a package deal?

DR. LEE: It's possible.

1.3

1.5

REPRESENTATIVE FLEMING: This is just along those lines if I may, Nancy.

The secretary and I were just mentioning that when we began with the current system, the machines we had in 2002, the back-room process or the behind-the-scenes of how all that is counted and tabulated has changed with different software and different changes, although the voter interaction has changed very little. All the upgrades behind the scenes have occurred and with significant expenditures sometimes to keep the system rolling, so ...

MS. WELCH: Cynthia Welch with Rockdale

County, election supervisor. I think it needs to

be clear that any system that we consider for the

state of Georgia, that we continue as we have the system today. Our election system has no Internet accessibility. So when we talk about cyber security, it's more or less for our voter-registration side, our poll-book side when you talk about hacking. But when you talk about actually counting ballots, votes being cast on voting machines, there are no Internet connectivity whatsoever.

1.3

1.5

So we need to be clear about that when we talk about cyber security, that we're not talking about the vote that has been cast by the voter, again, the vote that are being counted, because that is not at risk because, again, there is no connectivity there.

REPRESENTATIVE FLEMING: Nancy, if I may once again, Cynthia is exactly right. I've made this point when I have received questions about what this panel is trying to do in the current system.

When you touch the screen to vote, that machine is not connected to the Internet. When those machines are gathered together by Nancy and Nancy to tabulate them, the computer that tabulates them is not connected to the Internet.

It produces a disk which is picked up by, ultimately, the secretary of state's office and state patrol office -- or where they pick it up. Transmitting the official results to Atlanta is not by Internet. When it gets to Atlanta to the secretary of state's office, the system there that combines all of that data from 159 counties is not connected to the Internet.

1.3

1.5

And so that point is well-taken that our current -- you can't hack it through getting in through the Internet. You would have to physically be there just like you would with any other system if you tried something mischievous.

And may I add that there are paper-copy backups of our tabulations that are in three places: secretary of state's office, in the election superintendent's office, and we're required to file that third copy with the superior court clerk of that county. So there is a paper backup of the tabulation that matches that that goes to Atlanta.

MS. BOREN: All right. I think that ends our few moments on the panel unless anyone else has any questions.

Yes, secretary.

SECRETARY KEMP: If y'all don't mind, I just want to make a quick announcement before we go to break. First of all -- well, let me just say that we're -- for the commission itself, we have lunch next door. This is a commission member-only lunch where going to have kind of a lunch-and-learn luncheon with the commission.

We'll try to be back -- if everyone in the audience would be back at 12:55, we'll try to get started right at 1:00 with the demonstrations.

And please help me thank our last panel of the morning. Thank you very much.

(Break for lunch)

1.3

1.5

REPRESENTATIVE FLEMING: We are going to begin the portion of our meeting with vendor demonstrations. We have set aside approximately 30 minutes for each one of our vendors and maybe about 25 minutes for the demonstration and about five minutes for questions. Of course, I understand we're starting to a tad late. We're not going to penalize anybody for that. I'm keeping time.

We will begin the demonstration portion with Clear Ballot.

And you've got a mic there so I'm going to

allow you to introduce yourself and I'll allow you to take off.

MR. MURPHY: Thank you very much, Mr. Chairman.

1.3

1.5

REPRESENTATIVE FLEMING: Yes.

MR. MURPHY: First of all, I want to thank the SAFE Commission and the secretary of state's office for the opportunity to come in here and introduce us.

My name is Bill Murphy. I'm the director of sales for Clear Ballot. I would also like to thank American Audio Visual Services for helping me navigate at another conference A/V setup.

It's always fun and exciting.

My goal today is to introduce you to Clear Ballot. We are the newest voting system to be certified through the TAC and I think that our system aligns very much to a lot of the things that you guys have been discussing today.

And it's my goal today to show you, through a few videos and a demonstration of our product and any questions that you guys might have, what Clear Ballot is all about and how we can potentially help the state of Georgia to accomplish the objectives that you guys have got

set out in front of you, so ...

1.3

1.5

Clear Ballot was founded in 2009, and we were founded as an audit system. Our core technology is principally an audit system. So transparency, auditability, and resilience is built into our DNA. And those are the things that I have heard over and over today as being critical to what you guys are looking for in moving forward.

We are currently certified in seven states from around the country operating as a voting system and audit system. We like to call ourselves a smart digital scan system as opposed to an optical scan system. And for some of the reasons that I'm going to talk about, hopefully that becomes clear.

But the whole objective of our company and the founding principles of our organization are to put as much control back into the hands of the jurisdictions to make smart decisions both from a financial perspective, have confidence in the results, and be able to prove that every vote was counted as cast.

And I'm going to show a quick video now from a few of the members of our team and a few of our

current customers talking about the system and what it's brought to their organization.

(Recording played)

1.3

1.5

MR. MURPHY: The architecture of our system is very simple. We designed it that way. It starts with our ballot design tool. A lot of the questions that people had mentioned or a lot of the comments that people mentioned about accessibility, large-print ballots, UOCAVA ballots, in our system, none of those ballots would need to be proofed in a secondary way or remade manually which is one of the limitations of a lot of the things that are out there now. They have to remake the ballots in order to tabulate.

Our system allows you to maintain the actual voter record as it was cast by the voter without any interpretation by an election official or by the technology in the middle of that process.

So design caption creates those ballots. It creates the media that's populated to both our accessible touchscreen voting system and our ClearCast tabulator.

And then the results from the ClearCast tabulator are then aggregated through our central

tabulation system, ClearCount, which is what you saw a little bit of a preview there just now, and then I've got the actual system pulled up. So I'm going to jump into that after I get done with this quick presentation.

1.3

1.5

ClearDesign, one of the nice things about our system is that everything is built on a browser interface. The core system is offline. It's a closed system, but we're leveraging a browser interface with navigation and it allows us to do a lot of things with the usability of the product that -- it's harder in a hard-coded gooey interface. That's a little geeky. You know, the end result is it's easier to use and it's faster to do the things that people do on a regular basis.

Our largest client is Voting Systems King down in Washington which is Seattle, which has about 17,000 ballot styles. And in King County, through the -- when we first started talking to them, through the procurement process, I believe they said it took them over a week to generate their ballots. And with us, they were able to cut that down to just a couple of days, so a lot of exponential time savings and the cost savings

involved.

1.3

1.5

This is a quick video with regard to our precinct tabulator which is an optical scan ballot reader. And hopefully this will give you some idea how the voters in the precincts would cast their ballots.

(Recording played)

MR. MURPHY: Now, one of the things that's paramount of the ClearVote system is an identical paper ballot for every voter. The accessibility voting panel that was up here -- and one of the folks mentioned that, you know, having a ballot that distinguishes somebody that voted on a separate system because it looks different, you know -- is an issue with voter anonymity, and I think that it stands in the way of disabled voters voting independently, and we believe that the identical paper ballot is key to auditability and key to making the system accessible for all without any reinterpretations.

Every ballot that is produced through our accessible voting system would be submitted through our tabulator here. So there would be a paper ballot for every voter that could be audited, and I am of the opinion that, you know,

when you talk about security, having an identical paper ballot for every voter that came into the polls is the best form of security that you can have because you've always had physical record of the election that you can go back to to check the results if there is any question.

1.3

1.5

We also have a version of this machine.

Same machine, but in this picture here, you're seeing the larger ballot box which is also a secure part of the system; and for the larger jurisdictions, a better fit, so ...

Everything with the exception of the ClearCast tabulator that I just showed you is a commercial off-the-shelf piece of hardware. So I think we -- again, going back to the idea that we want to allow you guys to make, you know, smart decisions to maintain current hardware, if new hardware comes out, we believe that that's the best way.

So from a central tabulation perspective, we use commercial off-the-shelf scanners from the accessible ballot-marking device. We use commercial laptops, commercial printers which allow you guys to keep the costs down and also allows for a longer usable life and an easy

transition should new hardware become available that offer significant value, so ...

1.3

1.5

We also leverage the anywhere ballot which is a EAC-funded voting wizard. There was some discussion about, you know, down the road, you know, if different voting channels open up for ballot-delivery-only voting, we don't do that now, but the Anywhere Ballot was designed to allow for voting on any platform.

So, you know, our whole system is built to allow you guys to stay ahead of curves so you don't have to rethink your entire voting system should things change. And if anybody thinks that, you know, elections is going to not change from this point into the next ten years, I think you probably would find a lot of people with a different opinion, so ...

And then really the engine and the -- what I feel is the most important part of our system is our tabulation-and-results presentation. And what we do is we take a high-quality image of that ballot and then we take every voting mark on that image and we organize it. So our system is in place to capture the ballot image, organize that data, and then present it to you guys as

election officials to show you how we interpreted those marks and present them to you so you can essentially validate what we have counted in a tabulation.

1.3

1.5

And that's going to lead me to -- the question that I think -- and this is a, you know, rhetorical question, you know. If transparency and auditability is important, I think that you should look at ClearBallot and consider us because I feel like we're giving you a picture and a window into the election that no one else can provide.

And I'm going to jump in -- I'm going to put down my microphone for a second and switch laptops.

What I'm showing you right now is the actual system that your election officials would be using on election night. After the polls have closed and results have come in, people are bringing back their thumb drives just like you guys do today. We aggregate them through the system.

And I'm going to show you a few examples of things that have been pointed out today. And how will we show you those examples and how we allow

you to manage them and really provide you with a set of data that you've never had before. And I think that's going to be really important when you're looking at the next voting system that you guys are going to invest in. The data that you're about to see is going to allow you to do so many things, from poll-worker training to, you know, identifying trends in polling places to identifying equipment that needs maintenance, and that's really where I think we shine.

1.3

1.5

So what I've just done is I've clicked on our statement of votes cast and it shows me every contest and because we're running a browser, every one of these blue buttons is a live link that I can go into. So if I wanted to look at the votes cast for George Smith, I can click on that and it's now going to pull up every vote that was cast for this candidate in this contest. And it's going to organize them by our system's contents.

So this is 86 votes, this is our demo database. But if I scroll over any one of these particular marks, it's going to pull up the entire contents area. So I can look and see if there's anything in there that needs attention or

anything in there that's worth note. And then if I click on it, I can pull up the entire ballot, and it shows me in 200 dpi, you know, how each one of the votes was cast. It's got a little legend here. Green means that there was a vote counted. And we actually have an annotated version of this, that if you click on this, it'll show you almost a real-life audit of that ballot. So you can see the green is where we counted the vote for that particular candidate.

So you can visually audit any ballot on the spot. But these are ballots that we counted as votes and we're not asking you guys to relitigate that, we're just presenting them to you so you can see them.

But one of the things where it really does come into play is in the case of overvotes, okay. Coming up as an audit system and working a lot of vote-by-mail states, we see a lot of things that most precinct tabulators would catch and filter out, but you can quickly go over these overvotes and see pretty clearly that these are all overvotes. But in a case like this, that might be something that in a close contest or depending on how you guys handle overvotes in a regular

situation, you might want to look at that. And here, you know, you might want to present that to your commissioners and say is that something where voter intent may be clear and is that something that we should change. And if you wanted to change this, our system gives the ability to modify our adjudication without ever having to alter the physical ballot as cast by the voter which is important because --

1

2

3

4

5

6

7

8

9

10

11

12

1.3

14

1.5

16

17

18

19

20

21

22

23

24

25

I had a conversation about this with an election official in New Orleans at Election Center this week. And they said: Well, if you don't change it, how are they going to know what the voter's intent was. And I said: Pull that ballot up. Is there going to be any question about why you changed that vote? And we log in to -- if I go to this ballot, you'll see how this works. I can just deselect Martin. It's going to ask me if that's what I want to do and I can save. And that's now going to change to a vote for George Green, but it is logged that I am the user that has made that change and it will log the time that I've done it. And then, if I go back to the statement of votes cast and refresh this, you'll see now that the total for George

Smith increased from 83 to 84.

1.3

1.5

Now, I'll show you one more example and then we can take some questions. There was -- there was a -- somebody had pointed out that undervotes, you know, are something that happen and sometimes they are important, sometimes they're not, but this is an example that I wanted to show you where an undervote may go -- an undervote may not be cast in the way the voter intended.

pull up any events in the candidate area that might be important for you guys to look at. In this case they circled the candidate, which happens sometimes, but if click on that ballot, you can see that there are a few votes here where it actually went through the candidate area. So this might — it might've been caught as an undervote on one contest where the votes in contests where it passed through the oval. In this case it didn't look like any of those registered, but if it did, that ballot would pass through the precinct scanner and it would — it wouldn't raise any red flags, it wouldn't be caught as a — I think it is flagged for an

unmarked ballot.

But with this, because those votes were -there was a vote on the ballot, it's going to
stand. It's going to count the other ones as
undervotes, and voter intent would be missed. So
we give you the visibility to ensure that voter
intent is captured as cast and we show you the
math behind every one of the numbers on our
system, the tabulation that we've presented as
the accurate tabulation of the election. And we
organize it in a way that allows you guys to make
decisions and proof that you guys have done
everything the right way.

So that's what I think ClearBallot brings to the table that makes us unique. And this was kind of quick. I'll take any questions that you guys have and I look forward to continuing the conversation with you guys and continue this journey.

REPRESENTATIVE FLEMING: Bill, we appreciate your presentation. It's Bill, right?

MR. MURPHY: Yes, sir.

REPRESENTATIVE FLEMING: Bill Murphy?

MR. MURPHY: Yes, sir.

REPRESENTATIVE FLEMING: Okay. One question

I might start off and you may not have the answer to this, but any idea how much it would cost Georgia to purchase your system for all hundred and fifty-nine counties we've got?

1.3

1.5

 ${\tt MR.~MURPHY:}$ I was told there would be no math.

REPRESENTATIVE FLEMING: I know it's a big question at this stage of the game so I understand if you wouldn't have those figures.

MR. MURPHY: I think that the figures that you guys have been throwing out are probably in the right ballpark. I think it's going to come down to when you guys put your RFP out, you know, what are the types of services that you want, you know, from the vendor to support you or what kind of ancillary systems will be integrated in with the system.

I can tell you as an optical scanning system or a digital scanning system, our footprint in the precinct is probably as small as you can get. We advocate, you know, a one-to-one set-up for our precincts to have the ability to have an accessible machine in precincts under 2,500 registered voters and then, you know, for every registered voter over that many we would add

another precinct tabulator to make sure that the lines are moving basically.

1.3

1.5

REPRESENTATIVE FLEMING: Bill, how long has your system been around? How long has someone been using this system?

MR. MURPHY: We were founded in 2009 and we've been working as a voting system since 2015.

REPRESENTATIVE FLEMING: And I think you said King County, Washington was your largest user at this point?

MR. MURPHY: They're our largest voting-system client and they purchased at the beginning of last year. We also work with Broward County, Florida, which is pending an audit, and the way that they use our system as an audit system is they do a secondary tabulation of every ballot.

So they want this -- it's almost like a ballot census. So they're using our system after the ballots go into their warehouse, then archive these digitally, then they put the paper away so they have to -- to do that.

REPRESENTATIVE FLEMING: I'll look around the table and I'll start taking questions from the panel, and I'll start over here with Jimmy.

1 Go

Go ahead.

MR. MCDONALD: I want to make sure I
understand this right.

REPRESENTATIVE FLEMING: Jimmy, talk into your mic there real good.

MR. MCDONALD: Let me make sure I'm understanding this right. So you have machines that would be part of the processing system that scan and -- so does that mean that the jurisdictions would also have to maintain a paper system as well? Because it seemed like if there was a paper ballot that was being filled out and having to be scanned into the machine and the tabulation and the maintenance paper ballot system would be part of a -- so are there two separate costs here as far as administrating the election, as far as maintaining the machines and the purchase of the machines, still having to maintain paper ballots?

MR. MURPHY: Let me make sure I understand the question correctly. So the answer to your question is yes there's a paper ballot for every voter. And you guys would either print those paper ballots out in the precinct on demand so as the voter comes up you can print the ballot on

1 demand for them or you would preprint those 2 ballots. 3 MR. MCDONALD: There's a paper component to 4 this. MR. MURPHY: This is 100 percent paper. 5 There is an identical paper ballot for every 6 7 voter that comes through the polling place, yes. REPRESENTATIVE FLEMING: And sometimes is it 8 necessary for a voter to use multiple pages of 9 10 paper, I would assume? 11 MR. MURPHY: It depends on your election. 12 REPRESENTATIVE FLEMING: Right. 1.3 MR. MURPHY: We have worked with up to four-page -- four-card ballots. 14 1.5 **REPRESENTATIVE FLEMING:** Okay. 16 As I come around the room, questions? 17 Looking around the room. 18 Amy, do you have one? Go ahead. 19 MS. HOWELL: So clarify for me as to the 20 paper process when it comes to access for 21 individuals with disabilities. It's 22 computer-based or ... 23 MR. MURPHY: Yes. We have a cost-based 24 touchscreen voting system which is based off the 25 Anywhere Ballot, which is a VAC-funded voting

wizard. It produces an identical paper ballot so in the system you cannot distinguish the ballots that were printed off by the accessible system from the preprinted ballots.

And when they're in the system, they're identical. I think that's -- make sure I've -- did that answer your question?

MS. HOWELL: You did. Thank you.

MR. MURPHY: Oh, the other thing I wanted to say too, there's no tabulation done on that accessible voting system. It is just a ballot-marking device.

REPRESENTATIVE FLEMING: You've got about five minutes left so I'm going to continue coming around the table.

Do you have a question right here? Sheila, did you have a question?

MS. ROSS: So when in the process would the ballot be scanned? Is it while the voter is still present or after or it's up to the individual precinct or how does that work?

MR. MURPHY: In the precinct, in the polling location, they would mark their ballot on -- in the voting booth, and then they would scan they would scan the ballot through the precinct

1 tabulator like they were showing in the video. 2 They just slide it through. 3 MS. ROSS: So the voter would slide it 4 through themselves? MR. MURPHY: Yes. 5 MS. ROSS: And how long does that take to 6 7 scan a ballot? MR. MURPHY: About three to four seconds. 8 9 MS. ROSS: Regardless of how long the ballot 10 is? MR. MURPHY: 11 Yes. 12 REPRESENTATIVE FLEMING: Nancy? 1.3 MS. BOREN: (inaudible) 14 REPRESENTATIVE FLEMING: Turn your mic on. 1.5 MS. BOREN: At the end of the voting day, 16 would the election workers certify this contest 17 or is that part of the post-election process? 18 before certification of an election, at what 19 point do you look at the marks to determine 20 undervotes, overvotes, votes that are on the 21 ballot? 22 MR. MURPHY: It depends on the state's 23 rules. You know, we've worked with jurisdictions 24 that do it differently in different places. We

can help you in the transition to figure out what

25

works best. Most people look at the overvotes, but depending on the law on how you decide it, some people -- I know specifically with RLAs (phonetic) it focuses on margin.

1.3

1.5

So if there are contests with close margins, you know, you could, you know, evaluate and look in the audits of those votes that were not counted or ballots that were not counted as votes to see if there was any uncaptured event.

But it's really more of a decision for the jurisdiction. You know, our job, I think, in this process is to present you guys with the tools to do whatever you need to do in the easiest way possible.

REPRESENTATIVE FLEMING: Continue around the table. Right here. Lynn?

MS. BAILEY: Thank you, Mr. Chair.

Can you tell us in a nutshell how your system works in terms of a recount and the ability to isolate one particular race for a deeper look.

MR. MURPHY: Yeah. Yeah. So that's a great question. I usually tell this example when we talk about recounts because it was a situation -- we were working in Colorado. It was a first-time

clerk so it was his first election and we were -they were using our system for the first time.

So there was a lot of firsts in this election for
him, and it was at the end of the night. There
was about three contests at the local -- you
know, small contests that were within a three- or
four-vote difference.

1.3

1.5

And in Colorado, they adjudicated all of their overvotes during the election process, that they do their vote-by-mail and they do early-voting. So they had looked at all of the overvotes that our system pulled up to make sure that they applied to state law. And his first reaction at the end of the night, at two in the morning when he realized that there were these three -- three contests were less full, all of that -- all of those ballots I want to rescan to make sure that we counted everything correctly. I want to -- I was like: That may not be the best idea at two in the morning. Why don't we look at the dashboard first.

And we were able to go through each contest in about ten minutes and look at every vote that we counted, look at every vote that was counted as an overvote that they had adjudicated and

classified as an overvote, look at everything that they had changed, and look at every uncaptured ballot where there wasn't a vote for that particular candidate but to look to see if there was anything in there that could be interpreted as intent.

1.3

1.5

And in about ten minutes, he looked at all three contests and said: I'm going to bed. I'm fine. And when the candidates came in the next day, he showed them the dashboard and they shook hands and they said congratulations because he was able to show them the math behind the tabulation number, and they saw very quickly that there wasn't anything there that they were going to be able overturn with.

REPRESENTATIVE FLEMING: Judge, you look like you have a question.

JUDGE MCCOY: What about ballot-marking stations, booths for voters to actually privately mark these ballots? Is that something that comes with the package, or are we going to have to deal with that issue separately?

MR. MURPHY: No, that's part of the system that we would provide. I think there are probably going to be a lot of things from

whatever vendor you guys decide to go through from an infrastructure perspective that the jurisdictions will have to, you know, use to upfit their precinct voting, ballot booths, you know, little ballot booths or one of those things. There's a lot of options out there, but we've got a few that we think are good, both, you know, high cost and, you know, top of the line, and, you know, low-cost versions. So it depends on what you guys prefer.

1.3

1.5

MS. HOLDEN: Yes, I'm Deirdre Holden,
Paulding County election supervisor in Dallas,
Georgia. I have two questions. First question
is when we were listening to our panels, there
was a discussion of when that ballot is put
through the tabulator if there is an overvote,
does it kick that ballot back out and give that
voter the opportunity to correct that?

MR. MURPHY: Yes, ma'am. Yep.

MS. HOLDEN: Second question: Currently with the system that we have in Paulding, I do have ballots -- I will tell you we print all of our ballots. I know that that would not be a reality to have one of those in all precincts for different counties. It wouldn't be for me

because I know how much I paid for it. There is a setup fee that when we're done with our ballots that we have to pay, but there's also a cost per ballot.

1.3

Now, if we go all paper, I have a precinct that has over 15,000 voters. Now, I'm going to have to have 15,000 ballots there, but we know all 15,000 of those people are not going to show up. To me, that is going to be an extra cost burden on the counties to pay for ballots that we're basically going to put in the shredder. So that's a concern that I have. I am a metro county but I still have to think about my sisters and brothers around the state that don't have that extra money to just basically put into a shredder, you know, after the election's over with. That's one of my concerns.

And I don't, you know -- I know all the election people at the table have spoken but I do have concerns with that because my biggest concern, number one, is that that voter does get to walk away knowing that who they voted for counted and it's tabulated correctly, but I also have to look at it on our side of how much this is going to cost us on the county level. So that

was one thing.

I guess my question is is there an additional price per ballot with your company? Will we have to pay 39 cents per ballot or 45 cents if it's color? That's what I would like for you to answer for us.

MR. MURPHY: Yeah. Yeah. That's not an uncommon concern with folks moving from a DRE to a paper system. We hear that all the time. Our ballot-on-demand system we have in, essentially, two flavors. We have one that would be in a check-in mode where you're printing off a ballot as the voter comes up to the registration desk and is checked in by a poll book that we integrate with, you know, your poll book of choice and to make sure that that ballot is of the correct style.

We also have a more enterprise ballot management system that would print out Test X (phonetic), you could print ballots in bulk. So rather than printing out 15,000 ballots, you know, for a precinct that has 15,000 registered voters, you can print out half of that and then if it gets low you can print out more on demand for your central location and send it out to that

1	in plenty of time. We do not charge per ballot.
2	We just charge a flat software fee for both of
3	those systems and for the hardware, so
4	REPRESENTATIVE FLEMING: Good question.
5	Bill, good presentation.
6	MR. MURPHY: Thank you, sir. I appreciate
7	that.
8	MR. MONDS: I have a question.
9	REPRESENTATIVE FLEMING: Who's that? Oh,
10	okay.
11	MR. MONDS: John Monds.
12	What will the voter see once their ballot is
13	scanned that shows them that they voted for
14	exactly what shows up in the ballot?
15	MR. MURPHY: Yeah. So on the precinct
16	REPRESENTATIVE FLEMING: Hold on.
17	John, I'm not sure I heard that question.
18	Can you repeat it as you understood it,
19	Bill.
20	MR. MURPHY: Yeah. So you asked what do the
21	voters see
22	MR. MONDS: Once
23	MR. MURPHY: as how our system has
24	tabulated their ballot?
25	MR. MONDS: Right. Once it's on the

scanner, what will voters see? An example being George Smith, will it show the voter their vote was for George Smith?

MR. MURPHY: No, not in the precinct. In the precinct, we only notify the voter for overvotes. It's configured along the alerts. We can alert for overvotes. We can alert for undervotes. Most people don't do undervotes. But the accessible voting system would allow the voter on the touchscreen to preview their votes.

choose to do so.

1.3

1.5

But the accessible voting system would allow the voter on the touchscreen to preview their votes before they print the ballot and inspect the ballot after it's been printed. Once they've put it through the tabulator, it is cast as they've submitted it unless it's an overvote in which case it would kick back and then you could spoil

that ballot or they could submit it if they

REPRESENTATIVE FLEMING: Bill, thank you so much.

MR. MURPHY: Thank you for everything.

REPRESENTATIVE FLEMING: Yes?

JUDGE MCCOY: One quick question.

REPRESENTATIVE FLEMING: Judge?

JUDGE MCCOY: Has anything ever been brought to your attention about the South Georgia

humidity and moisture in a ballot and your scanners being able to scan those ballots in high-humidity situations?

1.3

1.5

MR. MURPHY: I live in Tampa, Florida and grew up in Charlotte, North Carolina so I'm familiar with what you're talking about. We grew up as an audit system in, you know, a kind of vote-by-mail environment. So our system is a lot more tolerant of ballots that may not be perfectly formed or may be a little bit bloated because of the summer weather. So we have not seen any instances of that being an issue.

I think paper -- the paper decision that you make -- you know, we like to tell people that we give you a lot more flexibility on the types of paper you can use in an election, but paper is one of the things that contribute to a factor like that.

So we would work with you guys to make sure that through the testing process, you know, that we're coming up with the best stock that works for your client because we know that it is sometimes challenging.

REPRESENTATIVE FLEMING: Bill, thank you so
much. We're going to move on to our next --

 $\ensuremath{\mathsf{MR}}.$ $\ensuremath{\mathsf{MURPHY}}:$ Thank you very much for the time. Thank you.

REPRESENTATIVE FLEMING: Thank you.

Unisyn, we're going to give you all time to get set up, and we'll start the clock when you're ready to go.

(Pause)

1.3

1.5

REPRESENTATIVE FLEMING: All right. We're going to get started now with our next presentation. This is Unisyn Voting System. Did I pronounce that right?

MR. WAGNER: Yes, sir.

REPRESENTATIVE FLEMING: I'm going to turn it over to you and let you introduce yourself.

MR. WAGNER: Very good. Thank you all for giving us the opportunity to come and visit with you a little bit today. One of the things that we want to emphasize is poll-worker setup and how easy it is for poll workers to use our system. You saw us wheel in the ballot box, on top of it our digital scanner. The poll worker is simply going to plug it in and turn it on.

I am going to do the introductions in a second, but I want to start with that because, again, your poll workers are probably like my

poll workers. I used to be the director of elections in Jefferson County, Missouri. It's in St. Louis. And one of the things poll workers have always asked me during training, they said: Wes, don't skip any steps. So when I speak to you today, I am not skipping any steps. So when I say the poll worker simply plugs it in and turns it on, that's all they have to do.

1.3

1.5

Our touchscreen, we call it the FreedomVote. You'll see how it is deployed right now with the legs, a privacy shield. I'm going to have my coworker Mark, he's going to remove the shield so we can all get a look.

To turn this unit on, plug it in, turn it on. Mark, he's already done that. He simply lifted the tablet into its current position. The tablet does have four positions. The vertical position would be most beneficial to voters with disabilities that require a wheelchair, but you can lay the tablet completely flat. The FreedomVote takes approximately 15 seconds to set up. The ballot box is about three minutes because it is a computer.

Our digital scanners are on the Linux platform, 256-bit encryption. Our touchscreen,

the thing I want you to know about that is the components, the tablet, the printer, those are commercial off-the-shelf, what we call COTS. In the event that a voter or poll worker breaks the tablet -- I have not seen that happen, but if they would, we would simply replace the tablet. You don't incur the cost of replacing the entire unit.

Also, because it is tablet technology, we are offering the benefit to your voters with disabilities, with visual disabilities, the screen-reader functionality. What we have found is that braille is not enough, not any more.

We're going to show that to you today.

It's just printing out the opening reports.

Again, poll worker, they simply plug it in and turn it on, this is the opening report. It gives you the opportunity to print multiple copies.

There's a place at the bottom for the poll workers to sign. I would recommend to you to have every poll worker at your precinct sign it.

If you have six poll workers -- three Democrats, three Republicans -- everybody should just sign and attest that we're starting at zero. When we walk into the precinct and we're ready to go,

you're looking at less than five minutes to set up.

Okay, so I have with me today -- this is

Dustin Vanderburg. Dustin is the vice president
of Adkins Election Services. Adkins is a

Missouri company. We have customers all through
the Midwest. Adkins has been in business for
75 years.

This is my coworker Mark Carter. Mark has just joined our team recently. Mark has had a long career with Democracy Live. So Mark has real expertise with voters with disabilities and UOCAVA voters.

And my name is Wes Wagner. I am the former director of the Washington County clerk from Jefferson County, Missouri. I held that position for 11 years. Prior to that, I served in the Missouri legislature for eight years as the ranking member on the elections committee.

Okay, so let's go a little bit out of order and I want to show you absentee ballots first.

REPRESENTATIVE FLEMING: Oh, hold on a second.

MR. WAGNER: Yes, sir.

REPRESENTATIVE FLEMING: You served in the

House or the Senate?

1

2

3

4

5

6

7

8

9

10

11

12

1.3

14

1.5

16

17

18

19

20

21

22

23

24

25

MR. WAGNER: I served in the House.

REPRESENTATIVE FLEMING: Oh, you're a good
guy. Go ahead then.

MR. WAGNER: Threw me off track.

REPRESENTATIVE FLEMING: I'm sorry. I was having a timing issue. My bad.

MR. WAGNER: Okay, so what Mark is holding is a typical absentee ballot that you would send to someone who was going to be out of town on vacation. Our system can accommodate an 11-inch ballot, 14-inch, 17-inch, 19-inch, printed front and back. The voter is simply going to take a marker and color a bubble of his or her choice, send it back to the election office. We're going to adjudicate that outvote and make sure that all of the requirements have been met. And the election official in the office is simply going to feed the ballot into the scanner in any orientation. It doesn't matter faceup, facedown, backwards, forwards, doesn't matter. You just have to lay it flat like a dollar bill in a soda machine. And when I do poll-worker training, that's absolutely how I explain it because everyone seems to understand a dollar bill in

soda machine.

1.3

You see how quickly Mark is sliding the ballot in. That one's backwards. There's a little green light. You may not be able to see it in the back of the room. The green light says it's ready to have ballots inserted. And it's just that quick.

Okay, then Mark is going to grab this ballot because the other voters sometimes don't follow the instructions, and we have voters that they liked Donald Trump and they liked Hillary Clinton so they voted for both of those candidates, right? And so they colored in the circle for both candidates.

So Mark is going to insert it into the digital scanner. It's going to be rejected and a little slip of paper is printed off. That little slip of paper -- if you decide to use a paper ballot at the precinct level, that little piece of paper will indicate to the voter at the time of the casting of the ballot where the mistake is on the ballot. And so that one should say -- overvote for sheriff is what that should say and that's what we're showing you.

The reason we think that is important is

because a lot of jurisdictions have what we call "busy ballots." In Missouri, we have a lot of constitutional amendments on the ballot. It is the same time as our congressional members and governor and so on.

1

2

3

4

5

6

7

8

9

10

11

12

1.3

14

1.5

16

17

18

19

20

21

22

23

24

25

That little ticket will allow the voters to look immediately to determine where the mistake was made. If this happened at the precinct level, the voter would simply take that ballot, bring it back to the poll workers who would spoil it, put it in a spoiled-ballot envelope, issue the voter a second ballot and therefore get a second chance and comply with federal law. If that voter says: You know what, I really do like Donald Trump and Hillary Clinton, I want to vote for both of them, the whole screen will allow the voter to checkmark the box and accept the ballot. Now what will happen is the votes, the incorrect vote, the overvote will not be counted but the rest of the ballot will. So the voter will not be penalized for the correct selection.

Okay, Mark is holding in his hand the same scenario. This is an overvote and the voter wrote us a note on the ballot. Those of you who have dealt with paper have seen all kinds of

notes I'm guessing. So why did the voter do that? Why did the voter scratch out that candidate and vote for somebody else? Well, because they only received one absentee ballot in the mail. Same process. The ballot's going to be rejected. You know, this scenario, what we would recommend that you to do, you go ahead and staple or paperclip that slip that indicates where the overvote has taken place. You would simply grab a new ballot out of the filing cabinet, if we're talking about in our office, and faithfully duplicate that ballot and slide it through the scanner.

1.3

Okay. I want to show you our electronic poll book. This is an iPad. We work with a company called Tenex, T-e-n-e-x, and Mark is going to -- we're going to do a little role-playing here. Okay. Let's show everybody the home screen first. Your poll workers are going to be on this particular screen all day -- red, yellow, and green.

Mark, do you want to fold it?

MR. CARTER: Sure (demonstrating).

MR. WAGNER: Then just unfold it.

That's literally all your poll workers have

to do. Mark is going to demonstrate that the tablet flips back and forth. There's a reason for that. Because I am a poll worker on this side of the table and when I check you in, we're going to ask for your signature. The screen is going to reorient itself. We're going to flip that iPad to voters on the other side of the table. That's what we're going to show you.

1.3

1.5

Okay. So Mark the voter, we've asked him for his identification. The poll worker selects the green driver's license scan. It activates the camera on the iPad and the iPad is going to scan the barcode on the driver's license. We, as poll workers, are going to ask that voter if their information is correct. If it is, we're going to get their signature.

Mark, do you want to show them that it's -- (Adjusting iPad)

MR. WAGNER: Okay, perfect.

It was upside down for the voter. Now it's correct. The voter has signed and we're going to issue the ballot.

Now, on that particular screen, we're looking at name, address, party affiliation if you want that on there, date of birth or just the

year of birth, voter ID number, all the information is customizable.

1.3

1.5

So Mark's going to complete the check-in process. And you may not be able to see but there's a little printer in there. The printer has printed out an authorization-to-vote slip that has a QR code. That QR code does not have your social security number, no birthdates, no name, no addresses. It's simply your ballot style. We are going to use this QR code to turn on our touchscreen. This is how most voters in Georgia are going to vote.

So, Mark, do you want to hold it under the left corner just under the green light.

Now, that barcode that Mark had in his hand, that is no longer any good. I would recommend to you, as a former election official, keep all of those barcodes. You want to keep those for auditing and reconciliation purposes. But if for some reason you didn't keep that and a voter left and threw it on the sidewalk, that particular barcode is no longer usable.

Okay, on the first screen, Mark, press start.

Yeah, I know it's a little difficult to see

there in the back, but here's the list of candidates. Mark's going to use his fingers to select the candidate. He didn't like his choice. He wants to vote for somebody else. Our touchscreen will not allow you to vote for someone else until you deselect and then reselect. The reason I think that's important is because sometimes voters have a tendency to drag their hand down the front of the screen -- I've seen that numerous times -- and they accidentally change their vote as their hand drags to the bottom.

1.3

1.5

At the very bottom of the screen, there's a couple of arrows that allow you to go forward or backwards. My mom and dad use the arrows at the bottom, but you can also use your finger because it is a tablet to navigate back and forth.

Mark's going to go the next screen. He's going to choose someone for, I believe, attorney general. He likes his choice so he goes to the next screen. Either with his finger or with the arrows, he's going to continue to vote. If he doesn't like his choices, he may choose write-in. If you touch write-in, a keyboard comes up.

Mark's going to enter my name because I know he

wants to vote for me. No, he doesn't want to
vote for me. He's continuing his -- okay.

1.3

1.5

This particular screen, here's an example of what happens if 30 people sign up for congress, not all of their names are going to fit on the screen. Our system that we are offering, even if you vote for the first -- this is a vote for three for city council. Even if you vote for the first three, our system will not allow you to navigate to the next race. Our system protects the voter and protects the candidates. Our system forces you to recognize that there were candidates to be seen at the bottom.

So, again, even if you've selected the candidate at the top, we don't want you to move on until you've seen everybody. I always use an example of a newspaper. You may not want to read the comics but we force you to pass through the comics to get to the sports section.

Okay. So Mark is happy with his selections. He is on a constitutional amendment. All we want you to recognize there is that there's more text and we want that voter to recognize that there's more text at the bottom of the screen. Once he's reached the end of his ballot, he's going to

choose "done" at the bottom. Here is the review screen. He is reviewing all of his selections. If he's not happy with any of those at any time, he can touch any one of those races and he comes right back to that race, but he can change his mind. So you can change your mind a million times. Any change that you make is going to be in blue. So it's a way for a voter to keep track of any changes.

Mark, will you do an undervote for me, please.

MR. CARTER: Sure.

1.5

MR. WAGNER: Choose any race, don't select anyone. Any time you see red, red is a courtesy to you, saying you didn't make a selection for sheriff. Obviously, our system does not require you to vote in every race. If you just want to come in and vote for governor or vote for president, that's fine. We've made you review all of your choices and that's the sizzle to our steak, which is on the system that you have now, your voters are going to touch the word "cast," they get in the car, they drive home. Our system, we're going to have you touch the word "print" and here comes your review ballot right

out of the machine.

1.3

1.5

Voters have a chance at this point to review their selections. They're not locked into it.

If they like their choices and are satisfied, they're simply going to lay their ballot into the slot like a dollar bill in a soda machine.

In a normal precinct set up, just so we're clear, you would have any number of FreeVotes.

So you would have four or five or ten or twenty, but you would only have one additional scanner.

Just so we're clear on that point.

Mark's going to lay it flat like a dollar bill in a soda machine. Doesn't matter faceup or facedown.

I heard a question earlier I wanted to address. The question was how I know that that machine is faithfully counting my selections. As an option on that screen, if you want it to, it will display your choices on that ballot. You can see it right there at the time of insertion, okay?

As the ballot is inserted through the digital scanner, a digital image is taken of that ballot. We're going to talk a lot about that here in just a second.

Okay, Dustin, can I use you?

1.3

One of the things our company is very proud of is our working relationship with the disability community. And so the voter -- let's say the voter comes in and it's obvious that the voter's going to need to use the screen-reader functionality. That ability can be given to the voter at the time of check-in with the electronic poll book. With that little slip that's printed from the electronic poll book what would happen is when you scan it, it will turn on a touchscreen. And right now we did not make the screen go black, but it will (demonstrating). There we go.

(Recording played)

MR. WAGNER: The series of taps and swipes is how the voters with visual disabilities are using their iPads and their own lives. We incorporate that technology as part of our system. We are very proud of that.

Okay. So the election is over. Election day is over, and we're ready to close our equipment, we're ready to go home, I've been a poll worker for 15 hours, I'm going to go home. There is nothing to do on the FreedomVote. This

is simply a ballot-marking device. It does not retain any of your selections. It's a very expensive pencil is what is it.

1.3

1.5

So Mark, all he did was lay a tablet down, we'll put the lid on it, and that's all you have to do. The digital scanner -- I want to show everybody that Mark -- we give you a ballot with the word "close" on it. That will be in the poll-worker supplies. They simply slide it through the machine. It'll then ask you if you want to close the election and print the results. If the poll workers would lose that for some reason, there is a hidden button on the screen that the poll workers could select, enter the password, and prints the results.

I'm not sure who asked it earlier, but these would be the unofficial results. Just so we're clear, on election night we will report unofficial results. The ballots inside the ballot box, the box itself has plenty of opportunities for a Democratic/Republic padlock, lots of security seals. So it's really going to be up to the administrator as to what you want to do with the ballots. Do you want to have the poll workers break the seals and bring all of the

ballots in on election night? Do you want to leave them in the box and have the election commissioners break the seals? We're very flexible in what we're offering.

1.3

1.5

Okay, so election night, we reported -- or a hundred percent reported and now it's Wednesday, Thursday, and we're doing our post-election audits. I know you all dealt with a -- or are becoming comfortable with a term called "risk-limited audits." If y'all don't know what that means, please find out because it's so critical to what we're doing here.

I'm a voter who -- I put my ballot into the ballot box. How do I know this thing counted my vote correctly? I'm going to show you how.

Dustin has a little mini scan on the table set up. Yes, we do offer a central scan for big counties like Fulton, but we offer a mini scan which may be a more economical choice for smaller counties. Lunch is over, the results are on a thumb drive.

Do you want to do that, Mark?

MR. CARTER: Sure.

MR. WAGNER: Mark is simply going to lift the screen out of the way. He's going to use a

barrel key. There's a security seal that he's already broken. He will remove the lid. There's a thumb drive, 256-bit encryption. That thumb drive will come back to the office on election night where it's downloaded into a laptop not networked. The thumb drive itself takes approximately three seconds to download the results. You can't make a mistake and download the results twice, okay?

1.3

1.5

So now the election is over and we have all of the thumb drives in our office, all of the thumb drives have been downloaded to a laptop.

The thumb drives contain digital images. Every time you put a ballot through the ballot box, a picture is taken of your ballot and we don't know it's yours. It's all anonymous, but a picture is taken.

In the post-election auditing process, we call an auditor -- so Dustin's going to be my -- my driver. I would recommend to you, as a former election official, that you have a Democrat and a Republican sitting here in front of the monitor. Our software's going to ask you what precinct do you want. So Dustin and his bipartisan coworker are going to choose a precinct. He's going to

choose a city. Now, our software is asking you how many ballots do you want to look at from the city. You can look at them all. You can look at a small percentage. Dustin's going to choose 50 percent. He's going to select right there (demonstrating). Perfect.

1.3

1.5

Okay, so you'll notice in blue that word says "unprocessed," right there at the top. It says unprocessed. Dustin's going to choose the first one. On the left side of the screen is the ballot. On the right side of the screen is how our software interpreted your selections. They'd better match, right? So in this scenario, we voted for Dwight Eisenhower for president, right there (indicating), and at the very top, Eisenhower is reflected. That is your risk-limited audit.

Dustin, want to do another one? Another -- MR. VANDERBURG: Okay.

MR. WAGNER: -- next process. No selections, look at that (indicating). No circles were colored in for any voters so no selections were reflected. You may see a yellow color that's reflecting a write-in vote. This is a way to quickly and accurately ensure that the

voting system juju has integrity, that the results are fair and square.

1.3

If I can take five seconds and get on my soapbox, elections are not about winners.

Elections are about losers. They are. That's what makes our country the best country in the world because the losers always accept the results. It's not about the winners; it's about the losers.

Okay, Dustin's going to show you the adjudicator feature, something we're very proud of. I want to show you a couple of things.

Let's talk about UOCAVA ballots. For the people in the audience, I'm talking about military, overseas citizens. When they send their ballots back to us, it's usually on copy paper. That's how we get it. We, as election officials, are forced to pull it out of the filing cabinet, get a marker and color in the circles.

What if I showed you a way that you can eliminate human intervention and do it all electronically? UOCAVA ballot comes back, we scan it through our scanner. Just like the process I showed you before, Dustin is going to open up this ballot. There's the ballot

(indicating). At the top in red -- I know you can't see it, but at the top it says: Can't verify that this is a ballot. It doesn't know if it's my kid's artwork from school, doesn't know if it's a newspaper article. Just knows it's a piece of paper.

1.3

1.5

So what we're offering to you is the ability to recognize that's a UOCAVA ballot. Over on the right our software asked you to pick a precinct. Dustin's going to do that. Then he's going to choose what ballot style is appropriate for that UOCAVA voter. And he's simply going to adjudicate this ballot with his bipartisan teammate, right? This person wanted to vote for Abraham Lincoln for president. You'll see the dialogue box that comes up. He wanted to vote for -- is that Senator Barry Fleming or Peggy Fleming for attorney general. I think it's Peggy.

REPRESENTATIVE FLEMING: You were doing good there for a while.

MR. WAGNER: (indiscernible)

Dustin adjudicated the vote for Peggy
Fleming for attorney general. Now that voter's right there in the corner. That voter's intent

is accurately reflected electronically. Those results are dumped into the system, a report -- a breadcrumb report is printed out that you can simply staple and attach to the original UOCAVA ballot for accounting purposes. That was just used -- this process that I described was just used in the Kansas gubernatorial primary two weeks ago.

1.3

1.5

REPRESENTATIVE FLEMING: Wes, I know we've got a little less than five minutes left for you so I don't want to interrupt you, but I do want to give you the option to save time for questions if you like, okay?

MR. WAGNER: And feel free to jump in. We're here for this, so ...

MR. WAGNER: Absolutely.

REPRESENTATIVE FLEMING: -- if that's okay.

Questions from members of the panel. I'll start with one and I asked the same one earlier. Do you know -- and if you don't, I understand. Do you know how much it would cost the state of Georgia to implement your system in all hundred and fifty-nine counties? Any estimate?

MR. WAGNER: I hate people that don't answer questions. I mean, again, I think the first presenter was accurate. It just depends on your RFP.

REPRESENTATIVE FLEMING: Okay.

MR. WAGNER: If you all decide that counties
in excess of a certain number of voters should
have a big central scan --

REPRESENTATIVE FLEMING: Right.

MR. WAGNER: -- that may be a different price point than if you say counties with, say, less than 10,000 buy a smaller -- mini scan is what we call it.

REPRESENTATIVE FLEMING: Sure.

MR. WAGNER: You're going to decide what kind of service you want from our company. Our company prides itself on election-day support. That's a big service we provide.

REPRESENTATIVE FLEMING: One other quick question. The machine printed out a small piece of paper. You also had a bigger piece of paper, we could see that. Which is going to be the printout from the machine, bigger or smaller?

MR. WAGNER: So the FreedomVote ballot is
what your voters are going to experience at the

polling places, small.

REPRESENTATIVE FLEMING: Small. And the other one may be an absentee ballot? I don't think I understood.

MR. WAGNER: We just wanted to show you that the FreedomVote ballot and the absentee ballot both can go through the same scanner.

REPRESENTATIVE FLEMING: Same scanner, gotcha.

Questions as I go along. I'm going to start on this side this time.

Sara, were you about to raise your hand? Go ahead, Sara.

MS. GHAZAL: So you showed us how the absentee ballots are audited. Do you also have a demonstration of how a live in-person vote would be audited?

MR. WAGNER: Yeah. Maybe I wasn't clear earlier on your question. If a ballot at the precinct, at the time of insertion, if you wanted it to, on your screen it will show you your ballot that's being inserted. It will hold your ballot in suspension until you say accept or reject. If you look at that screen and say:

Boy, I really didn't want to vote for that

candidate, you could hit "reject," and the ballot will come out. Take it back to the poll worker and get a new opportunity.

MS. GHAZAL: But during the risk-limiting audit, how would that work?

MR. WAGNER: So during the risk-limiting audit the thing you have to remember, every ballot whether it's absentee, early, election day -- when I say every, I mean every -- every ballot is going to go through a digital scanner. Every ballot has a digital image captured. Every ballot can appear as part of the risk-limited audit, that process. You can visually inspect every ballot.

REPRESENTATIVE FLEMING: Judge, do you have a question?

JUDGE MCCOY: Obviously, we'll need more than one poll book in a precinct. How do they sync or how do you know that somebody's already voted? Somebody comes through and then goes and gets back in line to another poll worker and tries to vote again. How do those sync?

MR. WAGNER: That's a great question. So the iPads have what they call bluetooth.

Bluetooth is about distance. They talk to each

other if they're close by. Obviously, you're going to have at least two, maybe three iPads in a polling location. The idea that a husband and wife come in to vote, wife can check-in with this one, I'm helping the husband. They are talking through a bluetooth. So that's not Internet.

Just so we're clear, that is not the Internet, but they are talking through a bluetooth. When the husband checks in with me, his name will show up as checked in here.

Now, Missouri, our rules allow communication between this iPad and central office. So during my time, I could sit at my desk and the newspaper would call and I could tell them accurately how many people had voted in a particular jurisdiction. I can see, you know, the husband and wife had checked in.

REPRESENTATIVE FLEMING: Sara, did you have a quick follow-up? You don't? Okay.

Senator?

1.3

1.5

SENATOR STRICKLAND: How many scanners do you have per voting booth because it looks like it'd take -- it could take a little bit longer to scan and actually review your ballot at the time. How many of those scanners do you have to have

1 per -- voting booth I'm calling that, I guess? 2 MR. WES: So every precinct is going to have 3 one scanner, right? You could have a hundred of 4 these, a thousand of these at a location. If you do what we call "full ballot review," that's what 5 you're -- sure, you could have people standing 6 7 there, you know, they're looking at their ballot. Sure, that could happen. 8 SENATOR STRICKLAND: So you don't have 9 10 situations where you have to have more than one 11 scanner per precinct? 12 MR. WAGNER: Only if you wanted more than 1.3 one. 14 REPRESENTATIVE FLEMING: Nancy, did you have 15 a question? 16 MS. BOREN: How would your iPad --17 REPRESENTATIVE FLEMING: Turn your microphone on. 18 19 MS. BOREN: How is your iPad populated with 20 the data? 21 MR. WAGNER: Through your VR system in your 22 office. 23 MS. BOREN: But is it connected? 24 MR. WAGNER: It will be when we download the 25 information initially.

_ -

MS. BOREN: Right, but on election day?

MR. WAGNER: Again, up to you. Missouri, we were allowed that connection. I'm not trying to twist your arm one way or the other. I found it beneficial for me to have inquiries and for trying to -- I'm sorry, go ahead. I'm just saying we're trying to really kind of prevent the potential voter fraud from somebody going from poll to poll if you want this frozen out. If they voted at the school, you don't want them showing up at the church and try to vote.

REPRESENTATIVE FLEMING: Dr. Lee?

DR. LEE: So this is more like a usability question. So the small printout that you print out from the tablet machine, have you done any user study to see how likely the user is bothering to actually verifying because they come to the section --

MR. WAGNER: You're asking me how long it
would take a voter --

DR. LEE: No. Have you done a study to find out how likely a user is actually verifying and then scanning because it's very different from hand-marked where you have voters really carefully commit, whereas you're using digital

devices to make such an event and print it out, how likely is a user actually verifying?

MR. WAGNER: I am from the "Show-Me" state.

DR. LEE: Yeah.

MR. WAGNER: Voters, they want to know that their vote is accurately reflected on the equipment. So, yes, I see them. Yeah, they stand there and they look at it. That's a good thing.

DR. LEE: No. No. I'm not asking -- I'm not asking what you believe. I'm asking whether you've done a user study.

MR. WAGNER: Oh, no, we have not.

DR. LEE: Thank you. And also, because you actually secure the ballots in, you know, the physical device, right --

MR. WAGNER: Right.

DR. LEE: And then if you want to have the option that supplies a digital image sometimes people say I don't want to be hampered, manually check their ballots. Again, so similarly user study, right? So these small pieces of paper, how easy do people find to go through those?

 $\mbox{\bf MR. WAGNER:} \mbox{ Well, it may a little tangent}$ but the part that I like is --

DR. LEE: Right.

MR. WAGNER: -- that we can security-seal the ballot, the ones that are cast on election day or early or absentee. No human being can get to those because they're security sealed. If we end up in a recount in front of a judge, we can honestly say when we raise our hand: Judge, no one's tampered with these ballots since election night.

I use this example all the time. It's like when you go to the doctor, the doctor might take an x-ray of your arm before he uses a scalpel to open you up. We're giving you an x-ray through our auditing software of what's inside that ballot box so a human being doesn't actually have to touch it. And I hope I answered it. I get your point.

REPRESENTATIVE FLEMING: Wes, what state is in your user system? What state is in your user system?

MR. WAGNER: All through the Midwest: Missouri, Iowa, Kansas. We have --

REPRESENTATIVE FLEMING: Several. Okay.

MR. WAGNER: Arizona.

REPRESENTATIVE FLEMING: This system that

you're showing us today?

MR. WAGNER: Yeah, we have approximately A hundred and sixty accounts in Missouri and Kansas and Iowa.

REPRESENTATIVE FLEMING: Any statewide?

MR. WAGNER: We do not have statewide.

REPRESENTATIVE FLEMING: Okay.

Yes, Cynthia? Quick question?

MS. WELCH: I have two questions as it relates to the poll book. The first one is on direct -- we talked earlier about directing voters to the correct precinct and making sure that they're not disenfranchised. Will the poll book allow us to tell people which precinct they are to vote in?

MR. WAGNER: Yes.

MS. WELCH: Without it being connected to the Internet?

MR. WAGNER: Yes. So I am at the wrong place. I should be at the church, okay? So you scan my driver's license, wrong location. So it's going to direct me to the right location. In Missouri, where it's really nice, we get that redirect. If you do have an Internet connection, you have Google maps, you can text the driving

directions over to the church. There's some 1 2 bells and whistles in that, but I would encourage 3 you baby steps first. 4 REPRESENTATIVE FLEMING: You had one last 5 follow-up, Cynthia? MS. WELCH: Yes, and this is real quick. 6 7 Can -- on the ballot marker, is that the largest screen tablet that we could connect to 8 9 that system, or ... 10 MR. WAGNER: Yes. 11 MS. WELCH: Okay, thank you. 12 MR. WAGNER: We could increase the font, 1.3 just so you know that, on the screen. 14 **REPRESENTATIVE FLEMING:** Amy? 1.5 MS. HOWELL: Quick question on the printout 16 for individuals. Does that -- is there a way to 17 enlarge the font on those, the individual 18 verification? MR. VANDERBURG: Yes. 19 REPRESENTATIVE FLEMING: 20 Wes, a good 21 presentation. Thank you so much. I appreciate 22 you being here. 23 (Applause) 24 MR. MONDS: Representative Fleming? 25 sorry.

REPRESENTATIVE FLEMING: John, you're going to make me run over. You know I'm going to charge you for this, right? All right, quick question, John.

MR. MONDS: We're in the process of saying that you're selected sometime in 2019 or whatever. How long would it take to implement the system throughout the state?

MR. WAGNER: I suspect it's true for all of
the vendors. We're already all making
preparations now.

 $\label{eq:REPRESENTATIVE FLEMING:} \mbox{ Good question.}$ Thank you, John.

Wes, thank you very much.

Our next presentation, as they pack up, will be Smartmatic. And we'll let these good folks break down and we'll get our next set up and get started.

(pause)

REPRESENTATIVE FLEMING: All right. We're going to go ahead and get started with our next presentation. This is Smartmatic.

And I'm going to turn it over to you and ask you to introduce yourself.

MR. SHELLY: Sure. Sure. My name is Kevin

Shelly. I'm with Smartmatic. First off, I want to thank the state of Georgia, secretary of state's office, and the SAFE Commission for giving us this opportunity to meet with you today.

1.3

1.5

What I'm going to do is I'm going to tell
you a little bit about the company Smartmatic,
then I'll turn it over to my colleagues: Ed
Smith who is our director of services and James
Long. James is the project director for a recent
contract with LA County which is the largest
county in the United States.

So Smartmatic, we are a global company. I don't know if you can see it, but the light blue depicts where we have offices. The darker text is where we have supported elections. We have supported elections on five continents. We are the largest elections company in the world.

So to look at some of the numbers, clearly from all of the work we've done, we've supported 3.7 billion ballots cast. The elections that we have supported, 62,000 candidates have been elected. In of all this activity and this history, we have not ever been breached, no vote was ever changed, it's always been very

successful.

1

2

3

4

5

6

7

8

9

10

11

12

1.3

14

1.5

16

17

18

19

20

21

22

23

24

25

So this is just a sample of some of our clients. I mentioned LA County. This was awarded to us in June of this year. LA County has 5.5 million voters. It's larger than 40 of the states in our nation. It's a very, very big opportunity for us. In Belgium, we are in the midst of a 15-year contract to run their elections. In the Philippines, we have a history of supporting their elections, and I've got a video that I will show you that kind of depicts everything that we did to support our customer. And it's not to say that we'll face some of those challenges here in Georgia, but I think it does show what we do to support our clients in their requirements. And of course, we've got a legacy of supporting elections in the United States.

So let's go to the video.

(Technical difficulties)

MR. SHELLY: We can run elections but we can't run a video. It's right there. So it's not going to ...

All right. So we don't have sound so I'll ad lib.

Literally, we deploy voting equipment to

1 7,000 islands. We use motorcycles to get the 2 equipment over there, and I think in some of the 3 slides from before, we actually used donkeys. 4 But what we did for the customer was just --REPRESENTATIVE FLEMING: Do you use 5 6 elephants too? 7 MR. SHELLY: I don't know --REPRESENTATIVE FLEMING: (indiscernible) --8 MR. SHELLY: That's --9 10 REPRESENTATIVE FLEMING: That was going to 11 (indiscernible). MR. SHELLY: That might be a best practice 12 1.3 next time because they're probably more effective 14 than donkeys. But, again, you know, I think 1.5 there's 55 million voters, 62,000 -- 55,000 16 candidates. So it was just an enormous 17 undertaking and here are the numbers. 18 (Video image projected) 19 MR. SHELLY: Okay, at this point, I will 20 turn it over to Ed Smith, the director of United 21 States services. 22 MR. SMITH: Thank you, Kevin. 23 Once again my name is Ed Smith. 24 director of US global services. Today we're

bringing to you a voting system that has four

25

pieces of hardware. We're starting with an electronic poll book, the VIU-800 which serves as a statewide electronic poll book. It also serves to activate voter cards in the polling place.

1.3

1.5

And once a voter is credentialed, you can scan their voter ID in an integrated scanner and make out this smart card with this encrypted information.

They'll walk that over to an A-4 series ballot-marking device. We have deployed 5,000 of these in Belgium. It's a tried-and-true ballot-marking device. As you can see, it's very self-contained. It's lightweight. And we'll offer it here in the state of Georgia with a cut-and-drop feed path on the right-hand side and, where needed, accessibility pieces on the left-hand side. And the voter will touch the screen, they will make their selections, review their selections, and then they can review and verify their selections on the voter-verified paper audit trail. We'll talk about that a little bit more in a moment.

If the state so chooses to go with paper ballots, we do offer both precinct scan and central count scan. This is our precinct

scanner, the 1800 Plus. We have over 92,000 of these deployed in the Philippines, and as you saw with some of the competitive offerings, the voter will mark in private a paper ballot, put that in the slot, and use the screen to review the selections. And the nice, large, red and green buttons to either cast their ballot or bring it back to correct any errors.

1.3

All of this hardware is underlaying and supported by our election management platform.

And the election management platform is comprised of five pieces that run seamlessly as one piece of software.

The first is the election configuration system and it's, along with the results management system, comprised of what you traditionally think of as an election management system where the election configuration system is doing ballot layouts, ballot proofing, and machine programming, and the results management system is doing the results aggregation and reporting. But we've added to that three additional components.

The first is election-night reporting which offers a finer grain reporting facility and also

population of your county and state websites.

1.3

1.5

To that we have added Election-360. And Election-360 offers both the opportunity to examine your election on election day in real time and understand things like polling-place wait times, if machines are down and in need of repair and provide help-desk support and in post-election audit and forensics.

Lastly online ballot delivery provides a portal for the voter to log in, get their ballots printed, and turn it back in via mail or by hand. The state rules allow they are a printed ballot.

So that is the system we are bringing to you today. As we advance, we'll look in a little bit more detail.

First off, let's talk about security because it's on everybody's minds, right? We have the only system that you're going to see here today that from its inception was built to comply with VVSG 1.1. You might ask: Well, what's VVSG 1.1? So there were the original voting system standards promulgated by the Federal Election Commission in 1990. Those were updated in 2002 and then when the EAC came along, also in 2002, they wrote VVSG 1.0. And that was written in

2005. Keep that in mind, 2005. They updated those to VVSG 1.1 which are the current operative standards in 2015.

1.3

1.5

Now, do you think that the threat environment to the voting system has changed since 2005? Yes, indeed, it has. And so there's a huge advantage to the state by selecting a system that has started its development against these newer standards with their higher requirements for security and their higher requirements for accessibility. And we're the only folks with that.

We recognize because of our worldwide deployments, as Mr. Shelly pointed out earlier, some very unusual threats here. We can only say the parties don't necessarily trust each other, political parties, but in other countries that's certainly taken to a different level. And threats like voter coercion and stuff exists that have forced us to take a deeper and more comprehensive look at security than perhaps other systems that you'll see.

And we recognize that it's a combination of people, processes, technology, communication, governmental policy, all of those things come

together to create security in addition to the higher degree of inherent security in these devices.

1.3

1.5

So we're bringing forth today -- and it's a pleasure to coming before you -- in particular this A4 ballot-marking devices. So speaking today just briefly, it is a device -- once again, we've deployed 5,000 of these in Belgium. It is for in-person both early and election day.

I know on your request for information this would be Voting Method 2. And when you have ballot-marking devices as the sole option for people who are voting, you get a number of advantages. One is a uniform early and election-day voting experience. It's also a uniform poll worker experience so it will minimize your poll worker training. It also minimizes and aides your voter education and outreach.

If, for instance, different counties are voting on different technologies or you have different machines, when voters come from outside the Metropolitan Atlanta area, downtown Atlanta, to work, they see machines on billboards and it may not be the same machine they're trying to

vote on back home and that creates confusion.

1.3

1.5

So uniform system, uniform machine allows for some serious education advantages. It also allows for uniform equipment maintenance, spare parts and supply chain that are all the same.

All of your technicians across the state are trained to deal with one and only one of the same device. So there's certain advantages there as well.

You don't need ballot on demand. These units store all of the ballot styles for a given election. So as envisioned by the request for information, voters from any part of the county can go to any vote center and vote early regardless of if that vote center's across the county or their nearest vote center because all of the styles are contained inside the units.

We do not tabulate from barcodes. It's a sensitive subject. It's come up. I'm on Twitter. I see it every day. You probably do too. So we are taking the human and readable part of the VVPAT, the tape that comes down, and once a person accepts it, it's cut off and dropped in a bag. And we are doing optical character recognition on that tape and tabulating

it from the human readable just as a person verified. We're not tabulating from barcodes.

1.3

So once again, the same as Georgia voters are doing now, they come and they get credentialed, they activate the unit and make their selections. Ultimately, they print the VPAT tape, review that, and cast their ballot. But it's a much better technology, a much better graphics, user experience, more modern, certainly more secure.

So with that, I'll turn it over to my colleague James Long.

MR. LONG: Again, I'm James Long. Some people may recognize me. I used to work here in Georgia quite some time ago. I've made it around the country and now I'm back here.

So what I want to talk to you about is our effort the past couple of years has been to basically bridge the gap between accessibility and security. You hear that a lot at the federal level. I spent a good amount of time at the federal level and it really was the conversation that we engaged in the most: when you have accessibility or you have security. And so what I've been working on for the past two years is

basically to bridge that gap and to bridge that gap with this solution.

1.3

1.5

So let's start first with the election management platform as mentioned. This is a centralized platform. By centralized, I don't want you to get the impression that this all networked and, you know, on the Internet. What we mean by centralizing, that each of these proponents, all five of them, were developed at the same time, using the same user interface and the same user experience.

So across the whole platform as you interact with these different systems, you'll get the same experience. Nothing is bolted onto the system or an add-on. It was all developed from the ground up to meet the growing security concerns and accessibility concerns of the community.

This is collaborative software as well, meaning that within the election configuration system this is where you put in your candidates and all of that information. You can have several client relationships over your larger counties where there's a lot about ballot-proofing or a lot of machines that you can create. You can have several clients to create

these machines from an open format like ballot-proofing format. That's streamlining the process, making it quicker.

1.3

1.5

So let me show you two things real quick on the election platform. First thing I want to show you -- this may be more of interest to, you know, the secretary of state's office -- we understand that you create all of your ballots centrally. These ballots are created, you know, at the secretary of state's office and distributed down to the election jurisdiction for deployment on the machines.

So right now you currently use a system which requires you to create a database for each jurisdiction copy and you have to copy to the new jurisdiction or you have to -- so you have to copy for a new election or you have to put all of this information in again, and this can introduce state integrity issues, et cetera, et cetera.

Our system allows you to add every jurisdiction to a single platform. You can manage those jurisdictions, you can share information between those jurisdictions, and centrally for contests, you just put the candidates in once from election to election.

You don't have to insert the information again for your districts, you just create a new election. It loads all of the previous data, for your jurisdictions and precincts are laid out, all of that information. And you can modify the information of course from election to election, polling centers, et cetera. But this allows you to manage it more centrally.

1.3

1.5

So I mentioned ballot-proofing. The screen is a little whited-out here, but what you'll see here is an interactive view of the ballot. So what you can do here is you can check out some ballot styles because, as I said, this is collaborative. You can check out the ones you want for review.

You can perform that review by adding comments anywhere you want to on the ballot. It will also identify any errors that the machine itself has identified, saying there's probably one issue here, like this ballot where you have a contests rolling over different pages and into the margin. You can correct those issues right here (indicating). All of your actions that each user does -- each user has a log-in, so there's no one log-on for everyone. Their actions are

logged here and this ballot is either picked back up for more design help or accepted. All that's locked over here.

1.3

1.5

So let's talk about what's in a precinct because this is what the voter receives. This is their interaction. As Ed indicated, we have this electronic poll book system. It's designed in a way to be extremely lightweight and it's arranged to have two different sides.

The first side is basically your poll-worker side, and then we call this the voter side. So this is configurable to whatever that jurisdiction needs. If they require signatures, a signature pad can be added here. If they require authorization to vote, like in Ohio, you can print out a receipt so that they can take that to the polling station to get their ballot and continue the process.

This is very modular so you can put whatever you want on the backside to meet your individual jurisdiction's needs. This one's configured to work with a card given to a voter so that is what this looks like. So this is the voter confirmation card. It goes inside so it works just like any other poll book. You select a

candidate, you get your card, you give it to the voter.

So let's walk through a few screens here.

So these are the kind of screens that you should be seeing right here. So you insert your card.

Move to the next slide.

1.3

1.5

Here are some options that you can add.

These are configurable, what you want to be able to initialize for the voter before they get to the polling station. The idea here is to let the voter be as independent as they're capable of being.

So you can to go ahead and pass up these options to the machines. It's audio voting, but they need to connect their own sip-and-puff device. And the instructions will change on the screen based on these options as well. So the user is given a just generic list of instructions of how to interact with the machines. It's audio. All the instructions are on the different audio, et cetera, et cetera.

So once you've created the card, you'll give this card to the voter, and they'll come to this machine here. What you see is what we idealize here for George. This is a -- basically, it's a

digital interface with a cut-and-drop, voter-verified, paper-ready, so what you'll see to the right. All the accessibility controls are on the left.

1.3

1.5

And so the voter, just like they do right now, will insert the voter card. One difference here is that they can insert this card any direction they wish. It will activate the system.

So this is the screen. We'll insert the card. We have offered many different languages. I believe that only Gwinnett County has an alternative language requirement here, which I believe is Spanish, so Spanish can be added in here. No problem.

We go to the voting experience. One thing I want to point out is -- oh, here it is. I want to talk to you real quick about this voting experience. This is where we've vested a tremendous amount of time. So this is laid out intentionally into basically three zones. We have the top zone here (indicating) which is where all of your help, accessibility, and language features are presented. So accessibility, should that be your disability,

but you can change these throughout the experience.

1.3

So let's say you get into the experience, but you don't know what to expect. If you've never voted on this and you think that yeah, the text will be fine, I don't have to read it, and you get in there and you realize the text is a little small for me, so you can adjust it. I'll show you that in just a moment.

Language, again, you can, you know, be a pretty proficient English-speaker and decide when you get in there, maybe I want to see it in a different language. The help is contextual as well. It's not just a generic help. It's -- it tries to anticipate where you are in the process to provide you help. It's not just a generic, just something out of a PDF or something to count the vote.

The next thing you see here is the contest navigation. It tells you the number of contests, which contests are relevant, allows you to navigate back and forth through the contests.

You have the contest name pretty large here. I want to draw your attention right here

(indicating). These are the instructions. Here

we have included this feedback in this.

1.3

1.5

So we've worked with disability experts across the country and Princeton University as well to find a better way to address the plain language requirement. So you'll see that term creep up in a lot of documentation, a lot of accessibility guidelines saying use plain language, and then you see this two-page definition of what plain language is.

So in that effort, what you will not see in our system are technical terms that you normally see in an election of lingo like under- and overvote, vote for one. We try to guide the voter by talking to them in a voice that would normally converse.

So here we have one option. So this says vote for one. So we said: Vote for one. You have one selection left, meaning that you haven't made any selections yet. And the contest is unvoted. So we present this in three different ways to help guide the voter through the process to ensure that they know at all times where they are in the voting process.

So let's vote for someone real quick.

REPRESENTATIVE FLEMING: James?

MR. LONG: Sir?

1.3

1.5

REPRESENTATIVE FLEMING: We're getting real close to the five-minute mark, so I just wanted to let you know.

MR. LONG: Thank you. I'm going to speed this up real quickly. So you see that it changed here. You have zero selections, contests fully voted.

So let's go to the next.

I print it out real quickly. Got some accessibility features. I just want to point out, we also offer small text as well. This ballot is -- the word's not going to come to me, but, anyway, it's kind of counterintuitive and, you know, large text would work better for some people so we could do that.

Let's go here to some of the usability features. We'll white this over. One thing I want to show you is in messaging. You have here -- this is a message, again, you won't see the word "undervote." This is where the undervote contest -- it tells you what happened and the consequences of you continuing.

Keep going.

We have the review screen. This lets you

modify your selections. You can go back to your contest and come back forward without having to navigate back and forth through the ballot.

1.3

1.5

This is the paper record that we'll print from the system. You'll see there is a QR code for more rapid auditing or processing. But, again, this here, the text is what is actually interpreted. This is what is read back to the voter using its accessible session, and this is also what is tabulated from when the voter accepts the ballot. It prints when it's accepted.

And this is not visible to the voter, but it ensures that you can do one-to-one ballot for risk-limiting audits. It will print a code on the ballot. The code has no associations to any voter or anything. The voter never sees it prior. It's the last thing it prints before it cuts the paper and drops it into a receptacle. I want to make sure that that's clear that this isn't reel-to-reel where you could potentially violate voter privacy. It actually cuts and drops into a large container that automatically shuffles.

I want to kind of just do this quick. If

the state does want to go a different direction than to go the paper route, we offer other options as well, which is the paper scanner.

It -- you know, I could demonstrate it. You've already seen two of them. If you mark a paper ballot, it scans, it has a review screen. The voter can review the choices and accept the ballot.

1.3

1.5

Yeah, this is basically the end of the presentation. Just want to close and say, you know, we're, you know, a full-functioning elections company. We offer logistic support, manufacturing, training services.

So for further brevity here, we'll open it up for questions.

REPRESENTATIVE FLEMING: James or whoever, do you have any idea how much it would cost Georgia to implement one of these systems?

MR. LONG: I'm just a tech.

MR. SHELLY: So I anticipated that question.

So I think I have seen in the newspapers or articles that there was numbers as low as

30 million, which was primarily paper, and then I think there was an upper limit of a hundred and fifty million.

1 2

REPRESENTATIVE FLEMING: I've seen those.

MR. SHELLY: We can fit in there. Certainly it would depend on the density of the machines, the configuration of the machines. You know, it would depend on the requirements in the RFP, but without giving you a number, which is I know what you want, we would be very competitive in the RFP when it comes to technology, past performance, and price.

REPRESENTATIVE FLEMING: No, I understand the range and I appreciate that. That's the range I've heard people talk about.

I'm going to start on this side of the room.

Doctor?

DR. LEE: Just so I understand, so paper-scanning-based technology, that would be \$30 million range versus we go with the fancy tablet, it will be upwards of a hundred-and-fifty million dollars; is that right?

MR. SHELLY: Yes. I mean, so that's the low end to the high end. This piece of equipment would have a cut-and-drop printer, okay, so that would be additional. And this is the poll book.

DR. LEE: So you go into paper scanning
solution. Do you have support for the ballot

1 design as well?

MR. LONG: Yeah, so the same record that comes out of the computer that you would tabulate off of would be (indiscernible), so you wouldn't lose any accessibility features. The cost --

DR. LEE: I'm talking about the ballot design. Ballot design.

MR. LONG: Yeah. Yeah. You can load any ballot design the state requires. To show the cost differences, the amount of equipment, you need more of this than you need of that.

REPRESENTATIVE FLEMING: Coming on around, Sheila, do you have a question?

MS. ROSS: Out of curiosity, which way did
Los Angeles go? Paper? Or did they use a
machine? And how much did it cost Los Angeles
County?

MR. LONG: So the technology in Los

Angeles -- so the first thing that I would say,

Los Angeles centrally tabulates so they went with

the paper route. So it was a digital interface

that prints on a thermal piece of paper that's

eight and a half by eleven. So it prints the

selections of the voter and the QR here

(indicating), and then it goes into a secure

receptacle in which they gather it electronically and take it back to central to tabulate from the precinct tablet.

REPRESENTATIVE FLEMING: Estimation of the cost for Los Angeles you think as far as --

MS. ROSS: What would be estimated and how
much did it cost to get them online?

MR. LONG: I think the total procurement, because there is design work here -- it's a custom solution, they don't have it -- it's not like we took it off the shelf and gave it to them -- was two --

 $\ensuremath{\mathbf{MR}}.$ $\ensuremath{\mathbf{SHELLY}}:$ It was 200 and I think the initial --

MR. LONG: 280.

MR. SHELLY: Well, the 280 is -- that would include several years of maintenance and everything. But the base years of the contract, I think, are like 230, but it's a very different contract because we're actually doing the software development for them and the warehousing and cards and the maintenance. I mean, it's pretty much end to end.

MS. ROSS: Have you not had an election with them yet?

1	MR. SHELLY: No. We we were awarded this
2	contract in June of this year.
3	MS. ROSS: So when will your first election
4	be so we can watch it?
5	MR. SHELLY: So there's going to be some
6	intermediate mock elections
7	MR. LONG: So the first time it will be
8	voted is September of next year, '19. So that
9	will just be a pilot. It will be used in the
10	local election in November of next year, but its
11	full-metal deployment will be for the 2020 March
12	primary.
13	MS. ROSS: Thank you.
14	REPRESENTATIVE FLEMING: Over here on this
15	side? Lynn?
16	MS. BAILEY: Thank you. Would you please
17	explain to me then how the QR code is used?
18	MR. LONG: Sure. The QR code
19	REPRESENTATIVE FLEMING: Remind us what the
20	QR code is, Lynn. You're too smart for some of
21	us.
22	MR. LONG: Do you have the slide to the
23	image. Keep going.
24	Here, that's a QR code.
25	REPRESENTATIVE FLEMING: Okay.

MR. LONG: So it stand for quick response. You can embed a lot more data in that than you can in your typical barcode.

1

2

3

4

5

6

7

8

9

10

11

12

1.3

14

1.5

16

17

18

19

20

21

22

23

24

25

So this barcode is used several different ways. You can use this for quickly tabulating using a third-party auditing system, meaning like a system that doesn't tabulate the same way that we do. So unless you hire some independent auditing agency that wanted to, you know, scan it or do a recount for you, so you can use the QR code for that.

We use the QR code, you know, predominantly just for those features and just for auditing features. Internally, before the ballot is cast, we take the content of the QR code, we compare it to the OCR text and to what was contained in the machine buffer before it was printed. We compare all three of those together to ensure that the data and the QR code matches what was printed on the tape.

REPRESENTATIVE FLEMING: Coming on around. This side of the table? One more pass. MS. HOWELL: Point of clarification. So in

the instance when a paper ballot is used, they

are still for individuals with disabilities who

have access needs? You're still getting the touchscreen in addition?

1.3

1.5

MR. LONG: We don't necessarily recommend having the -- your -- you know, you're ultimately putting an additional barrier in front of someone that already has barriers to vote. Because they have come to this machine first to get their printed ballot or to get their marked ballot. Then you have to take that ballot to another machine.

Now, this one could tabulate for you as well, but then you have two machines that have to consolidate at the end of the night, which, you know, it might not be an issue for you as well, so ...

There's many way to arrange it, but if you did it in a traditional fashion and you treat this only as an accessible machine, you are going to introduce the issue of barriers.

MS. HOWELL: Okay. So your solution is they use a paper ballot. How do they provide access?

MR. LONG: So if they require consolidation, most of those jurisdictions, you know, will do exactly that. They have it print from here and have the voter take it to another machine. A

machine like this usually can't validate the ballot in the same way that this can. It has no accessible, you know, controls on it for the voters. So after it's been cast, they can't actually verify it. It's just something that the counties exempted, the jurisdictions exempted.

Now, we can tabulate it and we can treat it just like it is a ballot. And you can have this in addition to, but, you know, there's other procedural barriers.

MS. HOWELL: Thank you.

1.3

1.5

REPRESENTATIVE FLEMING: Okay. Gentleman, we appreciate it. We know you had to work through some technical difficulties. You had to integrate with a system that was already here. We understand that's difficult so we appreciate you working through that. Good presentation. Thank you very much.

All right, next up. Next we will have Election Systems and Software. And we're going to allow them to break down and allow Elections Systems and Software to set up. So we'll stand in recess for a moment.

(Pause)

REPRESENTATIVE FLEMING: We have our next

presentation of Election Systems and Software.

So I'm going to turn to you and ask you to dazzle us.

MR. CAMERON: Great.

1.3

1.5

REPRESENTATIVE FLEMING: All right.

MR. CAMERON: We will do our best.

REPRESENTATIVE FLEMING: Welcome. Welcome.

MR. CAMERON: Thank you, Representative
Fleming and members of the commission. My name
is Jeb Cameron with Election Systems and
Software, and we brought today, in response to
your RFI, a system that we think will be a great
solution for the state of Georgia.

I've got a couple members of our team here and I'll briefly introduce them. We have Mac Beeson. Mac is a vice president of regional sales from North Carolina. And we have Miss Kathy Rogers, senior vice president of governmental relations from down on the coast, right outside of Savannah. I saw Kim Carlisle floating — there she is. Kim Carlisle is one of our account managers from here in Columbia County.

Like I said, my name is Jeb Cameron. I am a regional salesperson. I grew up an hour and a

half south of here, in Swainsboro, Emanuel County. I live in Cobb County now.

1.3

1.5

I'm going to turn it over to Mac and Mac's going to give you a little introduction to our company. We'll talk a little bit about what you see in front of you and then we would like to really focus our time on the equipment itself and how this solution would work for county election officials, for poll workers, and most importantly, for voters. Thank you.

MR. BEESON: All right. Thank you, Jeb.

So, again, my name is Mac Beeson, regional sales manager with Election Systems and Software. And briefly, a lot of you are very familiar with our company, but for you that are not, we'll talk a little bit about Election Systems and Software. We are a US-based company and we are focused entirely on US-based elections. We've been in business for around 40 years. We're headquartered in Omaha, Nebraska, have over 450 US employees. We are currently in 42 states. We have a lot of experience with statewide implementations, statewide roll-out voting systems. Currently we're the statewide vendor in 12 states, including several that are right

around Georgia here. We have Alabama, South Carolina, North Carolina, Arkansas, West Virginia, several customers in this area with statewide implementation.

1.3

1.5

But what we want to spend our time on today is talking about this voting system. We're so proud of this system that we're showing you today. We call it the power couple. Why is it the power couple? Because this is the system that's revolutionizing the election business today.

We've got our DS200 precinct scanner. I'm going to start talking about that in just a little bit here.

So this system was built entirely with the poll workers in mind. So what makes this so simple? Literally all a poll worker has to do in the morning is look at the screen. It'll automatically turn on, automatically print your zero tape, and you're ready to go. We have poll workers standing up and giving us ovations in training class because they did not realize a voting system could be so simple for them to get started.

The DS200 is a digital scanner that takes a

digital image of the ballots that are scanned.

Beyond the ease of use for the poll workers,

we've got a lot of things that are very

attractive for others as well. You see this very

large touchscreen here. Great interaction with

the voters. We've talked about with this system

you can actually use it for full-size paper

ballots that are marked with a pen.

1.3

1.5

So in this case, I've marked a ballot. We run it into the scanner and you can go with any orientation. Put it in faceup here. It takes about two seconds to scan the ballot. This was an overvoted ballot. Again, you've got a large touchscreen that notifies the voter that we've got this issue. We keep the ballot into the throat of the scanner so if the voter to call a poll worker over to assist, they don't -- they're not notified of how the -- what the voter -- how they marked the ballot.

In this particular case, it says clearly in the contest for favorite agricultural product in Georgia, you have two choices, and you made two choices and you're allowed one. So then the voter has two options. Hopefully they will return the ballot and spoil that and get a new

ballot. If they want to cast that ballot, they can actually do that as well. But it takes about two seconds to take a digital image of the ballot and so at the end of the night, after you close the polls, bring the results back to the elections office, not only do you have a paper ballot here with all of your selections, all of the voters' selections, you also have a digital image of every single ballot. And you also have the software, the image of the digital -- the digital image of the ballot, you have the vote cast record, and you have exactly how the system interpreted that ballot.

1.3

1.5

You've seen a lot of different -- you've already seen a lot of demonstrations of systems here. We're focusing on while the voter is in front of the machine, letting the voter make the decision that they overvoted. We want it to resolve right here in front of the voter. Let the voter make that change and rescan their ballot.

We don't want you back at the back end of the system having to go through a bunch of images and make changes. We want to provide the voter with as much information as possible. This system right here, if it does not recognize the marks or if it's an overvoted ballot, it's going to be presented back to the voter and the voter then has an opportunity to correct that error, not election officials back at the end of the night trying to do that.

1.3

So, again, the DS200, very simple for the poll workers. Like I said, you literally lift a screen, print your zero tape, it's ready to go.

Another feature of this system that we really like is that at the end of the night, you don't have poll workers getting on their hands and knees, having to get these paper ballots.

All of the ballots go into a blue bin and at the end of the night, literally, the poll worker just has to shut the bin, pull the ballot box out, and then this has wheels and a handle so all the poll workers have to do is lock this box and bring it back to the elections office. Poll workers are never physically touching the ballots.

Also the media on the DS200 uses a USB thumb drive so it's an encrypted, secure thumb drive. There's no batteries for the components for poll workers to have to deal with. There's no rolls of paper or anything that's printing throughout

the day that poll workers are going to have to change.

1.3

1.5

In this particular configuration, we use, like I said, full-size paper ballots and very simple set-up for the voters throughout the day. Very easy for the poll workers and this system is well-tested and well-used all over the US. Large jurisdictions like New York City. We have small counties in Nebraska with less than 200 registered voters. This system is proven and by far the largest, most widely-used precinct scanner in the US.

All right, now I'm going to turn it over to Jeb to talk a little about the ballot-marking universal device.

MR. CAMERON: Thanks.

We wanted to spend the time focusing on the DS200 first, and the reason I demonstrated that first is because across the configurations that we're talking about, and of course, in response to your RFI, we know that the state of Georgia is looking at a couple of different configurations:

A straight paper system, ballot-marking devices for all voters, or sort of a hybrid system of the two where maybe early voters vote on the

ballot-marking device and on election day all voters would get a paper ballot.

1.3

1.5

So we want to focus on the DS200 first because this is where the tabulation happens across all three of those configurations. We'll talk next about our ballot-marking device which is the ExpressVote.

We call this a universal system, a ballot-marking device and ADA device for all of the voters. And that's important because what's unique about the ExpressVote is that it is designed as an ADA device. It creates ADA-accessible ballots, but it's also designed for all voters to use.

So we'll go through a demonstration of this in just a second, but, again, know that only the ExpressVote Voting System, every single ballot that is created and displayed is an ADA ballot. There is audio attached to every single ballot, and that's very important for voters with disabilities who don't want to be called out at the check-in process for having to receive a special ballot. They don't want to have to go to a different voting unit within the voting location to vote their ballot. They want to

vote, go through the check-in process, vote, and cast their ballot just like every other voter within the precinct.

1.5

In addition to the ExpressVote, we also have our ExpressPoll, our electronic poll book check-in system, okay?

So at this point, I'm going to go through sort of the voter experience. And I had talked about the DS200. I'm going to go through a check-in process. I'm going to go to our ballot-marking device and mark a ballot for us, and then I'm going to tabulate, okay?

So at the ExpressPoll, the check-in process happens just like it does today. If I'm a voter, I'm going to come in, I'm going to show my ID. A poll worker is going to validate that I am a voter in the state of Georgia, in the county where I am coming to vote. And they're going to look me up on the ExpressPoll and they're going to validate my information. And then they're going to give me something that will activate the ballot-marking device so that I can start the process of marking my ballot.

So we're going to do that here. We're going to look up a voter. We're going to validate that

voter, and the poll worker's going to insert into a printer what we call an ExpressVote voter-activation card, okay? This started out blank. Whenever I insert it into the printer, the information that it printed at the top is basically the ballot style that applies to me, okay?

1.3

1.5

So, again, the check-in process is the same for the voter, instead of receiving what we received today in the state of Georgia, that little yellow voter access card, this will replace the yellow voter access card. Same information that's on the yellow voter access card. Not showing personal information here, no social security number or blood type or anything else. It's simply the key that unlocks the unit and pulls up the ballot that is special to me, okay?

So the voter receives their activator, steps over to the ExpressVote. We're going to insert it here. And just like today where we insert our yellow voter access card, this is what's going to start our voting process. When we do that, it pulls up our ballot. First race appears on the screen. There are instructions as well.

We're going to make selections simply by touching our choice for each race. Down here on the bottom of the screen, we do have the zoom option here. We have the high contrast that was mentioned earlier today. We're going to change the screen from color to straight black and white. And just like today, we go through the screen, we make our selections. We cannot overvote in any races, just like we heard earlier.

1

2

3

4

5

6

7

8

9

10

11

12

1.3

14

1.5

16

17

18

19

20

21

22

23

24

25

And at the end, we'll get to our review screen. And on the review screen, it shows each one of those races and each one of the selections that we made from the choices. And I know it's hard for you to see, but there is a race down here at the bottom of this letting us know that it needs our attention. And when I notice that I see that okay, this was a race where we could vote for two, but I only voted for one, okay? So I essentially undervoted in that race. And I could continue just as before and I could choose to make only one selection in that race. At any time I want to go back and change anything on the review screen, I can do so simply by touching that race, making an additional selection. And

when I touch that, it goes back to the review screen and highlights the changes that were made, okay?

1.3

So at this review point, we can continue to make changes as long as we need to, okay? Once we are satisfied we've reviewed all of those selections, we press next. And here's where it's a little different than it is today in the state of Georgia. Typically, we go through and we make our selections, we review our selections, and we've reviewed, we're satisfied with what we've done, we usually touch the button that says "cast vote -- or "cast ballot," okay?

"cast ballot," we're going to touch "print card,"
okay? And when we do that, the ExpressVote is
going to take that same activator that we
inserted and it's going to give us a review of
each one of the races and each one of the
selections that we made. If we did not make a
selection in the race that race will still
appear, and there will be an indication on our
written record -- if you want to pass that
around -- that basically says, "No selection
made," okay? So at this point, the voter has a

hard copy record of all the selections that we just made on the ExpressVote on our ballot-marking device, okay?

1.3

1.5

Now, at this point, we still haven't cast our ballot. We're still in the review process, okay? If we see something that may be inaccurate on that record or we feel like there was information that we didn't see or there was a mistake made or an undervote we made, because we haven't cast our ballot, we can still go through a process of creating a paper ballot, okay?

If we wanted to understand the content or have a selection read back to us by an audio ballot, we could simply reinsert this card -- and if you don't mind, I'm going to take that back from you. We can reinsert this card into the ExpressVote, and when we do, it will take us right back to that review screen and show us each one of those races and each one of the selections that we made, okay? And in addition to seeing it on the screen, we can also listen to it via headphones, okay?

But, again, if we're satisfied, we've reviewed all of our selections, then we're ready to cast our ballot. And when we do so, we step

over to the DS200, any orientation, slide it in there to the top, scanning dial-up, please wait.

Thank you for voting. Your vote has been counted, okay?

1.3

1.5

As far as any additional information on the DS200 ExpressVote, ExpressPoll, we'll open it up to any questions y'all have.

MR. BEESON: Let me just add something real quick too. Our ExpressVote Universal Voting

Device is running on battery right now. All of these systems -- both of these have internal backup batteries so if the power goes out, we can continue voting. So there's no additional components you have to buy. You're looking a system here, there's no UBS or no internal batteries or anything like that. You have them already in the system, so -- and, again, there's no printers. The paper we used here is thermal paper -- it's basically the half of a full-size ballot, thermal piece of paper so there's no waste in this particular scenario.

So I think somebody asked earlier about, well, I've got a lot of voters, when I go to a paper system, I'm going to get a 15 percent turnout. We're going to pre-print all of these

paper ballots. With this blank card -- piece of paper, if you don't use them all on the election, you can use them the next election. There's no waste associated with that as well. And we're using a full flat piece of paper that's half of a ballot. There's no rolled up piece of paper or paper rolls that have to be changed by poll workers. There's no COTS printers that you have to put ink and toner and things like that that poll workers have to deal with. It is a thermal printer that's inside the ExpressVote. There's nothing the poll workers have to deal with or change.

1.3

1.5

And with that, we'll open it up with questions.

REPRESENTATIVE FLEMING: Mac, how much would it cost the state of Georgia to implement a system like this?

MR. BEESON: Well, we just responded to the RFI. It was three different options in there, and the range is somewhere between 20 million on the low end to right under a hundred million on the high end, depending on how many units.

REPRESENTATIVE FLEMING: You said Alabama,
South Carolina, what else around us?

1	MR. BEESON: North Carolina, Arkansas, West
2	Virginia.
3	REPRESENTATIVE FLEMING: And do y'all have
4	statewide application in those areas where
5	everybody uses the same machine?
6	MR. BEESON: That is correct, yes.
7	REPRESENTATIVE FLEMING: Who's been using
8	the equipment the longest of those?
9	MR. BEESON: Most of these customers bought
10	a new system around the same time Georgia did,
11	but most of them around 2005 or 2006. They all
12	implemented them about the same time.
13	REPRESENTATIVE FLEMING: Who's the last one
14	that implemented?
15	MR. BEESON: We just won the Delaware so
16	MS. ROGERS: Maryland.
17	MR. BEESON: Okay, Maryland would be the
18	statewide that we just rolled out, yes.
19	REPRESENTATIVE FLEMING: Okay. As we go
20	around the room here. Dr. Lee?
21	DR. LEE: (inaudible)
22	REPRESENTATIVE FLEMING: Dr. Lee, turn your
23	mic on.
24	DR. LEE: Okay, yeah. Yeah, so couple
25	questions. First one is I want to make sure that

your system that you're demonstrating is not the same as the one that Georgia is using currently, correct?

MR. CAMERON: Correct.

1.3

1.5

DR. LEE: Second question I want to clarify is that when you demonstrated the paper ballot, you scan the ballot, you said it's an error, it's overvote. The voter can -- just using the touchscreen to register the correct vote, right? You do that when you introduce some discrepancy between the virtual record versus the paper record, so how are you going to deal with this in the audit process?

MR. BEESON: Yeah. If I understand your question correctly, so what we provide on the screen is we notify the voter that it's an overvoted ballot. In terms of a ballot that's undervoted, if it's blank, it's a mismarked ballot. So then the voter has a choice to cast that ballot or to return it and go correct the situation. So if it's an overvoted ballot, you will need to spoil that one, get another piece of paper and mark it if they didn't intend to overvote.

DR. LEE: But suppose he chooses to just

cast it? Then in the audit process, what would we do?

MR. BEESON: So if that voter wants to cast an overvoted ballot, they're totally allowed to do that. That particular contest wouldn't be counted and in all of the other contests the ballot would be.

DR. LEE: Thank you.

1.3

1.5

MR. CAMERON: In reference to the audit there, I mean, I think the important thing to note also is that post-election when county election officials are going through a post-audit, there will be an audit of any of those votes that the voter overvoted. It does provide you an audit of that ballot. It shows you that that voter did actually intend to cast the ballot as it was even though they were given the choice to --

DR. LEE: (inaudible)

 $\label{eq:REPRESENTATIVE FLEMING: Dr. Lee, turn your \\ \\ \text{mic on again.}$

DR. LEE: Sorry. I was unclear how you actually record the action that the voter actually chose to miscast it. So how is that captured?

MS. ROGERS: You might be referring to the internal audit of systems today, how it logs that. It will show you every action that's captured. In post-election, we have election officials today who will use that audit-log data to determine how they can improve the election process of a certain poll. They can take that data and say we need more voter education in this particular area. A lot of voters overvoted on a particular ballot. So that capability exists now within our technology.

DR. LEE: Okay.

REPRESENTATIVE FLEMING: Okay. Going around the room here. Questions? As I move back to this side over here? Lynn?

MS. BAILEY: Thank you. So when processing absentee ballots on regular paper, there is a different type of device or is it the same device? And what's the scan speed for those ballots?

MR. CAMERON: That is a great question.

Thank you for asking that, Lynn. In response to the RFI, in addition to the DS200 scanner that you see here, we also -- and this is something that at a personal level that I'm excited about

for the state of Georgia. Having worked as a county election official in both a small county and a large county, I like that we are able to offer different types of scanners for different sizes of counties. We know that, you know, especially in a place like Georgia where you have all the way from Appling County to Fulton County, I'm excited that we're able to offer high-speed options from medium- to large-size counties.

1.3

1.5

So in response to our bid, we did do the DS200 for, you know, the vast majority of the counties in the state that are considered small. So in this county, for example, Judge McCoy may have a couple hundred absentee ballots to count at the end of the election. You can use the DS200 in your office to scan those ballots.

Lynn, you asked the question. In a place like Richmond County, in addition to the DS200, we also have our DS450 which is one of our high-speed scanners, and it counts anywhere between a hundred to two hundred ballots a minute, okay?

We also have for the Fulton Counties in the world, Cobb Counties, Gwinnett Counties, DeKalb Counties, we have our DS850. And our DS850

counts the hand-marked absentee ballots and ExpressVote components for that matter as well at a speed of close to 300 ballots.

Did that answer that question?

MS. BAILEY: Yeah, thank you.

MR. CAMERON: Great. Thank you.

REPRESENTATIVE FLEMING: Jeb, I have a very important question for you. Instead of it coming in red and gray, will it come in red and black?

MR. CAMERON: As a UGA graduate, we will color this however the state wants it.

REPRESENTATIVE FLEMING: I will be more apt to color it red and black than I would anything else.

All right, the judge has a serious question.

JUDGE MCCOY: Couple of questions. First of all, I'm not clear on the ballot marker, the receipt. The paper comes back out and the voter says this isn't right or I want to change that.

I saw you reinsert it. If that voter makes a change, what happens to the paper?

MR. CAMERON: That's a great question.

That's a great clarifying question. Whenever I reinsert it to review, know that that is a marked ballot. It's already been printed as a record.

So if I were to reinsert a ballot that's already been marked into the ExpressVote, I can't make any changes at that point. It's simply going to provide us a review of what has already been marked on a ballot.

So I do my record and I say no, I think I see a mistake. The state would use the same

1.3

1.5

see a mistake. The state would use the same procedures that are in place today. For spoiling a provisional ballot, for example, you would create a spoiled ballot, you would go to the ExpressPoll, reissue a card, and that voter can begin their marking over.

JUDGE MCCOY: One other question. Are the votes embedded in a barcode? Is there a --

MR. CAMERON: The selections are represented on the ballot marked -- any votes that are cast, any ballots marked on the ExpressVote are represented by a barcode in addition to the hand-readable text that appears on the ballot as well.

REPRESENTATIVE FLEMING: Okay, any more questions? Deirdre?

MS. HOLDEN: I want to go off what Lynn was asking with the high-speed counters because I know that would be something that Paulding County

would have to have because we have several thousand absentees, but does that counter take a digital image of those ballots --

MR. CAMERON: Yes.

MS. HOLDEN: -- for auditing purposes?

MR. CAMERON: Absolutely. So the DS200, DS450, and the DS850, all, as they are tabulating and scanning are taking a digital copy, front and back, of every ballot that's being scanned.

So back at election central, when y'all are doing post-election audits, you can look within the election management software itself. Every image of the ballot and a cast-vote record, side by side, to show you here's the image of the ballot, and then here is how the software itself interpreted that ballot.

But most importantly, in addition to the digital image and the cast record, you also have all of the hard copies of the ballots that could be audited postelection.

MS. HOLDEN: Next part of my question is with this system or any of the other systems that we've seen, is this going to help in the logic and accuracy testing? Is it going to be simplified more than what we have to do now?

Because, you know, it could take -- in Fulton County, it would take them weeks. It takes us a couple weeks to do that. So will the process of the testing of the machines be simplified with these new systems?

MR. CAMERON: It will. And the important thing is you're going to continue to test the most important part of what happens on election day which is, of course, the tabulation itself.

You will test the ballot-marking devices to make sure when you talk about things like barcodes, that the barcodes are representing the correct selections that are being made in that ballot-marking device.

Let me put it in a nutshell and let me talk about election day real quick, opening and closing procedures to kind put in a nutshell how this kind of consolidates down based on what we do today.

So today let's say, Ms. Holden, in your largest precinct, how many touchscreens do you employ?

MS. HOLDEN: Thirty.

MR. CAMERON: Thirty? Okay. So let's take
that precinct. In the morning, your poll workers

go through an opening process on 30 units and part of that opening process is you are printing tapes, zero tapes on 30 units, and they are verified that each unit has a zero count at the beginning of the day. Throughout the day voters are voting on those 30 units. 7 p.m. rolls around, it's time to close down the precinct.

1.3

1.5

Your poll workers now are going to go through the process of closing down 30 units and they're going to end the election on 30 units. Then they're going to print three copies of the results tape on the 30 units, and then they're going to remove the memory device out of 30 units and they're going to bring those tapes, those memory cards back to your office. And then you're going to go through the process of uploading 30 cards to get the results for that precinct.

Let me tell you in a nutshell how this is a little different, okay? You may have -- let's say, you take that same precinct. You may have -- if you do a one-to-one ballot-marking device for the touchscreens that you have today, you'll have 30 touchscreens, ballot-marking devices for the precinct. You may have one, you

may have two scanners depending on the volume of that precinct, okay?

The opening process for the ballot-marking device, because it does not tabulate, is to simply open the security door and power it off. That's it. There's no printing zero tapes from here because there is no tabulation that's done here.

So you've consolidated down the opening process for 30 units to one single or two units at your precinct. Same goes for the closing process.

To power down the ExpressVote and close out the election on the ExpressVote, you simply reopen that security door and you turn it off.

That's it. There's no tapes you have to get.

There's no memory devices that need to come back to election central. Instead, here, with the DS200, you open the security door, there are two buttons for your poll workers. One says power.

One says close poll. And when they touch "close poll," three copies of the results tape are automatically going to generate out of the DS200, okay? Then they bring, just like Mac showed you, that blue ballot bin, the memory device, the

tapes back to your office. Instead of uploading 30 memory cards, you're uploading one or two. Does that give you kind of a high-level idea of what we're talking about when we're simplifying the process, not just for you but for your poll workers as well?

MS. HOLDEN: Thank you.

MR. CAMERON: Sure.

REPRESENTATIVE FLEMING: John?

MR. MONDS: I have a question about the digital scanners. Now, you said that possibly in the polling precinct you have one or two of those. And in your demonstration I believe you said that if a voter was unsure that they wanted to change their ballot, that they could do that, and my question would go to would that possibly cause any backups, you know, in a polling place if you have a voter that's standing there taking a long time, you know, making their decisions if you only have one or two of those? And is that your recommendation that there will only be one or two digital scanners in a polling place?

MR. CAMERON: Yes. Most precincts across the US have chosen a system that's one scanner in a polling place. We have a few in New York

City -- I have some locations that use two.

Fairfax, Virginia has 800,000 registered voters.

They use one in most of their polling places.

The digital scan technology in the system is so good, you could scan the ballots -- it's about two seconds to scan the ballot.

1.3

1.5

And then it's really one options for -- or two options for the voter if they overvoted a ballot. If they cast it or return it. So then they would move away from the scanner and then go back to the check-in.

MR. MONDS: And then my other question is going back to deliverability on the scanner. On the time frame of implementing and changing the whole system, what kind of time frame would we be looking at?

MR. CAMERON: Well -- and we have a lot of experience rolling these out statewide, and, you know, different -- often we're given shorter time frames than everyone would like, sometimes we have more time. I would say with us being the largest US manufacturer, we've got a great supply chain. We're preparing for a really large number of jurisdictions to buy new equipment next year, and we're planning now for something like that,

and, again, it's just -- you know, some states will do a phased-in approach, some states will go everyone at the same time. And we would work with you all on what the best plan based on your timelines is, and we've got the team ready and available to get it done in the time frame you need us to.

Thank you.

1.3

REPRESENTATIVE FLEMING: All right? All right, Sheila has our last question.

MS. ROSS: Thank you, Mr. Chairman. I'd just like to piggyback on one of John's questions which is in the 42 states that you have active and rolled out already, what is the average voting time for the voter?

MR. BEESON: We've done some studies on -especially we have a lot of experience with
customers moving from DREs to this type of
system. And if we're talking usually going from
a DRE to ballot-marking, we're seeing the times
all very similar to the time it takes to load it
on a DRE as the time it takes to load it on a
ballot-marking device. So very similar to what
you're used to today.

MS. ROSS: Did you actually do studies on

that or is it just ...

1.5

MS. ROGERS: First I want to say I have tried to study that but it becomes difficult because ballot size is different all across the country. Georgia's done a pretty good job of trying to reduce amendments and summary language on their ballots. Not everyone is that good.

We just recently had an election in another state where there were, like, hundreds and hundreds of ballot decisions because of some precinct committee races. So it does depend on the ballot length as to how long it actually takes a voter to cast a ballot.

But Mac's right, if the ballot size is similar to today, then you wouldn't really see any degradation in time.

But I apologize. It is a hard question to quantify because of ballot complexity across the states.

REPRESENTATIVE FLEMING: Gentlemen, Mac, Kathy, thank you for a very good presentation.

Appreciate your being here today. Thank you.

Our next presenter will be Hart InterCivic.

And as they breakdown and Hart sets up, we will be in recess for a moment.

(Pause)

1.3

1.5

REPRESENTATIVE FLEMING: All right. If everybody will come on back and find their place, we will begin with Hart InterCivic.

I'm going to turn it over to you. Please introduce yourself. Good to have you today.

MR. BROXTON: Thank you, Mr. Chairman. My name is Dwayne Broxton with Hart InterCivic.

It's good to be here today. I've worked with Hart beginning of this year, prior to that I worked with the state of Georgia (indiscernible) election night reporting system.

So today, we're going to take some time and talk about who we are as a company. I think that Hart may be new for some of you. And we're also going to talk about the Verity Voting Platform.

And we're going to talk about the paper ballot and also we'll walk you through a quick demonstration of our software.

Unfortunately, Sean Phillips had to go back to Texas because of a family emergency this morning. Again, my name is Dwayne Broxton. I'm the regional sales manager.

So for those of you who have not heard of Hart, we have been in business since 1912,

printing ballots. I don't think there's anyone else that we've seen today that can say that they have been around in the elections for that period of time.

1.3

1.5

And as you notice as you look at the timeline, throughout all of that, we introduced the first DRE in 2000. We were the first digital ballot in 2002. In 2011 -- and why I point that out is because it's pretty important. We were the first company to actually have a survey. And we're going about what we got from the survey and why it was important.

2015, we came up with the Verity Voting
Platform for our customers. So you'll notice
that we've got a footprint all over the United
States, and that's important. And Georgia is
looking to pick their next voting hardware
vendor. You definitely want to pick someone that
has experience.

From Hawaii to Virginia and a lot of states in between, you'll notice that we're in those states. We have over 800 jurisdictions served and Texas is where we're headquartered, in Austin, Texas. We also manufacture our equipment in Austin, Texas as well.

Statewide implementation experience:

Oklahoma and Hawaii. So let's talk a little bit about both of these states and why I think it's important for Georgia here today. The state of Hawaii, which we handled their elections, does everything except hire their election workers.

From soup to nuts, we run the elections for the state of Hawaii.

1.3

1.5

Oklahoma's a little bit different. For Oklahoma, we support them as they need. They have regions similar to your regions that you have here. I think they have 11 as opposed to you have 13. We train their technicians to be able to actually do some of the repairs to their equipment. We don't -- and we'll talk about maintenance as we get into the presentation.

Why this is also very important, both of these two states are top-down states and they're paper states. So we have the experience with states that are top-down and use paper ballots. Again, proven experience: Our largest county, Harris County, Houston, Texas, 2.3 million voters. Our smallest county, Kenedy County, Texas has 208 registered voters.

So I say this essentially, the make up of

counties, large counties, small counties, and everywhere in between, we services those counties.

1.3

So just to let you know, our VP of operations is not actually Pete Lichtenheld, it's Dr. Phil. And why I put that out there, it's pretty important because, you know, working with states and counties, Dr. Phil talks about communication and that's very important and we're going to get into why that's important. So our customers rate us 95 percent of overall customer service. The biggest number there is a hundred percent.

So there are roughly 4,000 jurisdictions nationwide. Out of those 4,000 jurisdictions, you know, as you can imagine, in the industry some people move from one vendor to the next.

Those counties or jurisdictions that have chosen to moving to Hart have rated our services far superior to the vendor that they left.

So we talk about how we do that.

Communicate, we'd like to help. Our VP of operations spends about half of his year meeting with current clients, talking about what are their issues, what are they going through, what

are their challenges. We've taken that feedback and put it into action.

The Verity Voting Platform which is why I'm here today. So every vendor that's been here in front of you, at some point in time had a decision to make around 2011, 2012. Ten years after Harvey, we had the experience of running the elections -- I'm sorry, I said Harvey. I live in Houston. It's on my mind. Ten years after HAVA, we realized that we got a lot of feedback and HAVA was a great starting point.

But in that ten years, from talking to our clients, we learned a tremendous amount about elections and how we can process better. So instead of bolting onto existing technology, we took a blank sheet of paper and we decided to come up with the Verity platform. Easy, modern, trusted.

So, again, we took that blank sheet of paper -- there we go, a blank sheet of paper, and we took feedback from our clients, came up with the Verity platform, and here's what makes it easy. As we walk through a demonstration, we're going to talk about the user interface. They're all similar, they're all the same.

So once you train the election worker on this piece of equipment, they're going to understand how to operate this piece of equipment as well as the scanner.

1.3

1.5

The compact design, as you'll notice, our ballot box on top here (indicating) at the very end. It's an ADA-accessible height. It's a collapsible ballot box, 17 pounds, breaks down to about 6 inches.

You'll also notice the hardware. All of the pieces that you see in front of you come in a suitcase with the tablets protected inside of the suitcase. You've got three different pieces in front of you. This is called the Verify controller. This is a full-working device. It allows the election worker to manage the polling place from your desk, from your setup.

This is the Verity Touch Duo. This is a ballot-marking device. This allows you to keep the DRE experience and add a paper trail.

And this of course, the last piece, is the scanner. And we're going to get into all of these a little bit more later.

So Verity by the numbers: We're in 11 states, 92 jurisdictions, 4,100 precincts. The

biggest number there, 6.4 million people have voted on the Verity platform. And, again, that is a new platform, first implemented in 2016. So in that short period of time, we've been able to gather 6.4 million registered voters.

Common platform for adaptability. If there's one thing I want you to take away from this platform, it's common platform adaptability, what that means to Georgia.

I've talked to many people in this room and I know that Georgia financially is in a very good position. You don't have to go out and buy the cheapest voting system just because it's the cheapest voting system. You've done a very good job and right now, 2018, you can afford to go out and maybe spend that a hundred million dollars, a hundred fifty, hundred seventy, whatever the price tag may be once you decide.

Where are you ten years from now?

Purportedly in 2019, 2020, your counties, some of your smaller counties have to go out and purchase equipment, okay? And even if that pendulum swings from where it is is right now where everyone's talking paper, we can go back to DREs in ten or fifteen years. This platform will

allow you to convert this scanner into a DRE.

1.3

Let me say that again and why that's important. Right now, we offer an initial investment, you're going to try your best to make sure every county, every jurisdiction has the equipment that they need, the proper configuration. But sometimes populations change, voters move from one county to the next. You can't predict in 15 years down the road where you're going to be.

We're the only system that allow you to be able to do that, to convert one piece of hardware into other as a county needs at a fraction of the cost of actually going out and purchasing new equipment.

Let's talk paper. One thing that Hart is not going to tell the state of Georgia to do is exactly how you should spend your money. We're going to give you options. We support an entire voting platform, all forms of paper, whether we're talking preprinted ballots, which is essentially preprinting the ballots, and a scanner in a precinct along with an accessibility device. There's also the option to actually print out ballots in the precinct on demand.

That's exactly what it sounds. And when the voter is checked in, you're able to look up their ballot style and print their particular ballot there in the precinct, eliminating the waste of preprinted ballots. They take that ballot and then put it directly into a scanner.

1.3

1.5

Now, the option that you see in front of you today is what's considered in the industry a hybrid concept. Again, taking a ballot-marking device, adding a piece of paper to it, which is thermal, after they vote, they will be able to actually see. And here's where it's going to be a little different. I'm going to walk around so you all can see this. You'll notice a full-size ballot even though it's a contest and the candidates on the paper. You'll also see that QR code in the corner.

Let's talk about all of it. We read the contest in character off the paper. In this code, there is nothing that ties the contest or the candidate or the voter inside that code.

This code strictly allows this piece of paper, the ballot, to be put into the scanner. There's nothing in here that, again, reveals the voter, the contest, or the candidate in that barcode.

So this is a bad picture of a screwdriver, I apologize, but this is to talk a little about our maintenance plan. We don't lock you into a maintenance plan. All you need is a Phillips-head screwdriver to change the battery in the bag.

1.3

1.5

So there are two batteries. There's a hot-spot battery which powers the tablet itself, and also there's a battery for the motherboard. Now, having talked to people in Georgia, I understand that some counties have different resources. I think what we would do is work with the state of Georgia in 13 different regions to be able to actually train roaming technicians throughout the state of Georgia, closest to the models we have on loan.

Now, if the state of Georgia wants to spend the money for a maintenance contract, we'll do that, but I think the more responsible way fiscally is to actually train you all to be able to handle some of the light repairs. We can always send major repairs back to Hart.

We're going to talk a little bit about security. We call it defense in depth. If you think about back in medieval times in a castle,

you had different levels of security. You had an open field, you can see any intruder coming from miles around. You have a moat and you also have the drawbridge and the wall.

1.3

1.5

So the first thing in security is the physical access. Key locks, you'll notice on all of our hardware we have key locks, sometimes on a handle, tamper evidence seals. So inside here -- you can't see it from where you are, I apologize -- we have what's called -- like everyone else, we have a removable flash drive. That's where the media and the vote's going to be stored. On actually, this piece that we see today, it's under a lock. It can also be a tamper evidence seal.

We also have what's port obfuscation. Now, what that means essentially is this. Our cable is not the standard wiring for our cables. As the data is transmitted from one piece of hardware to the next, it's actually so the wires are scrambled. So no one will be able to come and take it. The cable bought at Walmart, Radio Shack and that's just taken into the back assuming you'll be able to get information off of it.

One of the most important parts of this is actually people and procedures. All of your election administrators will tell you this.

Hiring the right people, coming up with the right procedures. You're going to go from right now using DREs and paper. That's going to be a lot different than what most people in most elections have experience. So it's going to be important that Georgia sits down with a partner that has the experience and can bring best practice to the state on the people and procedures you need to have in place.

1.5

So we'll go through these very quickly.

Threat modeling, walled-off security protocols, attack service reduction. This essentially is a custom Windows 7. It's industrial-strength

Windows 7, not typical to what you would go on your computer at Best Buy and purchase. It's industrial strength, industrial grade. We basically only use the components of Windows that we need for our operating system.

When you start, this starts the kiosk system mode, you do not have the ability to have solitaire or any other applications you would like to.

Whitelisting. So essentially what we do, we don't blacklist. For those of you that are unfamiliar with the term, blacklist is essentially knowing what threats are out there and making sure that those threats can't get into the door. Well, as soon as you actually publish that, those are old threats.

1.3

1.5

So what we do, our system only allows you to use what's actually coded for it to use. You can't actually load anything onto these systems, again.

Secured boot. Again, they boot up. They boot in the kiosk mode. When they boot up, they're actually able to tell if they've been tampered with. One of the things that's out there -- and we'll talk about the hacking of election equipment. I think we all understand at this point that the system is air-gapped.

There's actually no way to actually hack on to any of our equipment -- probably most of the vendors will say the same -- from the Internet.

They just don't have the hardware, the internal hardware, to get online.

Well, also with the secure boot, if someone tried to actually sit down at the system and get

into the system, it would basically shut down the hardware.

1.3

1.5

Two-factor authentication. Something you have versus something you know. There's a security key and a password key, exportable hash files, and we'll get into the role-based access and control. So it's based on permission levels at the county level and the state level and credentials. You basically can control who has access to what -- that's essentially what we're saying -- at state level, even into the counties you have the ability to lock out people.

And also this: You can see who has accessed the data, just as important. If someone goes in with their password, you can know what functions they performed. Password management, again, will give you best practices on password management, system log-in auditing.

Permission levels, we've gone through that.

Human readable data, this is important. Our keys, our flash drives are basically encrypted. But if you stick that in, you've gotten access to it, you will actually be able to read the votes. What you will not be able to do is change them. If you do somehow figure out a way to change

them, if it is, quote/unquote, hacked, as soon as you take that to the central count or the workstation, you'll know right away that that was -- that somehow that flash drive became corrupted. You will simply go back to the scanner, download the results again, and take it to your central count.

1.3

Now (indiscernible) encryption standards, data in motion, again, human readable, tamper evidence seals, I think we've got over that.

Let's talk about the ballots again. I think I mentioned this earlier. Again, that QR code, nothing ties the voter to this piece of paper. You can't see the contest, you cannot see the candidates. Let's vote.

Bethany, if you would come up.

So, again, I'll walk through it quickly. The hardware you have in front of you, this is what we call the Verity controller. Again, this allows the election worker to actually manage the precinct. I have it facing you right now, but in the precinct -- in the polling location, it would turn around, facing the election worker. This is a ballot-marking device and again that is the precinct scanner.

So right now, you'll notice -- this may be a little difficult for you to see -- these two pieces communicate right now to send the data. The reader is not -- so this piece of paper in here -- the voter has already voted. This is going to happen when you move to paper. Because of the DRE experience they experience now, it's probable the voter's going to walk away and leave their ballot sitting right here.

1.3

Now, what you'll see, after a couple of seconds, it will let an election worker know, okay, that this voting terminal is not ready to be used.

So, Bethany, if you want to vote.

What she's doing is actually creating a voter access code. That's a voter access code (indicating). That essentially makes sure that when a voter goes to the ballot-marking device, they vote the right ballot style. The election worker is going to hand the voter that voter access code and a piece of paper.

Punch in your access code. Go ahead and insert.

So you'll see here that the voter has correctly inserted the piece of paper that's

creating a check mark, let's her know that it was accepted.

Go ahead and vote. Yeah.

1.3

1.5

So you can't see the screens from where you are but as she's voting, on the left-hand side of the screen, it gives the voters instructions to every single screen. So the voter always knows exactly what to do. If they have any questions, they will see it on the left-hand side of the screen. All of our screens, again, you can adjust the contrast and the font size.

For contests that have more than two choices, not until you mark both choices will it actually appear green. So once she's actually gone over her choices, she has the option to print. It's going to ask her twice if she actually wants to print the record.

This is her ballot, the same ballot I showed you earlier. And she'll walk over to the scanner, place her ballot on the scanner, she's voted. And similar to the other systems you've seen here today, if we were talking hand-marked paper ballots ...

Okay, perfect. So there's an error screen. The error screen says that you cannot scan -- it

let's the voter know right away what's going on.
There's a paper jam. Contact your poll worker.

REPRESENTATIVE FLEMING: She forgot to vote for me. That's what the problem is.

MR. BROXTON: Could be exactly what it was.

REPRESENTATIVE FLEMING: Yeah, that's it.

MR. BROXTON: Unfortunately, that's a problem for the scanner. That was a poll-worker issue by the way. It could happen. It's probably exactly like that. The scanner wasn't placed on top of the ballot box. That never happens, right?

Lynn, that never happens? Probably not. And she's voted.

Any questions?

REPRESENTATIVE FLEMING: So in that case, the machine, the scanner knew it wasn't in the right place?

MR. BROXTON: Correct. So the ballot box -REPRESENTATIVE FLEMING: Ah, it lines up.

MR. BROXTON: It lines up. There's a locking mechanism right here that locks into place. So an election worker sets up. It's as simple as pulling this white cord to lock it into place.

REPRESENTATIVE FLEMING: Okay.

1.3

MR. BROXTON: They may do what I did, it's quite possible, probable even. Once it locks into place, it lines up.

REPRESENTATIVE FLEMING: Dwayne, how much would it cost the state of Georgia, in y'all's estimate, to implement this all across a hundred and fifty counties? Any guestimates there?

MR. BROXTON: Absolutely. So if we're talking pure paper, you're talking roughly around \$40 million for a pure paper-based system. If you're talking a hybrid, similar to what you've heard, around a hundred-million dollars. And printing the ballots at the poll location, somewhere in between.

What we would need, as probably every other vendor here, was the correct configuration of not just precincts but polling locations. And Fulton County precincts, the polling locations may be different than some of your smaller counties here. Your metro counties may have combined super precincts at a polling location, and in those places you may absolutely think about a second scanner, whether it's preprinted ballots or a hybrid system.

REPRESENTATIVE FLEMING: Dwayne, you've -- I think you began to touch on this. It's something that's been brought up today. I think Dr. Lee mentioned it a time or two, but what about the flexibility of the system as we move forward into the future. You know, as Georgia has different needs or the industry demands change, how about that?

MR. BROXTON: So I'm going to go over this again. Thanks for the question. Right now it's not just Georgia, it's all across the United States. Everyone's going to paper on some form, whether it's preprinting the ballot, printing the ballot at the poll location, or hybrid.

Ten years ago, no one saw going back to paper or very few people saw going back to paper. Where are we going to be ten years from now? No one can tell you. I can tell you probably this with some certainty, as you go back to paper, there will be some people that remember paper from before, and they may even say: You know what? Maybe we want to go back to the DRE. That -- those calls are going to be out there just like the calls for paper right now. What the Verity Voting Platform will allow you to do,

if you go back to a DRE and you no longer need a

scanner or if you decide to go another version of

paper just -- if you decide to go to preprinted

ballots and you wouldn't need either one of

these, you can convert those to scanners.

Complete flexibility across the platform.

Fiscally, ten years from now, you also don't

know where Georgia will be. I think Georgia will

Fiscally, ten years from now, you also don't know where Georgia will be. I think Georgia will probably be in a pretty good place. I'm sure you all feel the same. What if you're not and you still have these concerns about your hardware and your platform?

REPRESENTATIVE FLEMING: I'll start over here on this side and work my way around the table. See if there's any questions.

Nancy?

9

10

11

12

1.3

14

1.5

16

17

18

19

20

21

22

23

24

25

MS. BOREN: The first step that you do --

MR. BROXTON: Yes.

MS. BOREN: -- does that contain voter data?

MR. BROXTON: No.

MS. BOREN: Okay. Where do you get the voter data for the code to create the ballot?

MR. BROXTON: So what happens, the voter comes in, they check-in at the electronic poll book, similar to what you've seen earlier. And

we've worked with Tenex, Know.ink, and many of
the poll books that are out there. Once that
voter gets checked-in, they get their ballot
style. You can come over and the election worker
can manually input that or they can use a
bar-code scanner. Now, we suggest using a
bar-code scanner that would print out from your
electronic poll book. They scan the barcode, it
prints out -- it's called the access code. The
access code is essentially their ballot style.

1.3

1.5

So if they go to the ballot-marking device, they punch in the access code, and I'll use the old access code. And you can see it turns red because this code has already been used. So a voter won't be able to come back and use the code and try and vote and again. Or even go to another precinct and try to use this code.

MS. BOREN: Yes. And so in a primary if a voter changes their mind and they want to vote Democrat instead of Republican or vice versa, they go back to the beginning and get another code?

Does that answer your question, Ms. Boren?

MR. BROXTON: Correct. I'm glad you asked
that question because a voter -- and I think it's

already been said here today -- they have never really voted so they actually cast this into the scanner. I think everyone understands that.

So any point along the process, depending on how Georgia wants to do it, you can spoil this ballot and then they would have to base it on your policies and procedures to get it back in line to vote Democrat or Republican.

Or even -- again, this is a full ballot with the contest, and they say: You know what? I don't want to vote for Beverly Davis any more, I've changed my mind. Spoil the ballot, start all over again, and they will cast their vote.

REPRESENTATIVE FLEMING: John, that will be Democrat, Republican, or Libertarian, right? Is that all right?

MR. MONDS: In my opinion (indiscernible).
REPRESENTATIVE FLEMING: I just want to make
sure we got that.

MS. BOREN: One last question.

REPRESENTATIVE FLEMING: Sure, Nancy. Go ahead.

MS. BOREN: I'm sorry.

So the first step, will it contain every ballot style in their county for early voting,

and then secondly, can it be programmed for a precinct to only contain ballot styles in that precinct?

MR. BROXTON: The first answer is yes. The program only contains ballot styles at a particular precinct.

That's a question I'll honestly have to get back to you because I don't know the answer to that. I think that it can, but I want to give you the right answer. And I apologize. If Sean were here with me, we would know that right away. But I don't know, I'll have to get back. I will get an answer to you today.

MS. BOREN: Sure. Thank you.

REPRESENTATIVE FLEMING: Going around the room. Dr. Lee?

DR. LEE: Thank you. So can you clarify which user uses the QR code. In particular if a user hand-marked ballot, do I also have QR code and where does that come from?

MR. BROXTON: Okay. So let's start with the hand-marked ballot. If you have a hand-marked ballot, there is a QR code on all of our ballots. On all of our ballots, we are going to read what you see on paper. We're actually going to read

the contests and the character. You'll see barcodes but they're essentially -- they're just to line the paper with the scanner, make sure we're reading the correct contest and the marks on the paper.

The second part of your question was about this QR code. Again, this only contains the information that you see at the top of the paper which is the precinct and the date.

DR. LEE: Why do you need that? Why make a difference between the hand-marked versus a printed-out ballot? Why have the QR code there on the side?

MR. BROXTON: Why is there a QR code on
this?

DR. LEE: Yeah, and not on the hand-marked
ballot.

MR. BROXTON: On the hand-marked ballot we still have voting on the hand-marked ballot.

It's essentially used to scan to line it up here.

The QR code here is just to really use for the further precinct information. I think I'm misunderstanding the question.

DR. LEE: But then if I go to the precinct,
I use hand-marked ballot, and you said I don't

have a QR code. Why not? Because you said QR code is containing the precinct information. So why is it different between hand-marking versus ballot machine printing?

MR. BROXTON: Well, on the hand-marked ballot, you do have codes on the side which will contain precinct information. Is that -- am I answering your question correctly now? So you'll still have a version of coding on your hand-marked ballot. Am I ...

DR. LEE: Yeah (inaudible).

1.3

1.5

REPRESENTATIVE FLEMING: Cynthia, hold on.

I'm going to go to Lynn and then we'll come back
to you on this side.

MS. BAILEY: Thank you. So can you address how your system in the central count environment would adjudicate an overvoted ballot.

MR. BROXTON: Okay, absolutely. So let's first start with -- if you're talking hand-marked ballots, before I get to central count, if you'll allow me that, the voter will actually be able to correct because it will not take overvotes here. It will allow them to overvote if they choose to but it will not be counted. And you can force the undervote.

In the central count situation -- and we don't have the software displayed but you would essentially be able to pull up all ballots that they have an issue with. It will be flagged.

And let me mention how our central count looks a little different than what you've mainly heard here today. You do not have to presort your absentee ballots. You're able to just take all of those ballots, put them into central count, and they will sort based on their precinct. When it comes to adjudication, those ballots are flagged, they are put in the separate box where you can actually pull up each individual ballot and basically adjudicate voter intent at that time.

REPRESENTATIVE FLEMING: Okay, Cynthia's going to have our last question.

Cynthia?

MS. WELCH: Real quickly. I want to confirm the steps that a voter will go through when they come in to vote. One, they would go to the e-poll book, and from that step they will go to the machine here to get the ballot code.

MR. BROXTON: Correct.

MS. WELCH: And from the ballot code, they

would go to the ballot marker and from that point, they go to the tabulator?

1.3

1.5

MR. BROXTON: Yeah. So you can actually -depending on how you feel works best for your
efficiency, you can actually have the person
that's checking them in also operating the
election management poll book, this device, as
well.

So it can be separated out or it can be right -- we have counties that actually have this one election worker checking in the voter and also administering the access code. Now, once that voter gets the access code, they would then move to a ballot-marking device. However, your precinct will have total (indiscernible) figure, they will be there after they've voted and go to the scanner.

MS. WELCH: Okay, so here where they get the access code, and the voter comes over to the unit to do the balloting --

MR. BROXTON: Ballot-marking device? Yes.

MS. WELCH: Right. Explain to us if someone put in the wrong code. If you don't use the scanner and we punch the number in there and we put in the wrong number and give the voter the

incorrect ballot style, how do you prevent that between the three stations?

MR. BROXTON: So let's make sure I understand your question. If they punch in the wrong code?

MS. WELCH: Right. The wrong ballot and access code here, based on the paper that they received, it's the incorrect ballot style --

MR. BROXTON: Okay, so --

MS. WELCH: -- how could that be corrected
before you --

MR. BROXTON: Couple different --

MS. WELCH: -- let the voter know?

MR. BROXTON: Couple different things. So this code is only good at the polling location. If they put in a wrong code that was not issued by this, they would not be able to vote here.

MS. WELCH: Okay.

MR. BROXTON: But let's take the second half of your question because I think there was a question there that how are we able to catch if there's something wrong on the ballot. They actually have a paper ballot, before they scan it. And I think another question I heard earlier in the day was wait times, what we've seen when

people actually use either a preprinted ballot or a ballot printed at the polling location. Generally speaking there's not a big issue with waiting at the scanner because they actually have a paper ballot in their hand. They've got something they're actually physically holding. They're reviewing the contests and the candidates. Does that answer your question? MS. WELCH: Yeah.

JUDGE MCCOY: Mr. Chairman, one quick question.

1.3

REPRESENTATIVE FLEMING: Yes, Judge.

JUDGE MCCOY: So you totally rely on the poll worker to manually enter a code in there to get the right ballot style.

MR. BROXTON: No, sir. I'm glad you asked again. We actually have a scanner. So this scanner, which you just heard, this actually eliminates the human error of the poll worker. When they get that access code or that QR code from the electronic poll book, they scan it and that pulls up their ballot style, and that will actually print the access code.

JUDGE MCCOY: But your company does not

provide the electronic poll book. That would be another company that would have to partner with you.

MR. BROXTON: Correct. And we've been partnering with a company called KNOW.ink which I think some of you are familiar with. Tenex, we've been partnering with them all over the United States.

Thank you.

REPRESENTATIVE FLEMING: You were left short-handed today, you did a great job. We appreciate it, thank you.

MR. BROXTON: Thank you, sir.

REPRESENTATIVE FLEMING: All right.

And our last presentation will begin momentarily. We'll standing in recess with Dominion Voting making a presentation for us.

(Pause)

REPRESENTATIVE FLEMING: All right. If everyone would make their way back to their seat, it is the presentation we've been waiting for all day, the last one.

We appreciate you being here and I'm going to turn it over to you and we'd love to hear from you. Welcome.

MR. HORACE: Good afternoon, Chairman, and good afternoon, Commission. My name is Matt Horace. I'm the chief security officer for Dominion Voting Systems, and in that role I'm responsible for Dominion's enterprise-wide security, cyber security, and physical security, information technology, and all things security.

As you know, Dominion is US owned and we're very experienced in executing statewide implementations. We most recently received the support of the state of Louisiana, our latest acquisition, and it is my honor today to introduce to you to our team of professionals.

First, Dr. Eric Cooper, he is our director of product strategy. He has worked in elections for over 13 years, including software and hardware development as well as on-site election support, including the creation and management of election projects and election-day activities.

Mr. Scott Tucker, customer relations
manager, he's been in the elections industry for
seven years. He's held positions as regional
manager, national trainer, and now as customer
relations manager. He has an IT background for
15 years in various roles from customer help desk

J

through IT management.

Finally, Mitch Kedrell, his title is system support specialist and he has vast experience since 2003 and he is a resident of Gwinnett County, Georgia.

I introduce to you Dominion Voting Systems.

DR. COOPER: Thanks, Matt.

And it's so great to see in the room the commission and the members of the public, our fellow vendors. I know it's been a long day, so let's get on with it.

As Matt said, I'm Eric Cooper, I'm the director of product strategy for Dominion Voting Systems. And what we have back here is every piece of equipment that's necessary to run an election. I would say it's an election in a box, but we have a couple of boxes.

Just to give you a brief overview, I'm going to run through our product offering, a little bit about the company, and then we'll get into the hands-on demonstration.

So about us, Dominion Voting was founded in 2003. We're an experienced, dedicated, team of professionals. We're more than just a vendor, we're an elections partner. We have six offices

throughout North America, including over 250 employees, 1,200-plus individual customers, and over a hundred thousand units in the field.

1.3

1.5

This is our US footprint. It changes pretty rapidly but I believe we're currently in about 35 different states. Statewide implementations in Louisiana, Nevada all but one county, New Mexico, Colorado all but four counties, and Alaska.

The key thing there is Louisiana. They have a very similar model to Georgia and whereby the state election authority actually programs all of the different parishes centrally, programs all of the tabulators and then delivers that election-day equipment after going through last-minute accuracy testing to the individual parishes. So it's a very similar model to what Georgia does.

My key role as director of product strategy,
I have an engineering background. I was
previously the vice president of engineering for
Squillion Systems. I've migrated into a role
that's more customer focused. So my job is to
meet with our customers, look at the market, look
at what's on the horizon as far as products and
services and then turn that back into actual

engineering requirements and at the end of the day, the equipment that you see out here on the table.

1.3

1.5

Democracy Suite: This is our core sweep of products. It drives the entire election process. Everything from building a ballot, voting and tabulating the ballots, reporting results, and auditing results. It's simple. It's simple, it's flexible, it's efficient. The same system that you see here, we feel those jurisdictions that have, you know, maybe one or two thousand voters over jurisdictions that have several million registered voters, same platform, same hardware, same software.

Core advantages: It is a single election database. If you're looking at statewide for multiple counties, we start with a single template database that has most of the jurisdictional information and then we can spawn individual projects for each individual county, but all of that data resides in a single database, all right? It's a powerful, flexible ballot, laid out design engine. It can handle a variety of ballot types and slate types, referenda, various styling elements for both

paper and our touchscreen interfaces. And it's an easy tabulating program. So we can define multiple tabulators. Those for early voting have all of the precincts available, all of the ballot styles. We can also filter those down into individual precincts with just those ballot styles or a combination thereof if you have polling locations that have multiple precincts as well.

1.3

1.5

So in person, this is the core of our in-person voting solution. It includes the ImageCast X, which is the touchscreen interface. We call it the ImageCast X because the X is configurable. On either end of the table, this is the ImageCast X in a ballot-marking device configuration. And on the other end is the ImageCast X in a DRE with a voter-verified paper audit trail configuration.

But again, it's the same voter interface, same programming, it's just whether you're getting the ballot that needs to be scanned in our ImageCast precinct scanner or if the results are being stored and verified on a paper audit trail by the voter.

Next. We also have our central count

offering and that's this Canon G1130. Again we started to consolidate our focus on commercially off-the-shelf available components. We do have two proprietary scanning devices, but the rest of the equipment is off-the-shelf, including the tablets, including the VVPAT, voter verified paper audit trail printer, and the BMD printer is an HP as well.

1.3

1.5

And then finally we do have a digital education system as well, and this a way of adjudicating not just voter intent issues for vote-by-mail ballots or absentee ballots but also write-ins and any cast in precincts or any combination thereof.

Finally, we do have a remote accessible vote-by-mail product also used for UOCAVA voters, and this is an online presentation that's secure, has full accessibility features, and prints at home a ballot that can be mailed, faxed, or e-mailed back into the central jurisdiction and scanned on our equipment as well.

And we do have a very robust results tallying reporting module. This is for all of your election night reports but also your statement of casts reported for campusing as well

as any extracts that may be used for a web-based recording, whether it's at the county or state level as well.

1.3

1.5

And then our final module is we do offer a ballot augmenting solution for printing ballots at your precinct or in a central office. And like most of our equipment, it's very scalable. So if you have a small jurisdiction that's not printing any of their own ballots, we have a printer that's around \$300 all the way to a very large, robust, high-volume printer that's a little more expensive.

Some of our core technologies -- so all of our scanning solutions implement what's called a dual threshold. So when you are actually marking a hand-marked ballot, here (indicating), voters may not have, especially absentee, used the right kind of pen or filled the ovals in completely and legacy systems, there was a well-identified issue where it was a single level, anything below that was not a vote, anything above that was a vote, and the problem was is that when you would write on that margin, multiple scans of the same ballot could actually lead to different results.

By implementing the dual threshold, we have

a lower ballot, anything below that lower ballot is not a vote. We have an upper ballot, anything above that is a vote. In between is what we call an ambiguous mark. So we're saying that we're not going to determine outright whether that's a vote or not. In the precinct if you have a hand-marked ballot, the voter is presented an opportunity to clarify the voter intent, and for an absentee voter, that kind of vote will go through our adjudication system for voter intent.

1.3

1.5

And then finally we have our AuditMark. So, again, whether it's the VVPAT, whether it's our in-precinct scanner that's scanning a ballot-marking device ballot or a hand-marked ballot, we're taking a digital image of the front and back of the ballot, but at the end of the image, we're appending a text record of how the scanner interpreted that ballot when it was scanned. So it's a fully traceable and auditable record of how that ballot was handled at scan time. And you'll see that a little bit later when we actually get into the adjudication process.

And then finally we do have a ballot audit-and-review module, and this is, again, sort

of outside of our system. It allows members of the public, election officials to actually filter and view subsets or entire elections where the ballot image is and compare those against the past voter records and also the AuditMark.

1.3

1.5

This system was used in the only statewide risk-limiting audit that's been conducted. That was in Colorado. The first one was done in 2016 and they just did a second statewide in the most recent election.

Security: So we take basically a holistic approach to security. It's multiple levels.

It's both software- and hardware-based and also policies and procedures and best practices. And we put that throughout our entire product suite.

Things like voter access, poll-worker access, we use two-factor authentication for all of that kind of access. We have robust signed blogs for all of the activity that happens on the machines. And, again, at the end of the day, we have the AuditMark for how that ballot was cast and interpreted and scan done.

We do industry best practices for secure protocol, including code obfuscation, penetration testing, and we are up to the latest 1.1 VVSG

security guidelines.

1.3

1.5

Cyber security, again, we look at the entire system, and we have developed our security approach looking at all of the threat factors that are out there.

Next.

So we have an ongoing focus. Obviously we have a chief security officer who's overseeing all of this activity. We have an ongoing focus both for our products and also for our company. Security is not just our equipment, it's also the people that work for our company. We're constantly reviewing and enhancing those security models and we are continuing to partner on not just with election administrators but also government DHS, FBI as threats become identified in the election system.

Final aside here, it's kind of a company motto, it's tower of partnership. We're not just a vendor that's going to sell you something and walk away at the end of the day. All of this equipment that you see up here was actually developed in conjunction with our customers.

We have the first iteration of the ImageCast that was done in partnership with Denver County

in Colorado. We then took the base system to Michigan and we worked with the customers there and made customizations, modifications based on the needs. We did the same thing the following year in Nevada for a full implementation. We are currently doing that with Louisiana as well. So it really is a partnership, we're not just a yendor.

That's the end of the fun stuff, so the actual voting experience. The first is we will start with the ImageCast ballot-marking device. So I'm a poll worker, I've turned on the machine and before I can do anything with the machine, I have to provide a poll worker access card and a secure pin.

(Technical difficulties)

1.3

1.5

DR. COOPER: I think I had two different cards with two different versions here. While I get the right card, we'll move on here briefly.

So if we were using hand-marked ballots here, the hybrid solution where you have both a ballot-marking device and hand-marked ballots in the precinct, you have two different precinct scanning options.

The first is the ImageCast Precinct. So for

a hand-marked ballot, the voter fills in bubbles. Simply goes up to the device, inserts it. If there are any additions, if it's an overvote, if it's a blank ballot, the voter will be alerted. The computer is saying that this is a blank ballot and at that point I can return the ballot and make a modification or if I'm happy and I want to maybe cast a protest ballot, I simply hit "cast," and it drops into the box. This device can also be configured for a full ADA review, so it gives an audio review of the ballots inserted for those voters with disabilities.

1.3

1.5

We have another precinct-based offering over here. It's the ImageCast Evolution. It's very similar to the ImageCast Precinct, but this is an all-in-one accessible device as well. So if I put a blank ballot in this device as an accessible voter, I can then use an audio-tactile interface or a touchscreen to actually make my selections. There's an integrated printer that will actually mark the ballot, rescan it, provide a review to the voter and then cast the ballot.

Waiting on the poll worker card.

Oh, found the right poll worker. Two-factor authentication is something you have, the card,

something you know which is the pin, so I enter that. It's not the right one.

(Technical difficulties)

1.3

1.5

DR. COOPER: All right, so we're going to have to move on.

Let's talk about the voting process. I'm a voter that comes into the precinct. We do not have our own e-poll book but we do directly interface with several third-party poll books, including Tenex, Votec, and Know.ink. So they can directly program our voter access cards through their e-poll book.

So as a voter, I would come in, I would go up to the check-in station. They would look my name up in the e-poll book, program the card, and then the voter is sent to the device. Once they put in their card, they're displayed the ballot that they're eligible to vote on. And again, the interface is the same between VVPAT and the BMD version of the ICX.

There are several disability-related items, including if you have multiple languages, the voter can choose their language at will and toggle back and forth. I can choose text size for low visual acuity, and I can also change the

contrast level. So again, this is all voter controlled. If I'm a fully disabled voter, we also do have a handset that's configured over here, and this allows you to interact with the device and get audio feedback and use various keys to progress through the ballot. We also support sip-and-puff and two paddle -- two switch paddles as well for navigating the ballot.

1.3

1.5

So it's a pretty standard touchscreen interface that we're all sort of familiar with. Couple key things: Obviously, this is my hardware. So things like screen calibration are things of the past. It's much like your phone. You never have to calibrate the screen on your phone. You don't have to calibrate these tablets either. It's high-resolution and, again, I can change the size of the font at any time.

To make a selection, I simply choose anywhere within the candidate area. The nice thing about touchscreen interface is it prevents overvoting. If I want to modify my selection, I simply deselect and modify. And I can move throughout the ballot making my selections, including brightness, and then I can go to my ballot review, and, again, it shows each

selection that I've made. If I skip the contest, there's clear indication to the voter that no selection has been made. If I want to go back to that, I can simply choose that contest. It'll take me back to that and I can make my selection, back to review, and the final step is to cast my ballot and it will print the record of my vote in clear text on the voter-verified paper audit trail.

1.3

1.5

The voter has the opportunity to verify those results and to modify them at this point if they want to. If they're happy with that, they simply print the next page. And, again, I'm in the larger font here so the font size on the voter-verified paper audit trail is also larger. And if I'm happy with all of the selections, I simply hit "accept," and now that vote has been cast.

Again, this is a direct-report electronic device with a paper audit trail so the results are stored on secured media behind locked and sealed doors. At the end of the day, you would take those USB sticks out, bring them down to the central office for tallying and tabulation.

When I close the polls on this device, a

results report is automatically printed on the same paper audit trail record. So all of those results are included with the individual records as well.

1.3

1.5

So we're having a little trouble with our security. That's the problem with -- when you have too much security then you can get in a bad spot.

Through our system, we have the ability to have individual keys for each device. We can have consolidated keys at a given precinct location, or we can have a unified key. So you can have access to all of the devices with a single poll worker card.

Again, the interface -- I'm going to move on just for time. The interface is exactly identical to the one I just displayed but instead of printing the record on a voter-verified paper audit trail, it prints each ballot on a standard eight-and-a-half-by-eleven sheet of paper. This comes out, again, off the off-the-shelf HP printer. The voter can then verify their results here before inputting it into our ImageCast precinct scanner.

And, again, whether it's hand-marked or a

ballot-marking device, both can be scanned and tabulated in our ICP.

 $\begin{tabular}{lll} \textbf{REPRESENTATIVE FLEMING:} & \begin{tabular}{lll} \textbf{So let me go ahead} \\ \end{tabular}$ and start asking a question --

DR. COOPER: Sure.

REPRESENTATIVE FLEMING: -- if I may.

DR. COOPER: Yeah.

REPRESENTATIVE FLEMING: Something that I think you pointed out. So the printer and the tablets, these are -- I think the word you used, "off the shelf?"

DR. COOPER: Yes, sir.

REPRESENTATIVE FLEMING: Explain that. So you can just buy printers from different locations and ...

DR. COOPER: Well, for some of the devices you can. So this is a standard HP printer. So you can buy it at OfficeMax. If your printers go down at the end of the day and for some reason you don't have a spare, you literally can go to Office Depot and buy it off the shelf.

The tablet's -- it is commercially available. It's with a company called Avalue. We do not manufacture the devices, they do. They have large experience with medical device

tablets. So tablets that are on the crash carts, so high-impact environments. We have partnered with them to provide these devices for us. They guarantee a minimum of 10-year life delivery of the units themselves and then 20 years for parts and any other issues with the tablets themselves.

1.3

1.5

REPRESENTATIVE FLEMING: So what would be the range for the state of Georgia to implement such a system and one of these versions of the system in all hundred and fifty-nine counties?

DR. COOPER: I'll be able to give a very similar answer that all of the other vendors have given. I mean, it really depends on the implementation obviously. So to put some bounds on that, if we look at the RFI that we responded to and we stuck with all 27,000 units, you're looking somewhere north of a hundred million dollars.

Based on our experience in other states and similar implementations, I don't think that you would need all 27,000 units. If you did a hybrid approach, obviously the number of units would be less, so you're looking at a number around somewhere between 40 and 50 million.

REPRESENTATIVE FLEMING: All right. Let's

1 go around the table. At this point, I'll start 2 over here. 3 DR. COOPER: And as you are asking 4 questions, I'm going to just --REPRESENTATIVE FLEMING: Please. 5 DR. COOPER: -- bring up one more thing. 6 REPRESENTATIVE FLEMING: Absolutely, as we 7 move our way into our questions. 8 Dr. Lee? 9 10 DR. LEE: Yes. REPRESENTATIVE FLEMING: Turn your 11 12 microphone on. 13 DR. LEE: To clarify, when you show voting 14 on this machine and you showed us a paper trail, 15 but you only show the image. So the voter will 16 not be able to verify again his actual physical 17 paper trail. DR. COOPER: Yeah, they can't put their 18 19 hands on it, but they can verify it through the 20 window and look at the text that's on there, and 21 if they're an accessible voter, the scan of the 22 text is actually what generates the audio for 23 review.

DR. LEE: Okay. So how readable is that

24

25

paper trail?

1	DR. COOPER: How do you?
2	DR. LEE: How readable is that paper?
3	DR. COOPER: It conforms to the latest VVSG
4	guidelines for as far as minimum and maximum
5	print size.
6	REPRESENTATIVE FLEMING: And as we come on
7	around the table, yes, Cynthia?
8	MS. WELCH: So on the unit here, has the
9	voter cast their ballot?
10	DR. COOPER: Yes. Once they hit that final
11	"accept," the vote is actually cast.
12	MS. WELCH: So what's the purpose of
13	verifying if they can't take it back at that
14	point?
15	DR. COOPER: Because it is still a
16	paper-based system. The official record is
17	what's printed on the VVPAT vote and that's what
18	the voter is verifying.
19	MS. WELCH: Okay, thank you.
20	REPRESENTATIVE FLEMING: All right. Going
21	around. Nancy?
22	MS. BOREN: So what can happen on elections
23	will happen on elections, right?
24	DR. COOPER: Absolutely.
25	MS. BOREN: So obviously on that first

the voter even before they start to cast that so that either they can change the paper roll, or what we've seen in our implementation in Nevada is that they actually keep a couple of extra complete VVPATs that are, you know, with fresh tapes in them that are locked and sealed so that then they can just basically hot-swap those.

MS. BOREN: Thank you.

REPRESENTATIVE FLEMING: Going around. Okay, Lynn?

MS. BAILEY: I have one.

REPRESENTATIVE FLEMING: Thank you.

MS. BAILEY: Can you tell me the data that's contained in your QR code?

DR. COOPER: Yes, I can. So there's a variety of data. So there is a digital representation of the voter selections. There is election-related information, precinct, ballot style, election date, and then there's also some security elements, some keys and signing values for the actual printed record so you can verify them if it's been altered after it's been cast.

REPRESENTATIVE FLEMING: Going around. All right. We certainly do appreciate your presentation today. Thank you very much.

DR. COOPER: Thank you.

1.3

REPRESENTATIVE FLEMING: All right.

(Applause)

REPRESENTATIVE FLEMING: We are now going to move directly to the public comment portion of our meeting. I do have a couple of dozen folks that have signed up.

So I think the way we're going to do this is -- right here at the podium? Yeah. Right here at this podium. What I'm going to do is I will call your name and ask you to come up. What I'll do is I'll probably tell you who's on deck. So the person who's going to be next can go ahead and come up and either sit here or be ready to go.

You will have two minutes. We would ask you to come and state your name and tell us where you're from, whether it be city or county or in Georgia or where else. And I will thank you for coming and then we'll let you start talking.

So we're going to begin with Debbie

Anderson, chief registrar of Wilkes County.

Debbie? Can you reach that? Okay.

And after Debbie, I'm going call on Jean Ann? Jean Anne? Jeanine? Dufort maybe? No?

Okay. If I mess up your name, I sincerely apologize. If you will set me straight.

1.3

1.5

Debbie, tell us where you're from.

MS. ANDERSON: My name is Debbie Anderson.

I'm the chief registar at Wilkes County. I have been working in elections for about 20 years, six years last year as the chief registrar. So I was there from all paper to the DRE and whatever is going forward from there.

It's real important that, you know, we get everything right while we've got the time, even as short as it is.

One of the questions I was going to ask, am concerned about was, one, funding and the number of units that would be provided by the state or whatever to the counties because we all -- we've got to come up with funding if we're going to need more than whatever is provided.

What I'm looking at here though is I have about 6,600 voters, seven precincts, probably one set-up in each one would probably be adequate for us. This is really important to know so we can start looking if we need to do some kind of a special-option tax or what we need to do to start being ready so that next year we don't all of a

sudden find out we got -- you need to get this
stuff in there now.

1.3

1.5

So if y'all could, vendors, please give them some ballpark figures, even if it's, you know, just what one set-up would be for what the normal unit might be. It's nice to look at what the state would do. We don't need, what was it, 200-and-something or a thousand units. We just need a -- we might need one or two.

But it is important if we can get that information. And thank y'all for letting us know about this. I'm really glad we have it. I'm glad to see we've all got a chance to have input and to gather and share our time together and ideas and try to work together.

It's really important we get all this done. And I took some videos of the presentations. Going back to show my commissioners, my board members, and others as far as what we could be looking at because we've got to start preparing them. And, of course, there's a lot of variations on what we saw today. Nothing was totally cut and dry.

REPRESENTATIVE FLEMING: Okay.

MS. ANDERSON: But it kind of gives us an

1	idea of where to go.
2	REPRESENTATIVE FLEMING: Thank you.
3	MS. ANDERSON: Thank y'all again.
4	REPRESENTATIVE FLEMING: Appreciate it.
5	Jeanie (pronouncing) Dufort. Jeanie, tell
6	me how you pronounce your name.
7	MS. DUFORT: Jeanne.
8	REPRESENTATIVE FLEMING: Jeanne.
9	MS. DUFORT: Dufort.
10	REPRESENTATIVE FLEMING: There we go.
11	Exactly what I said, right?
12	MS. DUFORT: Exactly what you said. That's
13	right.
14	REPRESENTATIVE FLEMING: Four times.
15	MS. DUFORT: I'm one of five girls and my
16	mom's rule was you can call me anything but don't
17	call me late for dinner, so
18	REPRESENTATIVE FLEMING: Jeanne, tell us
19	where you're from
20	MS. DUFORT: I'm from Madison, Georgia.
21	REPRESENTATIVE FLEMING: Okay.
22	MS. DUFORT: And I'm not an election
23	official. I'm not an elected official. I'm a
24	concerned citizen and don't we in Morgan
25	County are very aware of the wrestling with the

problems, the security problems our votes currently have. And I will admit I came here today predisposed towards hand-marked paper ballots because it's the easiest way to have a meaningful voter-verified thing.

1.3

1.5

We've seen some re-creations of paper ballots today, re-creations that are slips that, you know, are about like looking at a grocery store slip. I think some people register what they've written much easier than looking at a little printout thing.

And there is some tests. I know the good doctor over here asked a few people have you done research, and I'm aware of some research that's happening, about whether that's a meaningful look if you're going to have a digitally-printed slip.

And they should be talking about optical scanners from what a computer's (indiscernible) well may count. They're really, really good at counting, so let's count them with optical scanners and let's use risk-limited audits.

But an audit isn't meaningful if it's not done with original material. You know, there's a reason why if you get audited by the IRS, they ask to look at your actual receipts and your

actual checks you wrote, not the digital re-creation of that.

1.3

1.5

The cyber-security experts we heard today do seem aligned behind those choices as the best way to minimize risk and that's what we're all about and the best way to discover problems quickly when they occur, and to have the ability to do a meaningful recount if you really have to.

And all you election officials, you can groan with me right now because recounts really suck, right? We don't want to have to do that, but you ought to be able to do it well, with confidence, if you have to go there.

And we know that three out of four American voters right now have the ability, are actually voting with paper ballots. So we're lagging here in Georgia and I love it. We just did state of in Morgan County last week, and everything out of Bert Jones' mouth, everybody: We're number one in this, we're the top five in this. Well, when it comes to voting, we're in the bottom five and we need to fix that. I think that's why you've spent your time with us today.

But here's the thing that was news to me -
REPRESENTATIVE FLEMING: Jeanne, we'll give

1 you --2 MS. DUFORT: Okay, I'll --3 REPRESENTATIVE FLEMING: -- you time to wrap 4 up. 5 MS. DUFORT: -- wrap it up. I wasn't paying as much attention to some of you. Thirty-million 6 dollars, a hundred-and-thirty-million dollars, I 7 didn't hear one thing today that showed me why 8 you would look the voters in the eye, look the 9 10 taxpayers in the eye and say: We just spent an 11 extra hundred-million dollars for this really 12 cool thing. 1.3 If there's a \$30-million solution that is 14 sound and solid, that's what y'all need to do. REPRESENTATIVE FLEMING: Thank you. We 1.5 16 appreciate you coming today. MS. DUFORT: Thank you. 17 18 REPRESENTATIVE FLEMING: Next up will be 19 Phillip Williams, and after Phillip will be Mac 20 Beeson. 21 So, Phillip, come on up if you are still 22 here. 23 Is Phillip here? Going once, going 24 twice ...

Mac Beeson? Is Mac here?

25

1 MR. BEESON: (inaudible) 2 REPRESENTATIVE FLEMING: Okay. All right. 3 Okay. 4 Jeb Cameron? Jeb Cameron? MR. CAMERON: (inaudible) 5 REPRESENTATIVE FLEMING: Also? Okay. 6 7 That's all right. Kathy Rogers? Might've been a 8 9 misunderstanding there. How about Denice Traina? 10 Denice? Is Denice here? 11 (Audience member speaking off mic) 12 REPRESENTATIVE FLEMING: Okay, who is your 1.3 son? Joseph? Joseph, come on up. Say your name and tell 14 15 us where you're from. 16 MR. TRAINA: Sure. Thank you. I'm Joe 17 Traina. I'm a voter in Richmond County, a former county party secretary, and I participated in the 18 19 Burke County recount, so I've been following the 20 work here. I appreciate the work that Lynn 21 does -- she works every day -- and the work that 22 she's done here today. 23 As a local voter and a founding member of 24 Progressives for Democratic Reform, we welcome

the commission members to preserve our most

25

precious right, the right of Americans to select representation who govern on our behalf. PDR believes that it's a precious right must be protected and not be put at risk which is why we understand this is a not a partisan issue and even stands to hold our own accountable when exclusionary practices jeopardize our inalienable rights as citizens.

1.3

1.5

Three quick points I want to leave you guys with and just to be on the record for: Number one, the most important is the right to vote must not be infringed by any feature of access, technical skill, economy, or partisan limitation. This means ability, income, transportation, physical address. Partisan identity must not be functional deterrents to determining our representation.

So we encourage the commission to lobby leadership for automatic registration, allowing some voters to cast ballots for, quote, none of the above, end quote, or at the very least, same-day election-day registration -- to include election-day registration.

Number two, as taxpayers understand elections and the ever-expanding campaign season

are incredibly expensive, we therefore ask the commission to consider proposing instant run-off voting, also known as ranked choice voting, which are proving to be great reductions of costs in recent elections where they've been held.

1.3

1.5

And finally, number three, when we vote, it is vital in order to trust in the process that verifiable results are secure, with a paper trail and digital corroboration, which means is -- or what we're asking then for the commission to consider is the following proposal. Make no changes to the current system, simply add physical receipts and a digital verification component.

Nominal investment in printing receipts would mean the same process folks are used to is leveraged by a time-stamped copy of a voter's ballot with barcodes or unique ID that voters can use to verify or report problems themselves within real-time databases. This way votes and receipts are physical but audit processes remain largely unchanged beyond the inclusion of digital backups verified by the voters themselves in partnership with boards of election.

Thank you for your time.

REPRESENTATIVE FLEMING: Thank you, Joe.

Appreciate you being here today.

1.3

1.5

Next I have on my list is Terry Reeves and after Terry will be John Fortuin.

Terry Reeves? Terry, welcome. Tell us -- go ahead and say your name again for us and tell us where you're from.

MS. REEVES: Yes. Thank you very much. I'm
Terry Reeves. I live in Rutledge, Georgia in
Morgan County.

REPRESENTATIVE FLEMING: Good to have you.

MS. REEVES: Thank you very much and thank you all for having this commission. I am a concerned citizen. I'm not with any one particular group. I called the secretary of state after we attended our local board of elections meeting out of concern for the security of voting and the need for paper ballots because we knew that Kennesaw State hacked into our system and our voter information was out there for more than six months and nothing was done about it.

I'm concerned that every vote is cast and counted accurately and securely. So I urge you that whatever system you go with -- I haven't

heard the entire day here, but whatever system you vote in, I, too, urge that you have a paper trail, receipt trail, so that there can be no error. That is our one wonderful beautiful right and that is to choose our elected officials and to vote.

And I ask you to please protect that right and do everything in your power to make sure that we do have a trail and that it is done accurate.

And I appreciate your time. Thank you all very much for this commission.

 $\label{eq:representative fleming:} \textbf{Thank you very}$ much.

All right, John? John Fortuin? Is John here?

Okay. John, welcome, please pronounce your last name correctly because I'm sure I did not and tell us where you're from.

MR. FORTUIN: Hi. My name is John Fortuin,
and I'm from Athens-Clarke County.

REPRESENTATIVE FLEMING: Thank you, John.

MR. FORTUIN: I'm actually a candidate for Senate District 46. I'm in the Green party, but I come here today as a concerned citizen who's been working on this issue actually since 2004.

There's been concern about this voting system from even before it was implemented. And people have said: No, it's just old, we need to replace it because it's old.

1.3

1.5

It needed to be replaced before it was deployed. And we need to make certain we don't make the kind of mistakes that we did back then. I've heard some well-meaning citizens today talk about the need for a paper trail. We folks who have been working on this for years, including the Verified Voting Foundation -- which I'm not officially affiliated with, but I did give you that handout.

We're asking for paper ballots in general because a paper trail is not defined in the law. There's plenty of state law about how paper ballots are being handled. In order save money for the state, we need to use ballot scanners in each polling place.

If we wanted to incinerate George's tax dollars, we could go with ballot-marking devices for perfectly able people, but they amount to very expensive pens and pencils, and we don't need to spend thousands on a device that substitutes for a pen or pencil.

REPRESENTATIVE FLEMING: John, I'm going to 1 2 let you wrap-up. 3 MR. FORTUIN: All right. And once again --4 and we were subjected to the misinformation since 5 the initial deployment of this original system. 6 We need complete transparency on every aspect of 7 the bidding. We need the bidding process to be open. We need actually to make certain that the 8 9 lobbyists are not raking the citizens over the 10 coals. We need to know how much they're getting 11 paid, what their contracts are as well. 12 REPRESENTATIVE FLEMING: John, thank you. 1.3 Appreciate you coming today. MR. FORTUIN: Thank you. 14 15 REPRESENTATIVE FLEMING: Next is Susan 16 McWethy and after Susan, Dave Barbee. So is 17 Susan here? 18 Susan, please come on up. Do you want us to 19 pass those around for you? Okay. Susan, 20 welcome. Tell me how I mispronounced your last 21 name and where you're from. 22 MS. MCWETHY: McWethy. 23 **REPRESENTATIVE FLEMING:** I did okay? 24 MS. MCWETHY: Yes. Susan McWethy from -- I

25

live in Decatur.

MS. MCWETHY: Thank you. Well, I feel that voting should not be an active of faith, and I really want to believe elections officials when they give us assurances that everything is great with our system, and I just can't. And there's been so much that's come out over the years of the vulnerabilities with our current system. I could name a bunch of places: Homeland Security, Princeton University did a study, Johns Hopkins University, Brennan Center for Justice, Election Assistance Commission, on and on, Government Accountability Office, Defcon. I could go on and on.

I never read that our system is great, and I want to have confidence in it. And now it looks like we're going to have to trust barcodes to represent our votes, and they're every bit as obscure as hitting "cast ballot" on a DRE machine. I can't read barcodes, you know? I voted for who? And also, we've learned today that these QR codes are a part of the different -- with the other vendors' products.

So I just think simplicity is better, and I

1 would -- I can reiterate what John Fortuin just 2 said about paper. It's simpler. It allows for a 3 voter chain of custody. It makes sense, and I 4 think scanning is good too, but we also must have 5 an audit, a proper audit, proper risk-limiting audit. 6 7 So, again, transparency, simplicity, then I will have confidence. 8 9 Thank you. 10 REPRESENTATIVE FLEMING: Thank you, Susan. 11 We appreciate you coming today. 12 Dave Barbee and after Dave will be Liz 1.3 Throop. I think I pronounced that right. We'll 14 see. 1.5 Dave --MR. BARBEE: Okay. 16 17 REPRESENTATIVE FLEMING: -- tell us your 18 name and where you're from. 19 MR. BARBEE: My name's Dave Barbee. 20 from Richmond County. REPRESENTATIVE FLEMING: Thank you, Dave. 21 22 Good to have you. 23 MR. BARBEE: Thank you. 24 Two reasons we're here: Number one, 25 Diebold's out of business, machines are old and

we've got to replace them.

1.3

1.5

Number two, everybody's afraid that somebody's going to change the vote.

Now, folks, that Diebold machine has been voting in Richmond County for 16 years in this thing. And the only way that that thing's hooked up to the wall is through electricity. I don't care who you are, you can't change my vote.

Lynn's been great. She's had over 500 machines that we have for Richmond County, a lot of money to be replaced. And I've trusted every vote that I've cast and I know it's been counted. Now, this thing about paper trails I think is just metal hats.

Lynn and I have even had a discussion about the "I voted" peach sticker. That's legal tender on election day. You can take that, go to a certain areas or a certain whatever and get paid for turning in that sticker.

And I certainly don't want to do anything with the systems that we have now that would change our system to where my vote is not private. That's my vote. I don't want any -- you know, any record. I know how I voted and that's all that matters. It's none of your

2 If you want to talk about paper trail and 3 paper ballots, I'm the oldest guy in here. I 4 remember when we had paper ballots this long and 5 you marked the top of it with an "x" and you put it in the box. Guess what? After all the votes 6 7 were counted, somebody always found another box. They had ballots that wasn't counted. 8 I'm not 9 going to -- it happens, okay? So --10 REPRESENTATIVE FLEMING: Need to wrap-up, 11 Dave. 12 MR. BARBEE: -- be careful what you do. I'm 1.3 just asking you to make sure we have the same 14 safe system, the safe system we have now. 1.5 Thank you. REPRESENTATIVE FLEMING: Thank you, Dave. 16 17 We appreciate you coming today. 18 Liz? Is Liz here? Liz? Tell me how to 19 pronounce your last name and tell us where you're 20 from. 21 MS. THROOP: Hi, I'm Liz Throop. 22 REPRESENTATIVE FLEMING: Say it again. 23 MS. THROOP: From Atlanta. 24 REPRESENTATIVE FLEMING: All right.

MS. THROOP: Again, I'm so impressed with

business, except mine and the Almighty.

1

25

all of you and your really sweating all these details and there's so many: Things like accessibility, overcounting, undercounting, the cost of equipment, how quickly machines tabulate, and I appreciate that, but if votes are miscounted, that really dwarfs -- it invalidates all of these other problems.

And I'm concerned because I see a strong and growing perception that Georgia's elections don't or might not reflect voter intent. I can't think of a bigger reason for business and for the business class to actually leave Georgia than for the perception of corrupt government.

And I'm stressing that, you know, perception is reality when you're talking about getting people out to the polls and to making decisions about where they live. Only counted verifiable votes directly tabulated without encoding and barcodes will restore trust in the voting system.

Again, thank you.

1.3

1.5

REPRESENTATIVE FLEMING: Thank you, Liz. We appreciate you being here today.

Next I'm going to ask Dave Titus to come up and then after that Jackson Faw.

Dave? David Titus? Is David still here?

Okay, after -- then we'll move on to Jackson Faw.

Jackson, did I pronounce that last name right?

MR. FAW: (inaudible)

1.3

REPRESENTATIVE FLEMING: Okay. Jackson, good to have you. Tells us where you're from. Happy to hear from you.

MR. FAW: Likewise. Thank you very much. Jackson Faw from Atlanta, Georgia. I'm just a concerned voter.

Last year in Atlanta, y'all might remember we had -- I-85 caught on fire. Six lanes both ways went down. It affected 250-million cars a day, and everybody said: Well, that's going to take six months. I know it takes a certain amount of time for concrete to cure. But guess what? Georgia resolved it. Georgia funding got that bridge fixed in 44 days.

Right now, the eyes of the nation are on Georgia in this coming election as we're preparing to possibly elect the first black female governor, first black female to be running on a major party ticket.

Yesterday, Judge Totenberg threw out our

secretary of state motion to dismiss a case, and she's going to make a judgment or they're going to make a judgment in about -- in another couple of weeks. And today we heard the secretary of state, controller of elections who's also running for governor, say that well, she might not make us do that. That -- folks, that can't be our solution. We can't say that maybe it won't happen because there's a lot of scrutiny right now.

1.3

There's a lot of people saying why do we have the person in charge of elections is in charge of his own election. Last week -Mr. Harvey, I know you know about this -- we had ten black counties in Georgia targeted for poll closures. Were it not for media attention from across the country, Randolph County would've closed seven out of its nine polling locations in a community that's \$35,000-a-year (indiscernible).

So my point is, folks, we can get this done. We heard the vendors say they can get it done. We had two vendors say today they could get it done in eight weeks, whatever they're going to bring, donkeys and elephants, to get it fixed.

REPRESENTATIVE FLEMING: Jackson, I'll allow you wrap it up.

MR. FAW: Yes, sir, I'll wrap it up.

REPRESENTATIVE FLEMING: Okay.

MR. FAW: Each of you are that are making this decision, history's going to be looking at you, and whichever way this election goes, we're going to be looking back and y'all's names are going to be on this. As a Georgian, I want to be proud to say this election was fair and accountable.

Thank you.

REPRESENTATIVE FLEMING: Thank you, Jackson.

Next we have Priscilla Smith, and after Priscilla, I'm going to ask Smythe DuVal to come up.

Priscilla, welcome. Tell us where you're from.

MS. SMITH: Thank you very much. I'm

Priscilla Smith. I voted in DeKalb County. I

lived in the city of Atlanta.

REPRESENTATIVE FLEMING: Welcome.

MS. SMITH: Thank you. Thank you very much for your service to the commission. We really appreciate it.

There are many people who are, like, amazed that I, an ordinary citizen, am here for this.

Does the citizenry really care, do people really care about this? Well, of course they care.

I've been doing a lot of work in rural counties, trying to get voters out. And also looking at what happened in Richmond (sic) County last week, I went and helped collect signatures to make sure that people understood about what was going on with their polling places possibly being closed and doing what we could to stop that from happening.

1.3

1.5

The only reason that happened was -- and I realize that I'm probably speaking outside of what is your purview. I understand that SAFE is not about this year's election, but what is about this year's election? It's been demonstrated that the current voting system, in spite of what was said earlier, is not SAFE. The reason why we knew that those places, those polling places were going to be shut down was because there was a tiny legal published in a weekly in Richmond County -- in Randolph County, and one person found it and started circulating the information to the press and so forth and so on.

1.5

I don't know who's protecting us. The secretary of state is running for governor himself. He doesn't have a vested interest in undermining what's going wrong with the current voting system. I don't know who's going to represent us if you don't.

I'm begging you to recognize that something has to be done between now and October 15th when early voting begins. There are people here who said they can handle the situation. We can do something. Stacey Abrams is calling for absentee ballots. No one wants to do that in the massive amounts that's going to be required. But I don't know how we're supposed to trust our vote.

And the disaffected voters that I've run into across rural Georgia don't trust anything. And nothing I've seen today makes me know that this next election is going to encourage people to be the citizens that they have to be in order to make democracy work.

So I beg you with what power you have as this commission to do something to increase the voter security for the next election.

Thank you very much.

REPRESENTATIVE FLEMING: Thank you,

Priscilla. We appreciate you coming today.

 $\label{eq:mr.smythe} \mbox{ Mr. Smythe? Pronounce your last name for } \\ \mbox{me.}$

MR. DUVAL: DuVal. Smythe DuVal.

REPRESENTATIVE FLEMING: DuVal. Tell us where you're from.

MR. DUVAL: I am from Marietta, Georgia.

MR. DUVAL: You're welcome. Thank you for hosting us. I am a Kennesaw graduate student in IT. I have experience in IT. And I'm also a Libertarian candidate for the Georgia secretary of state and a concerned citizen.

So I'd like to thank you again for hosting the meeting. Let's see. I want to do three things. First, for a candidate, two minutes is always really, really hard.

But hand-marked paper ballots, along with post-election audits, that is the gold standard. I think there's a lot to it to talk about that. But for everybody on the panel, I would definitely encourage you to look at the presentations you had today and see which of these options were the one in your RFI. We

really want the gold standard of verifiable ballots in this state.

1.3

The second thing I wanted to talk about is this coming-up election. I was in the camp that we don't really need to change anything until the news came out our foreign adversaries were actually looking at our sites. At that point, the risk profile has gone up for me personally. I certainly don't know what the professionals are finding out, but I was very glad Mr. Mike Garcia spoke this morning. He was talking about risk, risk assessment, and how to actually prioritize risk.

That is my specialty in IT and I would like to point out that it's something we do need to take extraordinarily seriously, especially when we're talking about the potential adversaries are state-sponsored types of adversaries, people who have gone under so many other types of organizations that have way more resources than we do.

This is going to get decided by the judge on the 18th. With that in mind, I was, again, shocked to hear that a lot of places in Georgia are not planning on any kind of interruption or

any kind of plan B, even though they know that there's a possibility that these machines are going to get decertified, or there's a possibility -
REPRESENTATIVE FLEMING: I'll give you a chance to wrap it up.

1.3

1.5

MR. DUVAL: Sure. Thank you.

-- a possibility that, you know, more
information could come out.

And lastly, I just wanted to thank the panel again, but also I'm concerned that the panel is not transparent enough. I'm hearing from panel members that there's really not a whole lot going on in the panel besides these meetings. There's no study groups, no requirements definition, no meetings. It sounds like the work of this going on is in the secretary of state's office and not the panel.

I'd like to hear more about it. I would love for you guys to get a Twitter handle or a Facebook page or something so we can start communicating with you directly.

Next will be Dana Bowers and after Dana will

1 be Rick Barron. 2 Dana? Is Dana here? 3 (inaudible) 4 REPRESENTATIVE FLEMING: She's coming? 5 Where is she coming from? (inaudible) 6 7 REPRESENTATIVE FLEMING: Oh, okay. you are, Dana. Good to have you today. 8 MS. BOWERS: Thank you. 9 10 REPRESENTATIVE FLEMING: Say your name again 11 for us and tell us where you're from and we'd 12 love to hear from you. 1.3 MS. BOWERS: Hi. My name is Dana Bowers. 14 am from Gwinnett County. I am a native Georgian 1.5 as well. REPRESENTATIVE FLEMING: Thank you, Dana. 16 17 MS. BOWERS: I just would like to thank the 18 commission for taking public commentary and 19 questions into consideration. I attended the 20 first state commission meeting and I presented a 21 proposal for the easy and inexpensive 22 implementation of paper ballots for the November 23 general election using the current equipment the 24 state already has on hand.

As an election integrity activist and

25

everyday Georgia citizen, I am extremely concerned about the lack of verifiable facts being used by our top election officials almost as much as the lack of verifiable votes we pass every time we go to the polls. The secretary of state's office has taken a personal interest in unverifying our organization as well as misquoting and misinterpreting the law.

1.3

1.5

So basically what I'm trying to say is they're actually using their power to come back on the counties that actually have their own power.

So in a formal letter to all Georgia county boards of elections and boards of county commissioners, the secretary of state's office appears to have threatened counties with some form of punishment if they abide by the law that allows them to independently implement paper ballots. No such punishment is defined in any election law in the state of Georgia. This has the feeling of voter intimidation because after all, these commissioners and board members are voters just like me. And from one voter to another to another, I would like to urge the state commission to please consider expert

1	testimony from those that do not represent a				
2	corporation and the voice of the voters.				
3	Our organization filed a motion for a				
4	preliminary injunction for emergency statewide				
5	implementation of paper ballots in federal court.				
6	As of yesterday, Judge Totenberg dismissed				
7	Secretary Kemp's motion to dismiss our case				
8	REPRESENTATIVE FLEMING: Dana, I				
9	(indiscernible)				
10	MS. BOWERS: and recorded that hearing				
11	REPRESENTATIVE FLEMING: Ma'am?				
12	MS. BOWERS: where we will				
13	REPRESENTATIVE FLEMING: Ma'am?				
14	MS. BOWERS: be able to prevent more				
15	REPRESENTATIVE FLEMING: I want to give you				
16	a chance				
17	MS. BOWERS: information				
18	REPRESENTATIVE FLEMING: to wrap up.				
19	MS. BOWERS: and reiterate the				
20	feasibility of our paper-ballots plan.				
21	Thank you very much.				
22	REPRESENTATIVE FLEMING: Thank you, Dana.				
23	Appreciate you coming here today.				
24	Rick Barron? Is Rick here?				
25	Rick, come on up. Good to have you. Please				

state your name again for us. Tell us where you're from. We'll be happy to hear from you.

1.3

MR. BARRON: I'm Richard Barron. I'm the director of registration and elections for Fulton County, Georgia.

And, well, I'm here today to encourage the commission to -- whatever system you end up deciding upon, please be sure that it accommodates early voting. We've -- in Fulton County, we've tried to make sure that everyone is enfranchised. During the presidential election, we had up to 27 locations per day going. We plan on doing up to 22 in the gubernatorial election.

So what we've done is tried to take a lot of pressure off on election day. It is very difficult with paper ballots or a pure paper system to administer early voting. Early voting is on the book in Georgia. We've got 19 days of it. We have to have every ballot style in every early voting precinct.

If we come up with a system that is based mostly on paper, we're going to have a very difficult time administering early voting. At that point, we're going to need to increase the number of election-day sites that we already

have. I think you're all familiar with the problems Fulton County had from 2012 and before.

1.3

1.5

So I think over the last five years, my staff and I've worked very hard to make sure that Fulton County runs its elections well. And I think we've achieved that. A lot of it is because of early voting.

And there's -- three minutes or two minutes isn't enough to go into all of the other things, but I have had eight years of experience in conducting early voting with -- or -- and voting with paper ballots in Texas in addition to my time here in Georgia.

So the biggest complaint with paper ballots are in early voting when voters received the wrong ballot. And that was basically a pure paper system. If we go to ballot-on-demand printers --

REPRESENTATIVE FLEMING: You want to wrap it up.

MR. BARRON: Yeah. If we go to ballot-on-demand printers, we already have multiple printers in each early-voting site because Georgia has an onerous requirement of printing out every absentee-ballot application.

1 On-demand printers is going to add more printers. 2 We would have more backups if that happens, so 3 we're going to need to have some sort of 4 ballot-marking device with paper printout or a 5 DRE with VVPAT for early voting. Thank you. 6 REPRESENTATIVE FLEMING: Appreciate you 7 8 coming in today. Next will be Joe Traina. Joe? Is Joe here? 9 10 (inaudible) REPRESENTATIVE FLEMING: Oh, okay, maybe it 11 12 was on the list twice. Okay. 1.3 Next, Gerald Favato (pronouncing)? Gerald? 14 Favorito, okay. 1.5 MR. FAVORITO: I'm Garland. Garland 16 Favorito. **REPRESENTATIVE FLEMING:** Garland? 17 18 Garland. Garland, you write as well as I do. 19 Thank you. Welcome. Good to have you today. 20 We'd love to hear from you. Tell us where you're 21 from. MR. FAVORITO: I'm from Roswell, Georgia. 22 23 And I have a handout there. I'm -- there's two 24 sides, front and back. I'm the cofounder of

VoterGA. We've led the election-integrity

25

movement in Georgia for 13 years.

1.3

1.5

All but two of the speakers who spoke at the June 13th meeting were our members. I've got 30 years of IT experience. In 2002, I warned Kennesaw State University and the secretary of state's office not to purchase the current voting machines because they can't produce a verifiable product or handle recountable results.

Last year, 20 computer scientists wrote a letter to the secretary of state's office urging him to decommission these machines for the same reasons I gave them 16 years ago.

So at the June meeting I requested to make a presentation to you at a future meeting. The agenda -- I have since fleshed out the agenda. It's on the back of your handout. I requested a vote at that time and I'm requesting a vote again today if you think that this information that I printed out for you is worthwhile.

In looking at today's presentations, I need to let you know that at least half or more of the presentations you saw today were for unverifiable voting systems just like we've been fighting for 16 years. So imagine how that makes me feel to see that we're not really making any progress in

the 16 years and we're still looking at unverifiable voting equipment again.

Now, I know that you would not really understand that because you haven't seen my presentation. You haven't identified in the current the proven opportunities, you haven't defined the requirements you have, and you haven't evaluated one of the most critical things which is centralized versus decentralized election --

REPRESENTATIVE FLEMING: Garland, I want to give you a chance to wrap it up.

MR. FAVORITO: Okay, give me about 10 seconds.

The security flaws that are in that election preparation, that's centralized, and that's what we need to discuss now, and I'll go into more detail in my presentation.

So again I would ask for a vote on that today, please.

REPRESENTATIVE FLEMING: Garland, thank you for coming today.

That concludes the public input for people that signed up.

Committee members, you've been here a long

time today. I want to appreciate y'all, the members of the commission, for coming today and we thank you for your time.

Thanks again to Columbia County for all of their kind assistance in setting up the venue for us. We will stand adjourned. Thank you.

(Concluded at 6:00 p.m.)

1 CERTIFICATE 2 STATE OF GEORGIA 3 COUNTY OF DEKALB 4 I hereby certify that the foregoing meeting 5 was taken down and was reduced to typewriting under my 6 direction; that the foregoing transcript is a true and 7 correct record given to the best of my ability. 8 The above certification is expressly 9 withdrawn upon the disassembly or photocopying of the 10 foregoing transcript. 11 I further certify that I am not a relative, 12 employee, attorney, or counsel of any of the parties; 13 nor am I financially interested in the action. 14 15 This, the 25st day of September, 2018. 16 17 **Mary K McMahan** 18 Mary K. McMahan Certified Court Reporter Certificate Number 2757 19 20 21 22 23 24 25

AUDIENCE: [1] 7/6 DR. COOPER: [23] 296/6 305/16 307/3 311/4 311/6 311/11 311/15 312/10 313/2 313/5 313/17 313/25 314/2 314/9 314/14 314/23 315/3 315/9 315/12 315/16 315/22 316/14 316/25 DR. GARCIA: [2] 49/18 80/20 **DR. LEE: [38]** 47/25 57/9 64/11 65/19 67/10 71/9 73/25 78/17 84/13 138/5 141/9 200/12 200/20 201/3 201/9 201/13 201/17 201/25 227/14 227/23 228/5 249/20 249/23 250/4 250/24 251/7 251/18 251/21 252/11 287/16 288/9 288/15 288/23 289/10 313/9 313/12 313/23 314/1 DR. LINDEMAN: [1] 75/1 JUDGE MCCOY: [11] 110/11 111/13 166/17 171/21 171/23 197/16 254/15 255/12 293/10 293/13 293/24 MR. BARBEE: [4] 332/15 332/18 332/22 334/11 MR. BARRON: [2] 347/2 348/20 MR. BEESON: [12] 235/10 247/7 248/18 248/25 249/5 249/8 249/14 249/16 250/13 251/2 262/15 323/25 MR. BROXTON: [29] 264/6 281/4 281/6 281/18 281/20 282/1 282/8 283/8 284/17 284/19 284/22 285/23 287/3 287/20 288/13 288/17 289/4 289/17 290/23 291/2 291/20 292/2 292/8 292/11 292/13 292/18 293/16 294/3 294/12 MR. CAMERON: [19] 234/3 234/5 234/7 240/15 250/3 251/8 252/20 254/5 254/9 254/21 255/14 256/3 256/5 257/5 257/23 260/7 260/22 261/16

324/4 MR. CARTER: [3] 180/22 185/11 189/22 MR. DUVAL: [4] 341/3 341/6 341/9 343/6 MR. EDWARDS: [8] 120/24 127/8 129/15 133/2 134/3 134/7 136/8 138/3 MR. FAVORITO: [3] 349/14 349/21 351/12 MR. FAW: [4] 336/4 336/8 338/2 338/4 MR. FORTUIN: [4] 328/18 328/21 330/2 330/13 MR. HORACE: [1] 294/25 MR. LINDEMAN: [1] 57/15 MR. LONG: [15] 215/12 223/25 224/4 226/18 228/1 228/7 228/17 229/7 229/14 230/6 230/17 230/21 230/25 232/2 232/21 MR. MCDONALD: [10] 40/2 40/6 113/6 113/25 114/22 140/15 140/17 160/1 160/5 161/2 MR. MONDS: [9] 170/7 170/10 170/21 170/24 204/23 205/4 260/9 261/11 286/16 MR. MURPHY: [33] 145/2 145/5 147/3 149/7 157/21 157/23 158/4 158/9 159/5 159/10 160/19 161/4 161/10 161/12 161/22 162/8 162/21 163/4 163/7 163/10 163/21 164/21 166/22 167/18 169/6 170/5 170/14 170/19 170/22 171/3 171/19 172/3 172/25 MR. SHELLY: [13] 205/24 207/19 208/6 208/8 208/11 208/18 226/19 227/1 227/19 229/12 229/15 229/25 230/4 MR. SMITH: [1] 208/21 MR. TRAINA: [1] 324/15 MR. VANDERBURG: **[2]** 191/18 204/18 MR. WAGNER: [44] 173/11 173/14 176/23 177/1 177/4 177/7 180/23 181/18 185/12 187/15 189/23 191/19 193/21 194/13 194/17 194/25 195/5 195/9 195/14 195/23 196/4 196/17 197/5 197/22 199/11 199/20 199/23 200/1 200/18 201/2 201/4 201/12 201/16 201/23 202/1 202/20 202/23 203/1 203/5 203/15 203/18 204/9 204/11 205/8 MR. WALKER: [3] 64/22 79/3 82/2 MR. WELLS: [4] 118/18 123/14 125/17 139/23 **MR. WES:** [1] 199/1 MR. YOUNG: [10] 12/23 31/6 31/10 32/21 33/2 36/5 36/19 36/23 37/13 41/2 MS. ANDERSON: [3] 318/3 319/24 320/2 MS. BAILEY: [9] 74/6 137/16 164/16 230/15 252/15 254/4 289/14 316/10 316/12 **MS. BLAKE:** [9] 90/5 94/7 98/19 99/23 102/22 104/5 107/13 109/21 112/2 MS. BOREN: [38] 111/15 116/10 119/11 120/20 122/13 123/10 125/15 126/8 127/3 128/11 129/11 130/11 130/20 136/19 138/16 139/10 140/16 143/21 163/12 163/14 199/15 199/18 199/22 199/25 284/16 284/18 284/20 285/18 286/19 286/22 287/13 314/21 314/24 315/5 315/10 315/14 315/20 316/7 MS. BOWERS: [8] 344/8 344/12 344/16 346/9 346/11 346/13 346/16 346/18 MS. DUFORT: [9] 320/6 320/8 320/11 320/14 320/19 320/21 323/1 323/4 323/16 **MS. GAY:** [5] 122/17 128/19 132/4 134/6 135/22 MS. GHAZAL: [2] 196/13 197/3

MS. HELTON: [4]

119/18 126/21 130/10 130/12 MS. HOLDEN: [7] 167/10 167/19 255/22 256/4 256/20 257/22 260/6 MS. HOWELL: [31] 84/19 88/2 90/4 91/22 92/21 93/25 94/23 95/23 98/10 99/17 100/1 101/17 102/20 103/23 104/25 106/6 107/8 108/16 109/15 109/20 110/9 111/12 111/14 113/5 115/23 161/18 162/7 204/14 231/22 232/19 233/10 **MS. JONES: [7]** 88/1 88/14 96/1 97/15 101/21 106/10 109/16 MS. KUHNS: [10] 92/3 93/5 95/2 96/25 100/11 102/12 105/5 108/21 113/23 115/8 **MS. LEWIS:** [9] 22/6 22/9 22/14 28/1 28/9 33/16 39/1 44/8 45/7 MS. MCNAMARA: [4] 17/20 29/16 37/15 43/3 MS. MCWETHY: [3] 330/21 330/23 331/2 MS. REEVES: [2] 327/7 327/11 MS. ROGERS: [3] 249/15 251/25 263/1 MS. ROSS: [11] 162/17 163/2 163/5 163/8 228/13 229/5 229/23 230/2 230/12 262/10 262/24 MS. SMITH: [2] 338/18 338/22 MS. THROOP: [3] 334/20 334/22 334/24 MS. WELCH: [17] 141/22 203/8 203/16 204/5 204/10 290/18 290/24 291/17 291/21 292/5 292/9 292/12 292/17 293/9 314/7 314/11 314/18 **REPRESENTATIVE FLEMING: [219]** 7/5 7/7 16/17 21/3 22/7 22/10 27/9 28/2 29/11 30/21 31/7 32/17 32/22 33/3 35/16 36/16 36/20 37/6 37/14 38/19 39/23 40/5 40/20 43/1 44/6 45/6 46/8 47/20 114/2 116/2 130/18 130/21 139/9 141/10 142/15

144/13 145/4 157/19 157/22 157/24 158/6 159/2 159/7 159/22 160/3 161/7 161/11 161/14 162/12 163/11 163/13 164/14 166/15 170/3 170/8 170/15 171/17 171/20 171/22 172/23 173/2 173/7 173/12 176/21 176/24 177/2 177/5 193/19 194/8 194/15 194/18 195/4 195/8 195/13 195/18 196/1 196/7 197/14 198/17 199/13 199/16 200/11 202/17 202/22 202/24 203/4 203/6 204/3 204/13 204/19 204/25 205/11 205/19 208/4 208/7 208/9 223/24 224/1 226/15 226/25 227/9 228/11 229/3 230/13 230/18 230/24 231/20 233/11 233/24 234/4 234/6 248/15 248/23 249/2 249/6 249/12 249/18 249/21 251/19 252/12 254/6 254/11 255/20 260/8 262/8 263/19 264/1 281/2 281/5 281/15 281/19 281/25 282/4 282/25 284/12 286/13 286/17 286/20 287/14 289/11 290/15 293/12 294/9 294/13 294/18 311/2 311/5 311/7 311/12 312/6 312/24 313/4 313/6 313/10 314/5 314/19 316/8 316/11 316/22 317/1 317/3 319/23 320/1 320/3 320/7 320/9 320/13 320/17 320/20 322/24 323/2 323/14 323/17 324/1 324/5 324/11 326/25 327/10 328/11 328/20 329/25 330/11 330/14 330/22 330/25 332/9 332/16 332/20 334/9 334/15 334/21 334/23 335/20 336/5 337/25 338/3 338/12 338/21 340/24 341/4 341/7 343/4 343/22 344/3 344/6 344/9 344/15 346/7 346/10 346/12 346/14 346/17 346/21 348/18 349/6 349/10 349/16 351/10 351/20

3 17 [1] 2/23	13th [2] 68/17 350/3 14-inch [1] 177/12 15 [4] 174/21 187/24 271/9 295/25 15 percent [2] 45/19 247/24 15,000 [5] 168/6 168/7 168/8 169/21 169/22 15-year [1] 207/8 159 [1] 143/7 15th [1] 340/8 16 [5] 101/4 333/5 350/12 350/24 351/1 16 years [1] 19/16 17 [1] 269/8 17,000 [1] 148/19 17-inch [1] 177/12 18 [1] 122/23 1800 [1] 210/1 18th [1] 342/23 19 [1] 347/18 19-inch [1] 177/12 1912 [1] 264/25 1920 [1] 18/3 1948 [1] 69/9 1983 [1] 16/23 1990's [1] 18/21 1996 [3] 118/6 118/10 136/22 1:00 [1] 144/10 2 2,000 [2] 123/7 129/21 2,314 [1] 73/12 2,500 [2] 48/25 158/23 2.1 [1] 112/14 2.3 [1] 266/22 20 [6] 23/3 135/11 248/21 312/5 318/6 350/9 20-somethings [1] 96/14 200 [3] 154/3 229/13 240/9 200-and-something [1] 319/8 2000 [5] 13/24 98/22 123/1 137/1 265/7 2001 [2] 48/24 126/12 201 [2] 48/24 126/12 202 [14] 18/18 18/24 25/23 123/2 129/2 131/3 131/19 132/11 137/21 141/15 211/23 211/24 265/8 350/4 2003 [2] 296/4 296/23 2004 [2] 17/15 328/25 2005 [5] 86/12 212/1 212/1 212/6 249/11 2006 [1] 249/11 2009 [2] 146/2 159/6	260/2 350/3 30 million [1] 226/23 30-somethings [1] 96/15	44 percent [1] 120/8 45 [1] 169/4 450 [1] 235/20 46 [1] 328/23 4th [1] 123/19 5 5 percent [1] 41/6 5,000 [4] 54/1 120/7 209/10 213/8 5.5 million [1] 207/5 50 [3] 101/11 132/12 312/24 50 percent [1] 191/5 500 [2] 132/9 333/9 500,000 [1] 120/4 538 [1] 120/1 55 million [1] 208/15 55,000 [1] 208/15 6 6 inches [1] 269/9 6 million [1] 139/16 6,600 [1] 318/20 6.4 [1] 270/1 6.4 million [1] 270/5 62,000 [2] 206/22 208/15 6:00 [1] 352/7 6th [1] 51/2 7 7,000 [1] 208/1 70 [1] 120/6 75 years [1] 176/8 8 80-year-old [1] 96/17 800 [3] 68/19 209/2 265/22 800,000 [1] 261/2 83 [1] 156/1 84 [1] 156/1 85 [1] 336/13 86 [1] 153/21 87 [1] 69/14 88 [1] 52/18 9 92 [1] 269/25 92,000 [1] 210/1 94,000 [1] 132/6 95 percent [1] 267/11 9:11 [1] 1/9 A a vote [1] 136/14 A-4 [1] 209/9 A.D [1] 68/14 a.m [1] 1/9 A a vote [1] 136/14 A-4 [1] 209/9 A.D [1] 68/14 a.m [1] 1/9 A a vote [1] 136/14	abandon [1] 62/14 abide [1] 345/17 abilities [1] 67/20 ability [20] 4/11 14/24 30/10 43/8 64/2 94/3 95/15 117/8 155/7 158/22 164/20 187/7 193/7 275/23 277/12 310/9 322/7 322/15 325/14 353/7 able [77] 13/7 34/24 40/18 45/25 59/9 61/23 62/10 63/25 64/5 66/3 67/6 68/19 78/3 78/5 83/17 83/19 83/20 89/15 89/23 90/9 91/18 97/14 98/16 105/7 106/22 107/2 107/7 110/2 110/3 111/5 112/21 123/20 124/10 126/4 126/22 126/23 130/5 133/15 137/21 138/22 140/14 146/22 148/23 165/22 166/12 166/15 172/2 178/4 182/4 220/8 253/3 253/8 266/14 270/4 271/12 272/2 272/11 273/14 273/20 274/21 274/24 276/14 277/23 277/24 285/15 289/21 290/3 290/8 292/17 292/21 312/11 313/16 315/8 315/24 322/12 329/22 346/14 about [268] 3/2 4/23 6/15 12/23 13/2 13/20 20/6 20/9 22/21 22/25 23/1 23/2 23/2 23/3 23/17 23/18 23/24 24/5 24/17 24/19 25/15 26/16 27/12 27/14 28/4 28/24 28/24 29/1 29/23 30/1 30/7 31/9 31/17 33/4 33/9 33/16 34/8 35/24 35/25 37/22 38/23 39/3 42/16 43/6 43/8 43/11 44/3 44/11 44/18 45/18 46/22 48/24 28/14 29/1 29/23 30/1 30/7 31/9 31/17 33/4 33/9 33/16 34/8 35/24 35/25 37/22 38/23 39/3 42/16 43/6 43/8 43/11 44/3 44/11 44/18 45/18 46/22 48/24 28/14 29/1 29/23 30/1 30/7 31/9 31/17 33/4 33/9 33/16 34/8 35/24 35/25 37/22 38/23 39/3 42/16 43/6 43/8 43/11 44/3 44/11 44/18 45/18 46/22 48/24 73/9 74/9 75/24 58/5 60/19 61/4 61/17 62/15 63/6 63/23 64/20 65/23 67/20 67/23 68/10 68/17 68/19 68/24 73/9 74/9 76/22 79/2 81/13 81/19 83/11 89/19 90/7 91/25 92/4 92/22 92/24 93/3 97/17 98/21 99/19 100/3
13 years [1] 350/1	2 009 [2] 146/2 159/6	44 336/19		98/21 99/19 100/3
				ATIVE SETTI ED: shout

Α about... [169] 100/6 100/7 100/12 101/9 101/17 102/5 105/7 106/4 110/17 114/4 115/3 116/8 116/15 116/23 117/5 121/24 124/8 126/2 127/4 127/10 127/12 130/13 130/17 131/17 131/18 132/2 132/3 135/1 135/11 135/14 136/1 136/8 136/15 137/15 139/1 140/20 142/3 142/6 142/6 142/10 142/11 142/12 142/18 144/18 144/18 145/23 146/15 147/1 147/8 148/6 148/19 150/1 151/5 153/6 155/10 155/16 162/13 163/8 164/24 165/5 165/23 166/7 166/18 168/13 171/25 172/6 174/22 175/1 180/11 186/24 192/4 192/5 192/8 192/8 192/13 192/14 196/12 197/25 203/11 206/7 209/21 211/16 215/17 216/23 219/4 221/18 227/12 228/6 235/5 235/16 236/6 236/13 237/6 237/12 238/2 240/14 240/20 241/6 241/11 242/9 247/22 249/12 252/25 257/11 257/16 260/4 260/10 261/5 264/14 264/16 264/17 265/11 266/3 266/15 267/8 267/21 267/23 267/24 268/13 268/24 269/9 272/18 273/2 273/23 273/25 276/16 278/11 282/23 283/4 283/7 284/11 288/6 296/20 296/22 297/5 307/6 308/20 318/6 318/14 318/20 319/12 321/8 321/15 321/17 322/5 324/9 327/22 329/1 329/9 329/16 332/2 333/13 333/15 334/2 335/15 335/17 337/3 337/14 339/4 339/9 339/16 339/16 341/21 342/3 342/11 342/17 343/19 345/2 351/13 above [6] 1/6 129/23 301/21 302/3 325/21 353/8

above-entitled [1] 1/6 **Abraham [1]** 193/15 **Abrams [1]** 340/11 absentee [26] 25/16 33/13 33/15 34/9 35/2 35/21 91/15 91/15 101/15 176/21 177/9 180/4 196/3 196/6 196/15 197/8 202/4 252/17 253/14 254/1 290/8 300/12 301/17 302/9 340/11 348/25 absentee-ballot [2] 91/15 348/25 absentees [1] 256/2 absolutely [15] 29/17 30/15 33/3 53/12 55/4 63/7 75/7 177/24 194/18 256/6 282/9 282/23 289/18 313/7 314/24 academia [1] 48/13 accept [7] 79/12 179/17 192/7 196/23 226/7 309/17 314/11 acceptance [1] 128/6 accepted [4] 115/8 219/2 225/12 280/2 accepts [2] 214/23 225/11 access [61] 15/10 16/4 20/4 20/8 20/24 40/18 84/22 85/2 85/7 85/9 85/17 88/13 88/17 88/19 89/17 90/8 91/25 92/12 98/15 98/17 99/22 102/4 106/10 107/8 107/13 108/11 108/11 112/8 112/19 161/20 232/1 232/21 243/11 243/12 243/13 243/22 274/6 277/6 277/10 277/22 279/16 279/16 279/21 279/22 285/9 285/10 285/12 285/13 291/12 291/13 291/19 292/7 293/21 293/24 303/16 303/16 303/18 305/14 307/11 310/13 325/12 accessed [1] 277/13 accessibilities [1] 70/10 accessibility [35] 5/19 6/9 20/1 43/25 62/4 69/24 84/18 85/20 89/2 89/20 93/2 95/2 97/1 101/13 104/5 108/25 112/13 112/16 142/3 147/9 149/10 209/16 212/11 215/19 215/24

216/17 221/3 221/23

221/25 223/7 224/11 228/5 271/23 300/18 335/3 accessible [36] 1/1 3/10 18/14 19/18 20/14 86/20 86/25 89/8 90/18 activate [4] 209/4 91/16 93/6 93/11 96/24 98/24 108/10 108/24 109/19 112/10 112/11 147/22 149/19 149/22 150/22 158/23 162/3 162/11 171/9 225/9 232/18 233/3 241/13 269/7 300/15 306/16 306/18 313/21 **ACCG [1]** 121/13 accidentally [1] 183/10 accommodate [2] 16/3 177/11 accommodates [1] 347/9 accommodation [1] 102/19 accomplish [3] 37/20 116/18 145/25 account [4] 33/14 35/18 43/21 234/22 accountability [2] 76/5 331/14 accountable [3] 80/17 325/6 338/11 accounting [3] 32/10 32/12 194/5 accounts [1] 203/3 accuracy [4] 20/24 60/19 256/24 297/15 accurate [9] 19/18 20/8 20/13 60/10 70/4 92/10 157/10 195/3 328/9 accurately [5] 191/25 194/1 198/14 201/6 327/24 achieve [1] 78/6 achieved [1] 348/6 **ACLU [6]** 12/3 12/4 12/10 13/1 13/10 16/9 acquired [1] 49/10 **acquisition [1]** 295/12 acronyming [1] 50/23 across [22] 53/23 54/1 76/25 79/7 92/5 124/6 127/19 129/17 214/6 214/15 216/12 223/3 240/19 241/5 260/23 263/4 263/18 282/7 283/11 284/6 337/17 340/16 act [17] 15/4 15/5 18/18 18/20 18/22 21/12 23/20 24/2 41/19 42/7 42/9 42/15 85/5 85/18 85/21 99/2

252/3 268/2 353/13 actions [2] 218/23 218/25 215/5 221/8 242/21 activates [1] 181/11 activation [1] 243/3 activator [2] 243/19 245/17 active [4] 106/12 132/7 262/13 331/4 actively [4] 12/4 18/10 18/19 19/9 activist [1] 344/25 activities [3] 49/5 85/7 295/19 activity [3] 206/23 303/19 304/9 actor [1] 80/6 actual [13] 60/2 96/3 104/16 132/17 147/16 148/3 152/16 297/25 305/10 313/16 316/21 321/25 322/1 actually [105] 15/3 25/12 32/9 37/9 41/16 43/24 60/13 71/17 75/20 83/2 89/11 92/21 97/2 100/24 102/8 104/23 114/6 114/19 116/17 123/15 123/23 126/22 140/21 141/2 142/7 154/6 156/17 166/19 198/24 200/17 200/22 201/2 201/15 202/15 208/3 225/7 225/22 229/20 233/5 237/7 238/2 251/16 251/23 251/24 262/25 263/12 265/10 266/14 267/5 271/14 271/24 272/12 273/14 273/20 274/13 274/20 275/2 276/6 276/9 276/10 276/14 276/19 276/19 276/25 277/23 278/20 279/15 280/14 280/14 280/17 286/2 287/25 289/21 290/13 291/3 291/5 291/10 292/23 293/1 293/4 293/6 293/18 293/19 293/24 297/11 301/15 301/24 302/22 303/2 304/22 306/19 306/21 313/22 314/11 315/25 316/4 322/15 328/22 328/25 330/8 335/12 342/7 342/12 345/10 345/11 acuity [1] 307/25

114/10

ad [3] 32/3 32/7 207/24 action [5] 118/2 251/23 ad-hoc [2] 32/3 32/7 **ADA [9]** 69/23 70/9 90/20 241/9 241/12 241/13 241/18 269/7 306/10 ADA-accessible [2] 241/13 269/7 adaptability [2] 270/6 270/8 adaptable [1] 59/24 add [13] 65/8 82/3 102/21 133/3 143/14 158/25 216/15 217/20 220/7 247/8 269/20 326/12 349/1 add-on [1] 216/15 added [4] 210/22 211/2 219/14 221/14 adding [2] 218/16 272/10 addition [10] 213/1 232/2 233/9 242/4 246/20 252/23 253/18 255/18 256/17 348/12 additional [16] 50/19 53/16 55/6 126/15 129/10 129/10 130/3 137/22 169/3 186/10 210/23 227/23 232/5 244/25 247/5 247/13 **additions** [1] 306/3 address [8] 26/21 64/4 120/20 181/24 186/16 223/4 289/15 325/15 **addresses** [1] 182/9 adequate [1] 318/21 adequately [1] 26/23 adjourned [1] 352/6 adjudicate [4] 177/16 193/13 289/17 290/14 adjudicated [4] 95/22 165/8 165/25 193/23 adjudicating [1] 300/11 adjudication [4] 155/7 290/11 302/10 302/22 adjudicator [1] 192/11 adjust [3] 15/17 222/8 280/11 Adjusting [1] 181/18 adjustments [1] 128/17 **Adkins [3]** 176/5 176/5 176/7 administer [1] 347/17 administering [2] 291/12 347/23 administrating [1] 160/16 administration [3] 107/25 124/19 124/19

administrator [1] 188/23 administrators [3] 19/6 275/3 304/15 admit [2] 101/25 321/2 admitting [1] 76/25 adopt [1] 35/18 adopted [1] 14/19 adult [2] 89/9 89/15 adults [5] 89/3 89/23 96/25 106/12 106/16 advance [3] 35/8 127/22 211/14 advantage [5] 52/25 61/22 62/19 111/11 212/7 advantages [5] 64/11 213/14 214/3 214/8 298/15 adversaries [5] 56/17 61/21 342/6 342/17 342/18 adversary [1] 52/24 advice [1] 79/2 advisor [1] 64/24 advocacy [3] 71/16 87/7 121/15 advocate [3] 87/9 133/6 158/21 advocates [2] 86/19 87/14 **afar [1]** 105/19 affect [1] 120/14 affected [1] 336/14 **affiliate [1]** 103/12 **affiliated [3]** 103/5 103/8 329/12 **affiliates [1]** 103/18 **affiliation [1]** 181/24 affirmative [1] 118/2 affluent [1] 130/1 **afford [4]** 46/5 46/8 130/10 270/15 **affordable [1]** 97/13 afraid [1] 333/2 after [39] 38/23 54/17 63/25 76/8 76/8 80/12 80/14 87/12 98/22 108/7 118/24 118/25 148/4 152/18 159/19 162/20 168/16 171/12 233/4 238/4 268/7 268/10 272/11 279/10 291/16 297/14 316/22 317/24 323/19 327/4 327/16 330/16 332/12 334/6 335/24 336/1 338/14 343/25 345/21 afternoon [5] 6/18 8/16 11/9 295/1 295/2

again [119] 4/6 4/10 5/24 7/4 36/9 37/6 38/2 39/9 43/4 45/11 60/5 68/4 70/21 76/16 78/8 95/19 104/13 105/12 105/21 108/14 115/22 118/4 125/8 126/4 127/24 128/9 135/18 136/21 139/12 139/14 139/22 139/24 142/13 142/14 142/17 150/15 173/25 175/16 184/14 195/2 197/22 200/2 201/21 208/14 208/23 213/7 215/3 215/13 217/18 218/1 222/10 224/20 225/7 235/12 237/13 239/7 241/16 243/8 246/23 247/17 251/21 262/1 264/22 266/21 268/19 270/2 271/2 272/9 272/24 276/11 276/12 277/16 278/6 278/9 278/11 278/12 278/17 278/19 278/24 280/10 283/10 285/16 286/9 286/13 288/7 293/18 299/19 300/1 302/12 302/25 303/20 304/2 307/18 308/1 308/16 308/25 309/13 309/19 310/15 310/21 310/25 313/16 315/17 320/3 327/6 330/3 332/7 334/22 334/25 335/20 341/15 342/23 343/11 344/10 347/1 350/17 351/2 351/19 352/4 against [5] 4/21 55/3 77/5 212/8 303/4 age [2] 30/6 57/23 agencies [10] 52/17 64/21 67/24 119/3 119/7 123/16 123/20 124/4 124/6 124/22 agency [5] 71/22 87/21 119/2 123/17 231/9 agenda [2] 350/15 350/15 aggregate [1] 152/21 aggregated [1] 147/25 aggregation [1] 210/21 agile [1] 83/7 aging [4] 94/4 95/25 101/21 106/8 ago [8] 17/25 19/16 23/3 101/5 194/8 215/15 283/15 350/12 agree [10] 27/8 34/5 45/3 62/19 80/21 80/22 95/16 95/18 127/15

139/10 **agreeable [1]** 73/25 agreed [1] 140/9 agrees [2] 27/9 42/20 agricultural [1] 237/21 **Ah [1]** 281/20 ahead [21] 27/11 38/21 40/1 41/1 83/16 86/2 151/11 160/1 161/18 177/4 180/7 196/13 200/6 205/21 220/13 279/22 280/3 286/22 311/3 317/13 327/6 aides [1] 213/18 air [1] 276/18 air-gapped [1] 276/18 airplane [1] 32/20 Alabama [3] 65/2 236/1 248/24 Alaska [1] 297/8 Albany [1] 49/22 **Albert [1]** 51/23 alert [2] 171/7 171/7 alerted [1] 306/4 alerts [1] 171/6 aligned [1] 322/4 aligns [1] 145/18 all [292] 3/7 3/15 3/23 3/25 4/6 4/7 4/10 4/14 5/3 5/25 6/16 6/24 7/4 7/17 7/21 7/25 10/1 10/15 18/23 19/24 23/6 23/11 23/19 29/4 29/18 30/19 32/5 35/1 38/9 41/15 42/17 42/18 43/12 43/20 44/1 46/12 47/17 50/14 51/6 51/12 53/2 54/18 55/13 57/8 58/13 59/17 60/25 63/4 67/23 68/23 72/5 72/9 72/22 74/9 74/19 75/24 78/15 80/18 82/13 82/25 84/9 84/15 87/15 92/5 93/6 95/10 98/25 103/10 103/18 107/5 108/22 109/9 109/19 109/19 110/9 110/17 112/14 113/25 115/24 116/9 116/11 117/4 119/4 121/3 121/5 121/25 127/18 129/2 130/3 130/6 132/4 133/8 134/15 135/5 138/8 141/16 141/19 143/7 143/22 144/3 145/6 145/23 149/19 154/22 158/3 165/8 165/11 165/16 165/17 166/7 167/22 167/24 168/5 168/8 168/18 169/9 173/4 173/8 173/15 174/8 174/13

176/6 177/16 179/25 180/20 180/25 182/1 182/17 184/5 184/21 185/2 185/20 188/4 188/5 188/25 189/8 190/10 190/11 190/16 191/3 192/21 194/24 195/6 202/10 202/21 205/3 205/9 205/10 205/20 206/20 206/23 207/23 210/9 212/25 214/5 214/6 214/11 214/16 216/6 216/9 216/15 216/21 217/8 217/17 218/3 218/5 218/23 219/2 220/20 221/3 221/23 223/22 231/18 233/19 234/5 235/11 236/17 238/7 238/7 239/14 239/17 240/7 240/13 240/24 241/1 241/5 241/9 241/14 245/6 246/1 246/24 247/10 247/25 248/2 249/11 251/6 253/7 254/15 254/17 256/7 256/19 262/4 262/9 262/9 262/21 263/4 264/2 265/6 265/15 268/25 268/25 269/10 269/22 271/20 272/14 272/18 273/4 273/20 274/6 275/2 276/17 280/10 282/7 283/11 284/10 286/13 286/16 287/23 287/24 290/3 290/8 294/7 294/14 294/19 294/21 295/7 297/7 297/8 297/11 297/12 298/21 298/22 299/4 299/4 300/23 301/10 301/13 303/17 303/19 304/4 304/9 304/21 306/16 307/4 308/1 308/10 309/16 310/2 310/13 312/10 312/12 312/16 312/21 312/25 314/20 316/23 317/2 318/8 318/16 318/25 319/13 319/16 322/5 322/9 324/2 324/7 327/13 328/10 328/14 330/3 333/25 334/6 334/24 335/1 335/1 335/7 345/13 345/22 348/1 348/9 350/2 352/4 all-in-one [1] 306/16 allegiance [1] 4/2 **Allen [1]** 7/15 allocation [1] 126/6 allow [34] 11/7 11/21

11/25 14/4 26/14 69/24 73/15 105/24 145/1 145/1 150/16 150/24 151/9 151/11 152/25 153/6 171/9 179/6 179/16 183/5 183/14 184/9 198/11 203/14 211/12 233/21 233/21 271/1 271/11 283/25 289/21 289/23 315/21 338/1 allowed [10] 8/14 27/20 66/24 95/3 95/8 95/9 124/4 200/3 237/23 251/4 allowing [2] 47/5 325/19 allows [20] 69/25 72/25 147/16 148/10 150/25 157/11 214/2 214/4 217/20 218/7 222/21 269/16 269/19 272/22 276/8 278/20 303/1 308/4 332/2 345/18 Almighty [1] 334/1 almost [5] 15/18 120/4 154/8 159/18 345/3 along [14] 26/15 38/9 47/17 53/6 55/6 74/9 141/11 171/6 196/10 210/15 211/24 271/23 286/4 341/19 already [23] 41/23 42/21 135/3 135/12 174/15 190/2 197/19 205/10 226/5 232/6 233/15 238/15 247/17 254/25 255/1 255/4 262/14 279/5 285/14 286/1 344/24 347/25 348/22 **also [140]** 4/14 7/13 7/20 8/18 9/24 10/24 11/7 11/25 12/13 15/25 18/19 20/20 26/25 30/10 30/24 40/24 41/15 41/17 43/16 47/4 48/21 49/7 49/14 51/3 51/22 59/12 60/22 62/16 63/20 64/15 64/19 67/18 67/22 69/7 69/25 70/3 70/11 73/1 80/22 85/15 85/16 85/19 86/22 87/18 88/5 92/1 93/21 93/24 97/20 98/10 103/17 105/3 105/20 106/20 106/23 109/14 110/23 111/2

120/15 125/20 127/19

134/10 139/3 139/4

145/11 150/7 150/9

Α also... [73] 150/24 151/3 159/13 160/10 168/3 168/23 169/18 175/9 183/16 195/21 196/15 201/14 209/3 210/25 211/24 213/15 213/17 214/3 218/18 224/12 225/10 238/8 238/9 239/21 241/13 242/4 246/21 251/11 252/24 253/19 253/23 256/18 264/15 264/18 265/24 266/17 269/10 271/24 272/16 273/9 274/3 274/14 274/16 276/24 277/13 284/7 287/19 291/6 291/12 299/5 299/25 300/12 300/16 300/24 303/5 303/13 304/10 304/11 304/15 306/10 307/25 308/3 308/6 309/15 316/19 324/6 326/3 331/22 332/4 337/5 339/6 341/12 343/11 alter [1] 155/8 altered [1] 316/22 **alternative [1]** 221/13 although [3] 66/18 72/14 141/18 always [26] 22/3 23/3 34/7 35/7 44/5 46/5 56/3 56/4 65/4 71/24 79/11 79/16 80/3 81/3 102/25 128/3 145/14 150/4 174/4 184/16 192/7 206/25 273/22 280/7 334/7 341/18 am [32] 33/18 49/20 53/10 75/18 90/6 119/20 122/19 132/23 149/25 155/21 168/12 173/23 174/6 176/14 181/3 201/3 203/19 234/24 242/16 242/18 289/7 289/10 318/13 327/13 339/2 341/7 341/11 344/14 344/14 345/1 353/11 353/13 amazed [1] 339/1 ambiguous [1] 302/4 amendment [4] 96/4 96/18 97/25 184/21 amendments [7] 19/1 110/18 110/20 111/2 113/10 179/3 263/6 America [2] 18/17 297/1 American [7] 17/7

57/23 58/1 59/7 97/5

145/12 322/14 **Americans [4]** 85/4 99/1 102/15 325/1 among [2] 16/16 122/11 amount [11] 62/23 83/16 124/3 124/5 124/9 215/21 221/20 228/10 268/13 329/22 336/17 **amounts [1]** 340/13 Amy [8] 6/6 47/11 47/17 84/20 114/3 161/18 204/14 231/22 analogy [3] 79/16 80/25 82/11 analysis [7] 50/11 50/13 50/21 52/4 58/2 59/16 119/6 analyst [2] 118/22 119/9 analyze [1] 56/19 ancillary [1] 158/16 and/or [1] 67/9 Anderson [2] 317/22 318/4 **Android [1]** 101/8 **Angeles [5]** 228/15 228/16 228/19 228/20 229/5 animal [1] 84/6 **Ann [4]** 86/10 90/5 109/21 317/25 Anne [15] 21/7 21/9 22/4 27/10 27/13 28/9 33/9 38/21 38/23 44/8 87/6 91/25 92/23 92/25 317/25 **Anne's [1]** 42/6 annotated [1] 154/6 announcement [1] 144/2 annually [1] 48/25 anonymity [1] 149/15 anonymous [1] 190/16 another [33] 4/12 9/14 11/24 29/2 29/3 38/6 60/22 91/14 97/1 105/20 108/7 108/9 127/12 145/13 159/1 191/18 191/18 197/21 232/9 232/25 239/10 250/22 263/8 284/2 285/17 285/22 292/24 294/2 306/13 334/7 337/3 345/24 345/24 answer [19] 33/18 33/20 40/24 41/19 64/16 71/11 158/1 160/21 162/7 169/6 195/1 254/4 285/18 287/4 287/8 287/10

287/13 293/9 312/12 answered [1] 202/16 **answering** [1] 289/8 answers [1] 101/9 anti [1] 78/12 anti-risk-limiting [1] 78/12 anticipate [2] 40/14 222/15 anticipated [2] 13/12 226/20 anticipating [1] 41/22 anticipation [1] 42/1 any [133] 5/1 8/8 10/25 13/12 14/20 14/21 14/25 15/22 16/10 17/23 24/7 25/20 26/7 26/23 28/18 29/12 29/13 35/10 38/8 39/16 44/12 60/18 77/22 79/2 81/1 84/13 84/14 85/9 86/5 99/16 99/21 100/16 100/23 107/9 107/10 110/10 115/11 119/6 121/12 125/12 129/24 131/25 132/22 132/25 134/2 137/23 140/22 141/25 143/12 143/24 145/22 147/18 149/20 150/6 151/9 153/22 154/11 155/15 156/12 156/21 156/24 157/16 158/2 164/9 172/12 174/5 174/6 175/13 177/19 182/16 185/3 185/3 185/4 185/7 185/9 185/13 185/14 186/8 188/2 191/22 194/25 200/15 203/5 210/8 214/13 214/14 218/18 219/25 221/7 223/19 225/16 226/17 228/5 228/8 237/10 244/9 244/22 247/1 247/5 247/7 251/13 255/3 255/16 255/17 255/21 256/22 260/17 263/16 274/2 275/24 276/20 280/8 281/15 282/8 284/15 286/4 286/11 300/13 300/13 301/1 301/9 306/3 308/17 312/6 325/12 327/14 333/23 333/24 342/25 343/1 345/19 350/25 353/12 anybody [4] 112/25 131/15 144/21 151/13 anybody's [1] 27/4 anyone [8] 15/6 53/12 66/8 98/16 106/22 143/23 185/14 265/1

79/1 128/24 129/5 138/15 153/25 154/1 166/5 166/14 171/24 225/17 239/25 243/15 244/23 247/16 254/13 276/10 301/20 301/21 302/1 302/2 305/13 320/16 333/20 340/16 342/5 anyway [2] 22/5 224/14 anywhere [8] 115/6 120/3 151/3 151/8 161/25 218/17 253/20 308/19 apologize [6] 74/6 263/17 273/2 274/10 287/10 318/2 apparently [1] 101/10 appealing [1] 62/8 Appeals [1] 12/11 appear [6] 29/6 29/7 31/15 197/12 245/22 280/14 appears [3] 243/24 255/19 345/16 appending [1] 302/17 **Applause [5]** 47/25 84/19 116/2 204/23 317/3 **Apple [1]** 101/8 application [5] 105/10 111/9 112/17 249/4 348/25 applications [1] 275/24 **applied [1]** 165/13 applies [1] 243/6 **Appling [1]** 253/7 **apply [2]** 61/1 61/2 applying [1] 41/5 appointments [1] 100/19 appreciate [37] 3/24 6/16 6/24 7/17 17/19 19/4 21/5 22/5 23/6 52/6 106/13 127/21 157/20 170/6 204/21 227/11 233/13 233/16 263/22 294/12 294/23 316/24 320/4 323/16 324/20 327/2 328/10 330/13 332/11 334/17 335/5 335/22 338/25 341/1 346/23 349/7 352/1 approach [13] 55/17 55/23 61/4 72/22 76/1 80/16 119/18 140/8 140/9 262/2 303/12

anything [30] 5/6 304/4 312/22 39/19 39/22 40/17 52/5 approaches [2] 54/14 81/24 appropriate [1] 193/11 appropriations [3] 125/19 125/24 139/6 approximately [4] 144/16 174/21 190/7 203/2 apt [1] 254/12 architecture [1] 147/4 archive [1] 159/20 are [382] area [13] 11/13 65/3 87/3 88/7 88/17 129/23 153/24 156/12 156/17 213/23 236/3 252/9 308/19 areas [4] 88/12 100/17 249/4 333/18 aren't [3] 80/15 83/15 109/1 arena [1] 23/11 Arizona [1] 202/24 **Arkansas [2]** 236/2 249/1 arm [2] 200/4 202/12 around [64] 5/5 8/21 12/5 19/6 22/22 28/5 46/15 46/18 48/4 61/12 66/8 84/22 85/2 91/24 92/2 92/2 96/9 96/9 98/14 98/16 99/22 103/25 125/2 125/21 129/21 129/23 131/1 146/11 159/4 159/23 161/16 161/17 162/15 164/15 168/14 215/15 228/12 231/21 235/19 236/1 245/24 248/25 249/10 249/11 249/20 252/13 258/7 265/3 268/6 272/13 274/3 278/23 282/10 282/13 284/14 287/15 301/10 312/23 313/1 314/7 314/21 316/9 316/23 330/19 **Arps [1]** 12/14 arrange [1] 232/16 arranged [1] 219/8 arrangements [1] 15/21 array [2] 69/2 73/2 arrive [1] 28/7 arrow [4] 94/14 94/14 94/15 94/15 arrows [3] 183/14

183/15 183/22

226/22

article [1] 193/5

articles [3] 12/18 86/23

Α artwork [1] 193/4 as [382] aside [3] 114/13 144/16 304/18 ask [44] 8/2 8/14 9/6 9/19 11/9 11/22 11/25 33/13 40/6 55/7 64/13 64/15 64/19 65/22 67/13 70/6 74/3 74/21 77/4 78/22 86/4 114/8 114/11 114/15 117/19 129/9 155/19 181/5 181/14 188/10 190/23 205/23 211/20 234/2 280/16 317/11 317/16 318/13 321/25 326/1 328/7 335/23 338/15 351/19 asked [14] 67/14 120/15 131/14 170/20 174/4 181/9 188/16 193/9 194/21 247/22 253/17 285/24 293/17 321/13 asking [16] 133/5 133/23 133/23 154/13 191/1 200/19 201/10 201/11 201/11 252/22 255/24 311/4 313/3 326/10 329/14 334/13 **ASL [3]** 97/7 97/10 97/13 aspect [4] 44/6 53/22 56/16 330/6 aspects [3] 55/24 56/5 118/7 assembly [8] 21/15 121/16 124/13 124/20 125/5 125/14 125/20 140/7 assess [3] 54/11 81/22 81/23 assessing [1] 54/15 assessment [1] 342/12 assessments [1] 79/7 asset [2] 82/25 140/3 **assigned [1]** 315/2 assist [3] 95/11 95/21 237/17 assistance [5] 19/4 65/15 86/15 331/13 352/5 assistant [1] 6/6 associate [1] 12/14 associated [2] 119/6

248/4

136/11

Association [8] 5/10

5/13 119/14 119/21

120/23 121/2 121/7

associations [2] 52/15 225/16 assume [1] 161/10 assuming [3] 125/21 274/24 315/7 assurances [1] 331/6 assure [1] 56/17 assures [1] 16/4 at [278] 1/9 3/10 4/25 8/18 10/3 10/8 10/17 15/15 16/24 17/17 18/12 20/3 20/9 22/17 22/22 22/24 23/7 25/17 26/9 27/19 30/21 33/7 34/24 36/5 36/6 37/25 38/17 40/16 44/15 46/18 48/17 48/21 48/24 49/5 50/2 51/8 51/9 51/12 51/12 53/1 57/3 57/11 57/18 60/7 60/7 60/11 61/25 63/14 69/20 71/15 71/17 71/18 72/15 74/1 74/17 76/14 77/20 82/21 83/4 88/18 89/8 89/16 89/19 92/16 92/17 95/5 95/6 95/10 95/20 96/21 97/3 98/6 98/7 98/23 99/6 100/8 104/9 106/15 106/17 107/5 107/6 108/7 108/7 109/13 113/11 115/14 122/7 123/8 124/11 124/12 130/9 132/25 134/10 134/25 135/8 136/22 137/1 140/15 142/14 144/9 144/10 145/13 152/9 153/4 153/15 155/1 155/11 156/13 158/8 159/10 159/12 163/15 163/18 163/19 164/1 165/4 165/5 165/11 165/14 165/14 165/20 165/21 165/23 165/24 166/1 166/2 166/7 168/19 168/24 175/19 175/21 175/24 176/1 178/19 178/20 179/8 181/24 183/13 183/15 184/13 184/15 184/24 185/1 185/3 186/2 186/20 187/8 191/2 191/3 191/3 191/8 191/15 191/21 193/1 193/2 194/16 195/25 196/19 196/20 196/24 198/2 198/13 198/24 199/4 199/7 200/10 200/11 201/8 203/19 203/20 206/19 208/19 212/21 215/20 215/21 216/9 217/10

223/22 232/13 236/18 238/4 238/22 239/5 239/11 239/14 240/22 241/21 242/7 242/13 243/5 244/11 244/16 244/22 245/4 245/25 246/4 252/25 253/15 254/2 255/3 256/10 258/4 259/11 261/16 262/3 265/5 268/5 269/6 271/13 274/22 275/18 276/17 276/25 277/8 277/11 282/14 282/22 283/14 284/24 287/5 288/8 290/14 292/15 293/2 293/4 297/23 297/24 298/1 298/16 300/18 301/2 301/6 302/16 302/20 303/20 304/2 304/4 304/21 306/6 307/23 308/17 309/11 309/22 310/11 311/18 311/19 312/15 312/23 313/1 313/20 314/13 315/18 317/9 317/10 318/5 318/19 319/6 319/20 321/8 321/10 321/19 321/25 325/4 325/21 338/6 339/6 341/23 342/7 342/7 347/23 350/2 350/13 350/14 350/17 350/20 350/21 351/1 352/7 Athens [1] 328/20 Athens-Clarke [1] 328/20 Atlanta [13] 17/12 21/9 21/19 120/4 143/4 143/5 143/21 213/23 213/23 334/23 336/10 336/12 338/21 attach [1] 194/4 attached [2] 95/13 241/19 attack [4] 52/20 63/24 82/8 275/15 attackers [2] 55/6 55/8 attain [1] 117/7 attempts [1] 12/8 attended [2] 327/16 344/19 attention [8] 58/16 83/3 153/25 171/25 222/24 244/17 323/6 337/16 attest [1] 175/24 attorney [8] 17/9 17/17 21/16 87/7 183/19 193/18 193/24 353/12 attorneys' [1] 24/24 attraction [1] 54/3

attractive [2] 61/20 237/4 attribution [1] 49/9 audience [5] 48/18 74/3 144/9 192/14 324/11 audio [12] 93/7 93/13 145/12 220/14 220/20 220/21 241/19 246/13 306/11 306/18 308/5 313/22 audio-ballot [1] 93/7 audio-tactile [1] 306/18 audit [48] 59/21 60/1 60/9 60/13 74/10 75/20 75/21 77/10 77/19 78/12 146/3 146/4 146/12 154/8 154/11 154/18 159/15 159/16 172/7 191/17 197/5 197/7 197/13 209/21 211/8 250/13 251/1 251/9 251/13 251/13 251/15 252/2 252/5 299/18 299/23 300/7 302/25 303/7 309/8 309/15 309/20 310/2 310/19 321/22 326/21 332/5 332/5 332/6 audit-and-review [1] 302/25 audit-log [1] 252/5 auditability [3] 146/5 149/18 152/8 auditable [2] 59/7 302/19 audited [5] 149/25 196/15 196/17 256/20 321/24 auditing [11] 74/23 182/19 190/18 202/14 225/6 231/6 231/9 231/13 256/5 277/18 298/8 AuditMark [3] 302/11 303/5 303/21 auditor [1] 190/19 **Auditors** [1] 60/6 audits [20] 19/22 58/3 60/11 74/14 74/18 74/18 75/5 75/12 75/14 76/23 77/1 77/5 77/21 164/7 189/8 189/10 225/15 256/11 321/21 341/20 augmenting [1] 301/5 August [2] 1/9 3/6

265/25

219/1 222/22 225/1 Austin [2] 265/24 225/2 225/3 225/8 229/2 238/5 238/22 authentication [3] 238/22 239/3 239/5 277/3 303/17 306/25

authority [1] 297/11 authorization [2] 182/6 219/15 authorization-to-vote **[1]** 182/6 automatic [1] 325/19 automatically [9] 13/18 36/14 37/4 63/11 225/23 236/19 236/19 259/23 310/1 availability [2] 108/25 120/16 available [19] 7/11 40/12 44/1 53/9 60/21 61/8 62/1 99/12 109/12 110/21 110/23 112/6 113/2 140/13 151/1 262/6 299/4 300/3 311/23 **Avalue [1]** 311/23 avenue [1] 32/11 average [1] 262/14 avoid [2] 46/7 62/25 avoided [1] 30/15 avoiding [1] 54/10 awarded [2] 207/4 230/1 aware [9] 13/23 24/25 105/4 111/2 111/3 134/4 134/8 320/25 321/14 awareness [1] 82/25 away [14] 5/6 71/24 108/20 109/17 133/25 159/21 168/22 261/10 270/7 278/3 279/8 281/1 287/11 304/21 В baby [1] 204/3 bachelor's [1] 17/11 back [114] 5/14 14/3 14/8 25/23 26/4 26/14 26/18 31/4 32/1 34/8 39/8 44/10 46/18 59/2 68/13 77/17 79/11 81/22 95/15 118/24 123/1 129/1 131/3 137/1 137/12 137/19 141/15 144/8 144/9 146/19 150/5 150/15 152/20 155/24 167/17 171/15 177/13 177/15 178/5 179/10 181/2 183/1 183/17 185/5 190/4 192/16 192/22 197/2 197/21 210/8 211/11 214/1 215/16

В back... [49] 239/19 244/23 245/1 246/13 246/15 246/18 252/14 254/18 256/9 256/10 258/15 259/17 260/1 261/11 261/13 264/3 264/20 270/24 273/22 273/25 274/23 278/5 283/15 283/16 283/19 283/22 284/1 285/15 285/22 286/7 287/8 287/12 289/13 294/20 296/14 297/25 300/20 302/16 307/24 309/3 309/5 309/6 314/13 319/18 329/7 338/8 345/10 349/24 350/16 back-room [1] 141/15 background [6] 49/23 66/7 102/2 106/23 295/24 297/19 backgrounds [1] 23/8 backside [1] 219/20 **backup [2]** 143/20 247/12 backups [4] 143/15 260/17 326/23 349/2 backwards [3] 177/21 178/3 183/15 bad [3] 177/7 273/1 310/7 bag [2] 214/24 273/6 Bailey [4] 22/24 74/7 137/16 137/17 **balance [1]** 134/16 **balancing [1]** 114/10 **ballet [1]** 13/15 ballot [473] **ballot is [1]** 224/13 **ballot's [1]** 180/5 ballot-delivery-only voting [1] 151/7 ballot-marking [47] 60/25 61/5 61/14 62/3 62/8 62/18 63/23 90/19 91/4 93/7 150/22 162/12 166/18 188/1 209/10 209/12 213/6 213/12 240/14 240/23 241/1 241/6 241/9 242/11 242/22 246/3 257/10 257/14 258/22 258/24 259/3 262/20 262/23 269/19 272/9 278/24 279/18 285/11 291/14 291/21 299/15 302/14 305/11 305/22 311/1 329/21 349/4 ballot-on-demand [3] 169/10 348/17 348/22

ballot-proofing [3] 216/24 217/2 218/9 Ballot.....144 [1] 2/17 balloting [4] 16/10 32/16 137/15 291/20 ballots [163] 14/2 14/9 15/16 19/21 20/7 31/12 32/14 32/19 33/15 33/19 34/6 37/23 38/14 39/12 40/12 41/10 41/14 41/25 43/8 43/21 59/17 59/19 60/3 60/16 60/18 60/20 60/23 61/7 61/23 62/10 62/25 63/2 63/5 63/11 63/20 64/10 73/12 74/12 90/14 90/17 90/21 90/23 91/1 91/1 91/3 96/4 97/18 123/1 133/24 135/20 136/25 142/7 147/9 147/10 147/10 147/14 147/20 148/23 149/6 154/12 159/20 160/19 160/24 161/2 161/14 162/2 162/4 164/8 165/17 166/20 167/22 167/23 168/2 168/7 168/10 169/20 169/21 172/2 172/9 176/21 178/6 179/2 188/19 188/24 189/1 191/2 192/13 192/15 196/15 201/15 201/21 202/8 206/21 209/24 211/10 217/8 217/9 237/1 237/8 239/13 239/14 239/20 240/4 241/13 248/1 252/17 252/20 253/14 253/16 253/21 254/1 254/3 255/17 256/3 256/19 261/5 263/7 265/1 266/20 271/21 271/22 271/25 272/5 278/11 280/23 282/14 282/24 284/4 287/23 287/24 289/20 290/3 290/8 290/9 290/11 298/7 300/12 300/12 301/5 301/9 305/20 305/22 306/11 321/4 321/7 322/16 325/20 327/18 329/14 329/17 334/3 334/4 334/8 340/12 341/19 342/2 344/22 345/19

346/5 346/20 347/16

ballpark [2] 158/12

Baltimore [1] 87/3

bar [3] 21/20 285/6

348/12 348/14

319/4

bar-code [2] 285/6 285/7 Barbee [3] 330/16 332/12 332/19 barcode [9] 181/13 182/15 182/22 231/3 231/4 255/14 255/18 272/25 285/8 barcodes [11] 60/3 182/18 214/18 215/2 257/12 257/12 288/2 326/18 331/18 331/21 335/19 Barnes [2] 26/1 26/2 barrel [1] 190/1 barrier [3] 97/16 97/24 232/5 barriers [3] 232/6 232/19 233/10 **Barron [3]** 344/1 346/24 347/3 Barry [2] 29/5 193/17 **Bartow [1]** 72/13 base [3] 229/18 286/6 305/1 based [32] 15/1 49/22 50/15 87/23 91/11 101/3 101/23 102/6 108/8 124/2 126/7 161/22 161/23 161/24 220/17 227/16 235/17 235/18 257/18 262/4 277/6 277/7 282/11 290/10 292/7 301/1 303/13 305/3 306/13 312/19 314/16 347/21 basically [24] 52/5 71/12 140/13 159/2 168/11 168/15 215/19 216/1 219/10 220/25 221/21 226/9 243/6 245/24 247/19 275/20 277/1 277/9 277/21 290/14 303/11 316/7 345/9 348/16 basis [4] 83/23 84/2 93/11 148/16 bathrooms [2] 89/13 89/18 batteries [4] 239/23 247/12 247/16 273/7 **battery [4]** 247/10 273/5 273/8 273/9 battle [2] 78/24 114/17 be [422] **be very [1]** 37/18 bear [1] 38/11 **beautiful [2]** 7/10 328/4 became [1] 278/4 because [157] 9/3 14/9

285/7

15/14 15/20 24/16 27/22 28/6 28/25 30/12 31/20 31/25 32/6 32/13 33/19 34/15 35/4 35/15 36/8 36/12 36/13 38/18 39/5 40/2 44/24 45/14 47/6 60/4 60/20 62/4 62/8 63/9 65/7 70/20 71/17 75/20 77/6 81/10 83/9 83/15 83/20 89/22 90/1 95/16 96/10 102/8 102/10 104/10 105/12 105/21 106/1 106/24 109/6 111/22 113/20 114/14 114/21 115/10 115/15 115/21 117/13 123/18 124/22 127/9 129/11 131/22 132/21 132/25 136/4 137/4 137/11 139/19 142/13 142/14 149/14 150/4 152/10 153/13 155/9 157/2 160/11 164/24 166/11 168/1 168/20 172/11 172/22 173/24 174/23 175/9 177/24 178/9 179/1 180/4 181/3 183/8 183/16 183/25 189/11 192/7 198/22 200/17 200/23 201/14 202/5 208/13 211/16 212/13 214/16 218/13 219/5 229/9 229/20 232/6 236/9 236/22 240/19 241/4 241/10 246/9 255/24 256/1 257/1 259/4 259/7 263/4 263/10 263/18 264/21 265/9 267/7 270/13 279/6 285/14 285/25 287/8 289/1 289/22 292/20 293/4 299/13 314/15 318/16 319/20 321/4 322/10 327/18 328/17 329/4 329/15 335/8 337/9 339/21 345/21 348/7 348/24 350/7 351/4 become [3] 51/6 151/1 304/16 **becomes [2]** 146/16 263/3 **becoming [3]** 33/6 54/3 189/9 bed [1] 166/8 been [106] 6/18 7/20 10/7 10/8 12/4 18/3 18/10 22/25 28/7 28/11 36/5 38/8 40/9 40/9 41/13 42/9 48/23 49/1 49/24 50/8 59/11 59/15 | behavior [1] 58/2

63/12 66/8 68/19 79/3 79/4 79/22 85/13 86/17 88/25 90/12 92/14 95/22 106/16 112/5 116/25 117/25 118/4 118/20 119/21 121/13 122/21 122/22 123/23 132/13 132/19 142/12 145/19 152/24 156/18 158/11 159/4 159/5 159/7 171/12 171/24 176/7 177/17 187/23 190/12 206/22 206/24 206/25 215/18 215/25 233/4 235/18 247/3 249/7 254/25 255/2 255/4 264/25 265/3 268/4 270/4 276/14 283/3 285/14 286/1 294/4 294/7 294/21 295/21 296/10 303/7 309/3 309/17 316/22 316/22 318/6 324/8 324/19 326/5 328/25 329/1 329/10 331/8 333/4 333/9 333/12 339/5 339/17 350/23 351/25 Beeson [4] 234/16 235/12 323/20 323/25 **before [55]** 1/7 3/12 8/25 10/6 13/18 24/17 24/19 27/19 28/15 29/9 33/17 35/1 35/8 35/9 35/11 36/22 40/5 42/1 61/12 63/1 67/4 75/25 76/15 84/24 85/14 101/5 103/14 118/1 119/22 119/23 131/16 133/10 144/2 153/2 163/18 171/11 192/24 202/12 208/3 213/5 220/9 225/18 231/14 231/17 244/21 283/21 289/20 292/11 292/23 305/13 310/23 316/1

329/2 329/5 348/2

beg [1] 340/21

begging [1] 340/7

144/23 255/12 264/4

beginning [8] 22/17

258/5 264/10 285/22

begins [1] 340/9

24/9 43/7 44/11 159/13

begin [6] 144/15

294/15 317/21

136/18

beforehand [2] 92/20

began [2] 141/14 283/2

В Behavioral [1] 6/7 behind [7] 9/14 141/16 141/20 157/8 166/12 309/21 322/4 behind-the-scenes [1] 141/16 being [65] 3/7 4/18 5/11 5/15 7/4 9/17 10/12 10/13 17/19 22/5 22/20 25/1 28/11 35/12 36/8 38/6 40/14 40/18 41/13 47/23 63/4 66/23 72/21 73/9 89/6 89/15 90/9 91/5 98/16 105/7 106/23 107/20 126/7 126/22 133/15 134/10 140/14 141/2 142/7 142/13 146/7 160/12 171/1 172/2 172/12 196/22 202/4 202/15 203/17 204/22 220/12 256/9 257/13 261/21 263/22 294/23 299/23 315/24 318/25 327/2 329/17 335/22 339/10 341/8 345/3 **Belgium [3]** 207/7 209/11 213/8 **believe [25]** 47/13 53/22 54/6 63/17 101/2 101/11 110/22 126/9 126/12 127/19 128/13 133/25 134/25 135/21 137/16 148/21 149/17 150/18 183/19 201/11 221/12 221/14 260/13 297/5 331/5 believes [1] 325/3 **bell [1]** 27/5 bells [2] 27/3 204/2 below [3] 129/21 301/20 302/1 **benchmark** [1] 54/4 beneficial [3] 129/2 174/18 200/5 benefit [3] 99/25 100/23 175/10 benefits [1] 135/19 Bert [1] 322/19 besides [2] 95/4 343/14 best [44] 19/5 30/7 46/4 50/15 50/17 51/9 51/17 52/18 52/21 53/7 53/15 64/16 67/8 70/14 70/18 70/22 73/24

103/25 104/3 104/24

105/3 108/23 110/9

113/21 140/8 150/3

150/19 164/1 165/20

172/21 192/6 208/12 234/6 262/4 271/4 275/10 275/18 277/17 291/4 303/14 303/23 322/4 322/6 353/7 **best-in-class** [1] 70/18 Bethany [2] 278/16 279/14 better [17] 26/24 32/6 38/17 43/15 45/5 104/19 115/18 128/23 139/19 150/11 191/13 215/8 215/8 223/4 224/15 268/14 331/25 between [24] 69/2 71/11 72/3 72/23 114/18 125/4 129/19 198/12 215/19 217/23 248/21 250/11 253/21 265/21 267/2 282/15 288/11 289/3 292/2 302/3 307/19 312/24 315/19 340/8 Beverly [1] 286/11 beyond [2] 237/2 326/22 biased [1] 68/11 **bid** [1] 253/10 bidding [2] 330/7 330/7 big [21] 11/13 26/10 30/13 80/11 87/12 89/14 95/6 96/8 111/10 114/24 121/4 122/1 131/3 133/12 136/11 158/7 189/17 195/8 195/18 207/6 293/3 bigger [3] 195/21 195/23 335/11 biggest [9] 25/24 39/4 95/12 104/8 133/13 168/20 267/12 270/1 348/14 bill [15] 122/3 125/24 145/10 157/20 157/21 157/23 159/3 170/5 170/19 171/18 172/24 177/22 177/25 186/6 186/13 billboards [1] 213/24 billion [1] 206/21 bills [2] 121/18 121/25 **bin [3]** 239/14 239/16 259/25 bipartisan [3] 76/1 190/24 193/13 birth [2] 181/25 182/1 birthdates [1] 182/8 bit [39] 3/14 12/22 24/5 40/11 49/23 57/24 84/7 84/25 98/13 100/3 116/8 117/21 118/10

119/1 119/3 122/25 126/3 126/21 130/5 148/2 172/10 173/17 174/25 176/20 190/3 198/23 206/7 209/22 211/14 235/5 235/16 236/14 266/2 266/9 269/23 273/23 296/19 302/21 331/19 bite [1] 74/25 black [9] 14/18 15/8 187/13 244/6 254/9 254/13 336/22 336/23 337/15 blacklist [2] 276/2 276/3 Blake [8] 86/10 86/13 87/1 91/23 102/21 103/24 109/21 111/18 blank [9] 243/4 248/1 250/18 268/16 268/19 268/20 306/4 306/5 306/17 blends [1] 130/23 **blind [14]** 86/11 86/14 86/20 90/7 90/8 91/17 93/8 93/11 93/14 94/9 94/16 103/5 103/6 111/20 **bloated [1]** 172/10 blogs [1] 303/18 **blood** [1] 243/15 blue [6] 153/14 185/8 191/7 206/14 239/14 259/25 bluetooth [4] 197/24 197/25 198/6 198/8 **BMD [2]** 300/7 307/19 **board [9]** 4/24 75/22 76/25 80/15 116/9 128/8 319/18 327/16 345/22 boards [3] 326/24 345/14 345/14 **body [1]** 49/1 **bolted [1]** 216/14 **bolting [1]** 268/15 **bolts [1]** 116/15 bond [5] 124/9 125/6 125/6 126/6 140/2 bonds [3] 124/4 125/7 125/10 **bono [1]** 12/16 book [33] 28/2 28/3 28/22 29/14 31/1 31/15 32/10 46/21 142/5 169/14 169/15 180/15 187/9 187/10 197/18 203/10 203/14 209/2 209/3 219/7 219/25 227/23 242/5 284/25 285/8 290/22 291/7

293/22 294/1 307/8 307/12 307/15 347/18 **books [7]** 25/10 28/13 30/13 56/10 57/4 285/2 307/9 boot [5] 276/12 276/12 Brian [1] 7/13 276/13 276/13 276/24 booth [4] 33/11 162/24 198/22 199/1 booths [4] 62/1 166/19 57/12 296/18 167/4 167/5 boots [1] 79/4 Boren [5] 6/10 111/16 116/4 117/22 285/18 born [3] 97/21 98/1 98/9 both [28] 24/21 33/14 50/11 61/2 78/24 133/18 146/20 147/21 167/7 170/2 178/12 178/14 179/16 196/7 209/24 211/3 213/9 247/11 253/2 266/3 266/17 280/13 298/25 303/13 304/10 305/21 311/1 336/13 bothering [1] 200/17 bothers [1] 89/24 **botnet** [1] 49/8 **bottom [13]** 84/9 84/10 110/6 175/19 183/12 183/13 183/16 184/13 184/24 185/1 244/3 244/16 322/21 bought [2] 249/9 274/22 bounds [1] 312/14 **Bowers [2]** 343/25 344/13 **box [29]** 14/18 15/8 69/10 72/15 82/15 90/25 91/2 150/9 173/20 174/22 179/17 188/20 188/20 189/2 189/14 190/14 193/16 202/15 239/16 239/18 269/6 269/8 281/11 281/19 290/12 296/16 306/9 334/6 334/7 boxes [2] 62/11 296/17 **Boy [1]** 196/25 **braille [7]** 93/16 94/4 94/6 94/17 94/18 94/18 | building [3] 82/21 175/13 branches [1] 120/2 **branding [1]** 55/11 breached [1] 206/24 **breadcrumb** [1] 194/3 break [8] 2/4 133/1 144/3 144/13 188/25 189/3 205/17 233/21 breakdown [1] 263/24

breaks [2] 175/4 269/8 breakthrough [1] 69/23 **Brennan [1]** 331/12 brevity [1] 226/14 bridge [4] 215/19 216/1 216/1 336/19 brief [5] 9/1 41/19 48/5 briefly [9] 41/4 42/5 48/3 58/23 75/2 213/7 234/15 235/14 305/19 **brightness** [1] 308/24 bring [13] 8/9 55/6 179/10 188/25 210/7 238/5 239/18 258/14 259/24 275/10 309/23 313/6 337/25 bringing [4] 152/20 208/25 211/13 213/4 **brings [2]** 133/4 157/14 **broad [2]** 56/25 73/2 broader [1] 53/6 broadly [1] 55/10 Brockington [1] 21/8 broken [1] 190/2 brothers [1] 168/14 brought [5] 66/20 147/2 171/24 234/11 283/3 **Broward [1]** 159/14 browser [3] 148/8 148/10 153/13 **Broxton [2]** 264/8 264/22 **Bruce [3]** 65/21 66/5 72/12 **BS [1]** 87/4 bubble [1] 177/14 bubbled [1] 137/8 **bubbled-in [1]** 137/8 **bubbles [1]** 306/1 **budget [6]** 16/8 119/10 123/18 125/3 125/9 140/11 budget-strapped [1] 16/8 **budgetary [1]** 125/17 **Budgeting [1]** 118/16 **buffer [1]** 231/17 82/24 298/6 built [7] 81/10 82/8 146/6 148/7 151/10 211/19 236/15 bulk [2] 132/10 169/20 **bullet [3]** 43/14 58/11 134/14 **bunch [3]** 113/12 238/23 331/10

В **burden [2]** 116/20 168/10 Burke [2] 123/8 324/19 burning [1] 10/21 business [16] 45/12 45/13 54/19 55/5 76/13 83/12 83/12 84/1 176/7 235/19 236/10 264/25 332/25 334/1 335/11 335/12 businessperson [1] 66/15 **busy [1]** 179/2 but [293] 3/15 8/9 9/5 9/12 9/24 10/14 14/7 14/11 14/17 22/5 23/10 24/4 24/15 25/9 26/12 27/1 27/5 27/18 28/23 29/20 32/23 32/25 34/2 34/6 34/19 35/10 36/2 38/22 39/11 39/14 39/16 39/21 40/10 40/14 41/21 42/9 42/22 43/16 43/18 45/13 45/21 46/3 46/5 46/13 46/22 47/9 49/12 49/24 52/21 54/9 55/23 56/9 56/14 57/5 58/5 58/25 59/14 60/17 61/17 62/7 63/3 64/4 67/7 67/11 68/23 70/3 70/11 71/21 73/23 74/14 74/24 75/15 77/19 78/14 78/23 79/23 80/1 80/3 80/25 81/3 81/16 81/19 81/25 82/13 83/11

83/14 83/18 84/7 85/24

89/7 89/15 90/20 92/13

93/3 95/17 96/12 97/4

100/17 100/25 101/10

101/14 101/17 101/18

102/18 105/24 106/3

109/13 111/3 111/23

113/22 114/6 114/20

115/13 115/17 115/21

118/4 118/10 119/4

119/21 121/6 121/9

122/4 122/10 122/14

123/19 128/9 128/15

132/15 133/6 133/12

136/7 137/4 137/10

140/25 141/6 142/6

146/17 148/9 150/8

151/8 153/22 154/12

154/16 154/21 154/23

155/21 156/7 156/15

134/10 134/15 135/20

137/25 140/20 140/21

128/24 129/8 130/7

97/13 97/19 98/6

156/22 157/2 158/2 164/2 164/10 166/4 167/6 168/3 168/7 168/13 168/19 168/23 171/9 172/16 173/24 174/19 175/5 179/19 182/4 182/19 183/1 183/16 184/18 185/5 186/10 187/13 188/16 189/18 190/16 193/2 194/11 197/4 198/8 199/23 200/1 201/25 204/2 206/14 207/14 207/20 208/4 208/14 210/22 212/17 215/8 218/7 218/10 220/14 222/1 222/4 224/14 225/6 225/13 227/5 229/18 229/19 230/10 232/12 232/16 233/9 235/15 236/5 238/2 241/13 241/16 244/15 244/19 246/23 249/11 250/25 256/2 256/17 260/5 263/3 263/14 263/17 268/12 271/7 273/2 273/19 277/22 278/21 280/5 282/18 283/4 287/9 287/12 288/2 288/24 289/24 290/2 292/19 293/25 296/17 297/5 297/7 297/8 298/21 299/19 300/4 300/12 300/24 302/16 304/15 306/15 307/8 310/17 313/15 313/19 315/4 315/18 319/10 319/25 320/16 321/22 322/12 322/24 326/21 328/1 328/23 329/12 329/22 332/4 335/5 336/17 339/16 340/13 341/19 341/22 342/10 343/11 348/10 350/2 **button [2]** 188/13 245/12 **buttons [5]** 94/12 140/25 153/14 210/7 259/20

buy [14] 82/10 82/12 82/14 127/7 128/3 129/10 195/12 247/14 261/24 270/12 275/18 311/14 311/18 311/21 buying [1] 28/6

cabinet [2] 180/11 192/18 cable [2] 274/17 274/22

cables [1] 274/18 calibrate [2] 308/14 308/15 **calibration [1]** 308/12 California [1] 132/21 call [30] 31/2 46/16 46/20 51/23 52/4 112/2 112/5 127/13 146/12 174/9 175/3 179/1 190/19 195/13 197/24 198/14 199/5 219/11 236/8 237/16 241/8 243/2 273/24 278/19 299/13 302/3 317/11 317/24 320/16 320/17 called [17] 28/1 35/8 35/9 52/11 59/5 59/20 68/18 180/16 189/9 241/21 269/14 274/10 285/9 294/5 301/14 311/23 327/15 calling [2] 199/1 340/11 calls [2] 283/23 283/24 came [13] 9/12 14/8 23/2 69/11 113/14 131/15 150/2 166/9 211/24 265/13 268/21 321/2 342/6 camera [1] 181/12 Cameron [4] 234/10 234/24 324/4 324/4 camp [2] 78/12 342/4 campaign [1] 325/25 campaigns [2] 17/6 80/12 campuses [1] 86/25 campusing [1] 300/25 can [294] 4/7 8/10 9/22 10/4 13/8 13/22 13/25 16/16 22/13 28/8 31/4 33/12 33/23 33/25 34/20 35/3 35/10 35/13 37/3 37/5 37/9 37/11 38/18 40/14 46/4 46/8 46/15 46/17 48/11 48/15 53/20 54/13 54/21 54/22 55/12 56/9 56/17 58/24 59/23 61/6 61/9 61/24 62/18 62/22 62/24 63/20 63/21 66/25 68/13 69/8 71/10 71/17 71/20 72/17 73/22 73/24 74/25 75/17 77/11 77/20 78/1 82/10 86/7 94/16 94/21 95/21 96/16 97/11 98/10 100/22 101/16 101/18 103/13 105/23 105/25 105/25 106/1 106/3 109/11 109/18

110/18 113/21 114/20

115/12 115/14 117/17 120/5 120/10 126/19 127/4 129/1 130/10 132/5 138/15 138/25 140/13 145/23 150/3 150/5 152/2 152/12 153/15 153/16 153/24 154/2 154/9 154/11 154/15 154/21 155/18 155/19 156/3 156/16 158/18 158/20 160/25 163/25 164/18 169/23 169/24 170/18 171/7 171/7 172/16 174/13 174/20 177/11 183/16 185/4 185/5 185/6 186/20 187/1 187/7 191/3 191/3 192/3 192/20 194/3 196/7 197/12 197/13 198/4 198/16 202/2 202/4 202/6 203/25 204/7 206/14 207/20 209/5 209/12 209/19 212/15 214/14 216/21 216/24 216/25 217/18 217/21 217/22 218/5 218/12 218/12 218/14 218/16 218/22 219/14 219/16 219/16 219/19 220/7 220/13 221/7 221/14 222/1 222/8 222/10 225/1 225/14 226/7 227/2 228/8 230/4 231/2 231/3 231/5 231/10 233/2 233/7 233/7 233/8 237/7 237/10 238/2 242/22 244/24 245/4 246/10 246/16 246/21 247/12 248/3 250/8 252/6 252/7 253/15 255/11 256/11 265/2 267/16 268/14 270/15 270/24 272/14 273/21 274/2 274/14 275/10 277/9 277/13 277/15 280/10 283/18 283/18 284/5 285/4 285/5 285/5 285/13 286/5 287/1 287/9 287/17 289/15 289/24 290/13 291/3 291/5 291/9 291/9 298/19 298/23 299/2 299/5 300/19 305/13 306/6 306/10 306/18 307/11 307/23 307/24 307/25 308/16 308/22 308/24 309/4 309/5 310/7 310/10 310/12 310/13 310/22 311/1 311/14 311/17 311/18

311/20 313/19 314/22 315/4 315/11 316/2 316/7 316/13 316/15 316/21 317/13 317/23 318/22 319/10 320/16 322/9 326/18 328/3 332/1 333/17 337/21 337/22 340/10 340/10 343/21 can't [38] 31/1 36/11 46/5 66/17 73/15 75/9 82/12 82/15 83/15 93/14 97/6 100/18 100/19 130/6 138/13 143/10 190/8 193/2 193/2 207/21 233/1 233/4 255/2 271/9 274/9 276/5 276/10 278/14 280/4 313/18 314/13 331/7 331/21 333/8 335/10 337/7 337/8 350/7 cancels [1] 47/6 candidate [24] 13/22 13/23 21/13 36/10 69/11 69/12 137/7 153/18 154/10 156/12 156/14 156/17 166/4 180/3 183/3 184/15 197/1 220/1 272/21 272/25 308/19 328/22 341/13 341/17 candidate's [1] 137/9 candidates [15] 35/1 94/11 166/9 178/12 178/14 183/2 184/11 184/13 206/22 208/16 216/20 217/25 272/16 278/15 293/8 cannot [8] 54/18 75/21 93/13 106/2 162/2 244/8 278/14 280/25 Canon [1] 300/1 capability [1] 252/10 capable [4] 81/18 81/19 89/11 220/11 capacity [1] 315/15 capital [6] 23/19 45/2 45/10 83/23 83/25 124/3 capitol [3] 113/11 113/14 131/16 caption [1] 147/20 capture [1] 151/24 captured [4] 157/7 197/11 251/25 252/4 car [1] 185/23 card [30] 161/14 209/7 219/22 219/24 220/1 220/5 220/22 220/23 221/6 221/7 221/11

243/3 243/11 243/12

C castle [1] 273/25 certify [4] 19/23 163/16 57/19 103/13 casts [2] 11/18 300/25 353/4 353/11 **chapters [3]** 103/7 card... [16] 243/14 catch [5] 14/1 37/4 cetera [7] 57/5 121/11 103/12 103/17 243/22 245/15 246/14 37/24 154/20 292/21 217/19 217/19 218/7 **character [3]** 214/25 246/16 248/1 255/11 220/21 220/21 catching [3] 13/14 272/19 288/1 305/14 305/19 306/23 13/18 16/11 chain [4] 55/9 214/5 **charge [7]** 7/11 41/5 306/25 307/15 307/17 170/1 170/2 205/3 category [1] 41/9 261/23 332/3 310/14 315/2 315/2 caught [4] 38/4 156/18 337/12 337/13 chair [4] 3/13 5/23 66/6 cards [8] 209/4 229/22 156/25 336/13 164/17 **Charlotte** [1] 172/5 258/15 258/17 260/2 chauffeur [1] 22/19 cause [2] 138/15 **chairing [2]** 5/25 305/18 307/11 315/8 260/17 131/17 cheapest [3] 56/19 care [8] 70/9 70/10 cautiously [1] 74/22 chairman [12] 3/18 270/13 270/14 118/25 118/25 333/8 Cedars [1] 113/4 3/24 7/13 7/16 47/20 check [24] 15/12 16/2 339/3 339/4 339/4 census [2] 41/4 159/19 68/6 76/7 145/4 262/11 59/19 59/20 64/3 150/5 career [1] 176/11 center [14] 1/10 3/11 264/7 293/11 295/1 169/12 181/4 182/3 careful [3] 74/24 77/12 49/21 50/10 50/12 chairs [1] 9/20 187/8 198/4 201/21 334/12 218/12 218/14 241/22 50/13 50/21 51/10 challenge [8] 57/22 carefully [1] 200/25 52/10 87/21 155/12 66/23 67/4 70/6 78/11 242/1 242/6 242/10 Carlisle [2] 234/20 214/14 214/16 331/12 83/22 103/1 115/2 242/13 243/8 261/11 234/21 center's [1] 214/15 challenges [11] 21/13 280/1 284/24 307/14 Carolina [9] 65/1 65/2 centers [1] 218/7 check-in [15] 15/12 42/10 69/3 70/24 72/21 119/11 172/5 234/17 central [23] 59/1 74/20 93/3 100/9 105/2 16/2 169/12 182/3 236/2 236/2 248/25 147/25 150/20 169/25 118/11 207/14 268/1 187/8 198/4 241/22 249/1 189/17 195/8 198/12 challenging [3] 12/6 242/1 242/6 242/10 cars [1] 336/14 209/25 229/2 256/10 135/21 172/23 242/13 243/8 261/11 Carter [1] 176/9 259/18 278/2 278/7 chance [9] 60/4 63/3 284/24 307/14 carts [1] 312/1 289/16 289/20 290/1 71/19 179/13 186/2 **checked [6]** 109/3 cascaded [1] 77/15 290/5 290/9 299/25 319/13 343/6 346/16 169/14 198/10 198/17 case [15] 9/15 25/1 300/20 301/6 309/24 351/12 272/2 285/3 42/9 107/21 129/17 **centralized** [5] 100/15 change [48] 25/8 81/16 **checked-in** [1] 285/3 154/17 154/23 156/14 216/5 216/5 351/9 81/17 102/25 103/2 checking [2] 291/6 156/21 171/15 237/9 351/16 103/23 114/12 128/19 291/11 237/20 281/16 337/1 centralizing [1] 216/8 131/3 131/11 133/21 **checkmark** [1] 179/17 346/7 135/11 136/3 139/13 checks [2] 198/9 322/1 **centrally [5]** 217/9 cases [6] 12/5 21/12 217/24 218/8 228/20 139/17 151/13 151/14 **chew [1]** 74/25 42/7 55/11 56/11 56/12 297/12 155/5 155/6 155/13 Chi [1] 87/25 cast [70] 13/19 14/4 cents [2] 169/4 169/5 155/20 155/22 183/11 chief [5] 295/3 304/8 14/8 15/23 20/7 24/11 185/5 185/6 185/7 317/22 318/5 318/7 century [2] 68/14 35/1 36/15 39/20 43/8 220/16 222/1 238/20 68/17 **childcare** [1] 15/21 62/23 72/5 91/6 110/4 certain [16] 5/12 41/9 240/2 244/5 244/23 China [1] 68/16 142/7 142/12 146/23 59/5 67/24 124/3 140/1 248/13 254/19 254/21 **choice [10]** 126/23 147/17 149/6 153/12 169/16 177/14 183/3 140/2 140/3 195/7 260/15 271/7 273/5 153/16 153/18 154/4 214/8 252/7 329/6 277/24 277/25 283/7 183/20 189/19 244/2 155/8 155/24 156/9 330/8 333/18 333/18 307/25 308/17 316/2 250/19 251/18 326/3 157/7 171/13 185/22 336/16 333/3 333/8 333/22 choices [14] 94/11 202/3 206/21 210/7 certainly [27] 3/6 3/17 342/5 137/3 183/23 185/20 215/7 231/14 233/4 4/7 6/23 7/16 9/5 10/14 changed [12] 24/19 186/4 186/19 226/7 238/1 238/12 242/2 22/23 37/19 41/15 57/2 60/14 118/9 141/17 237/22 237/23 244/14 245/12 245/13 245/15 58/8 108/18 121/6 141/19 155/16 166/2 280/13 280/13 280/15 246/4 246/10 246/25 121/11 122/14 129/16 206/25 212/5 224/6 322/4 250/19 251/1 251/3 130/7 138/25 139/1 248/7 286/12 choose [18] 63/8 251/16 255/16 256/13 171/17 183/19 183/23 139/8 212/18 215/9 changes [11] 18/23 256/18 261/9 263/13 227/2 316/24 333/20 83/22 141/18 185/9 185/1 185/13 190/25 286/2 286/13 300/13 238/24 245/2 245/5 191/1 191/4 191/9 342/9 303/21 306/8 306/9 193/11 244/21 289/23 certainty [1] 283/19 255/3 285/20 297/4 306/22 309/6 309/18 CERTIFICATE [2] 326/12 307/23 307/24 308/18 314/9 314/11 316/1 353/1 353/19 changing [3] 106/18 309/4 328/5 316/22 325/20 327/23 certification [3] 56/23 141/4 261/14 chooses [2] 209/23 331/20 333/12 163/18 353/8 **channels** [1] 151/6 250/25 cast and [1] 157/7 certified [6] 1/7 41/13 **chaos [3]** 61/9 77/16 **choosing [2]** 55/22 cast-vote [1] 256/13 87/25 145/17 146/10 144/24 145/11 145/15 78/7 95/4 casting [1] 178/21 145/23 146/2 146/16 353/18 **chapter [3]** 21/19 **chose [2]** 126/15

251/24 chosen [2] 260/24 267/18 **Chris [2]** 118/15 118/19 **church [3]** 200/11 203/20 204/1 circle [1] 178/13 circled [1] 156/14 circles [2] 191/22 192/19 Circuit [1] 12/12 circulating [2] 8/20 339/24 circumstance [1] 72/5 circumstances [1] 22/18 **CIS [2]** 50/14 50/18 cities [14] 116/22 119/16 119/18 120/2 120/11 120/19 123/6 126/14 126/17 126/22 129/4 129/19 130/14 130/17 citizen [8] 72/15 89/25 320/24 327/14 328/24 339/2 341/14 345/1 citizen's [1] 67/19 citizenry [1] 339/3 citizens [9] 18/8 41/16 87/22 97/21 192/15 325/8 329/8 330/9 340/19 citizens' [1] 71/11 citizenship [1] 89/22 city [16] 116/17 117/6 117/25 119/15 119/17 119/21 119/24 120/4 126/17 184/8 191/1 191/3 240/8 261/1 317/18 338/21 **civics [1]** 113/13 civil [3] 9/7 12/16 18/25 clarification [2] 113/8 231/23 clarified [1] 113/20 clarify [5] 161/19 250/5 287/17 302/8 313/13 **clarifying [1]** 254/23 Clarke [1] 328/20 **class [4]** 70/15 70/18 236/22 335/12 **classified** [1] 166/1 claw [1] 119/3 **Claxton [1]** 110/15 **Clay [1]** 7/20 clear [24] 2/17 6/20 75/3 127/17 137/3 137/10 141/25 142/10

182/7 182/10 225/5 C 225/15 225/16 230/17 clear... [10] 155/4 230/18 230/20 230/24 186/8 186/11 188/18 231/11 231/12 231/15 196/18 198/7 225/20 231/19 272/17 272/20 254/17 309/2 309/8 272/21 272/22 278/12 ClearBallot [2] 152/9 279/16 279/16 279/21 157/14 279/22 284/22 285/6 ClearCast [3] 147/23 285/7 285/9 285/10 147/24 150/13 285/12 285/13 285/14 ClearCount [1] 148/1 285/15 285/17 285/23 ClearDesign [1] 148/6 287/18 287/19 287/23 clearly [4] 93/8 154/22 288/7 288/12 288/14 206/19 237/20 288/21 289/1 289/2 ClearVote [1] 149/9 290/23 290/25 291/12 clerk [4] 12/11 143/19 291/13 291/19 291/23 165/1 176/15 292/5 292/7 292/15 click [4] 153/16 154/2 292/16 293/15 293/21 154/7 156/15 293/21 293/24 303/24 clicked [1] 153/11 316/14 client [4] 148/17 coded [3] 94/21 148/12 159/12 172/22 216/22 276/9 clients [6] 207/3 codes [2] 289/6 331/23 207/15 216/25 267/24 codified [3] 115/6 268/13 268/21 115/7 115/10 **Clinton [3]** 73/15 coding [1] 289/9 178/11 179/15 coercion [1] 212/19 clock [1] 173/5 cofounder [1] 349/24 close [18] 36/1 86/7 collaborate [2] 66/25 131/20 154/24 164/5 67/8 187/22 188/8 188/11 collaboration [5] 24/15 198/1 224/3 226/10 45/14 58/16 117/13 238/4 254/3 258/7 140/6 259/13 259/21 259/21 collaborative [2] 309/25 216/18 218/14 closed [5] 72/4 148/9 collapsible [1] 269/8 152/19 337/18 339/10 colleague [1] 215/12 closely [6] 18/25 19/11 colleagues [2] 49/15 52/13 121/19 121/21 206/8 124/22 collect [1] 339/8 closest [1] 273/15 College [1] 87/11 closing [7] 38/25 40/24 color [11] 13/7 42/13 42/5 46/19 257/17 94/21 94/21 169/5 258/9 259/11 177/14 191/24 192/19 closures [1] 337/16 244/6 254/11 254/13 **co [7]** 3/13 5/23 5/25 color-coded [1] 94/21 6/2 48/22 68/6 122/15 **Colorado [9]** 74/15 co-chair [1] 5/23 75/3 75/6 75/8 164/25 Co-chair Fleming [1] 165/8 297/8 303/8 305/1 co-chairing [1] 5/25 colored [3] 107/1 **co-chairman [1]** 68/6 178/13 191/22 co-election [1] 122/15 Columbia [11] 1/9 3/11 co-executive [2] 6/2 88/18 122/15 122/19 48/22 123/6 128/21 131/19 coach [2] 17/17 79/18 132/6 234/22 352/4 **coalitions** [1] 18/25 combination [3] coals [1] 330/10 212/23 299/7 300/14 coast [1] 234/19 combine [1] 132/7 Coastal [1] 12/20 combined [1] 282/21 Cobb [2] 235/2 253/24 combines [1] 143/7

code [60] 14/20 182/7

come [69] 9/20 24/3

25/2 25/13 31/4 47/6 47/15 56/14 76/16 81/22 89/12 95/5 102/2 105/11 107/21 125/10 125/13 126/2 128/25 128/25 145/8 152/19 154/17 158/12 161/16 173/16 185/18 190/4 197/2 198/4 200/17 212/25 213/22 214/19 215/4 220/23 224/13 225/2 232/7 242/15 254/9 259/17 264/3 268/17 269/11 274/21 278/16 285/4 285/15 287/20 289/13 290/21 307/13 314/6 317/11 317/14 317/17 318/17 323/21 324/14 328/24 330/18 331/8 335/23 338/15 343/9 345/10 346/25 347/21 comes [31] 47/1 53/6 59/1 60/12 66/16 79/9 79/11 128/4 150/18 160/25 161/7 161/20 166/20 169/13 183/24 185/4 185/25 187/5 192/22 193/16 197/20 214/22 227/8 228/3 254/18 284/24 290/11 291/19 307/7 310/21 322/21 comfortable [2] 139/5 189/9 comics [2] 184/18 184/19 coming [30] 7/25 34/12 43/25 73/2 123/12 127/14 154/18 162/14 172/21 213/5 228/12 231/21 242/18 254/8 274/2 275/4 317/20 323/16 330/13 332/11 334/17 336/21 341/1 342/4 344/4 344/5 346/23 349/8 351/22 352/2 coming-up [1] 342/4 commencing [1] 1/8 commend [1] 122/4 comment [7] 8/20 8/23 9/4 38/22 39/3 114/4 317/5 commentary [1] 344/18 commented [2] 30/23 131/23 comments [8] 2/23 9/6 29/12 40/25 58/22 110/13 147/8 218/17

Commerce [1] 50/5

150/21 150/23 150/23 175/3 commercially [2] 300/2 311/22 commission [57] 1/1 1/6 3/5 3/10 3/20 4/8 7/12 7/24 8/14 10/20 11/2 11/7 11/15 11/25 12/25 13/23 14/20 15/25 19/4 22/22 29/25 48/17 56/24 62/5 74/3 74/5 86/5 108/20 110/11 122/4 122/8 129/9 135/1 138/25 144/4 144/5 144/7 145/7 206/3 211/23 234/9 295/2 296/9 324/25 325/18 326/2 326/10 327/13 328/11 331/13 338/24 340/22 344/18 344/20 345/25 347/7 352/2 commission's [1] 29/20 commissioner [2] 6/6 39/15 commissioners [12] 5/13 7/15 39/16 53/14 109/23 120/24 121/3 155/3 189/3 319/18 345/15 345/22 commit [1] 200/25 commitment [1] 4/8 committed [5] 75/18 83/14 83/15 83/19 84/8 | complications [1] committee [7] 21/21 21/22 117/20 131/16 176/19 263/11 351/25 **common [3]** 13/19 270/6 270/8 communicate [4] 30/11 30/18 267/22 279/3 communicated [1] 113/22 communicating [1] 343/22 communication [4] 55/17 198/11 212/24 267/9 communities [6] 13/6 13/6 15/20 16/7 42/12 102/3 community [12] 51/16 87/20 87/23 97/18 103/4 104/14 104/14 104/18 139/3 187/4 216/17 337/19 community-based [1] 87/23 compact [1] 269/5

commercial [5] 150/14 companies [1] 48/12 company [27] 49/8 49/9 138/19 146/17 169/3 176/6 180/16 187/2 195/16 195/17 206/7 206/13 206/18 226/12 235/5 235/15 235/17 264/14 265/10 293/25 294/2 294/5 296/20 304/10 304/12 304/18 311/23 company's [1] 65/25 compare [3] 231/15 231/17 303/4 compared [1] 45/21 comparison [1] 135/16 competitive [2] 210/3 227/7 complaint [3] 25/24 104/8 348/14 complementary [4] 70/7 70/14 70/21 77/2 complete [9] 72/8 72/8 73/18 74/13 182/3 284/6 315/25 316/5 330/6 **completely [5]** 54/16 72/21 75/22 174/20 301/18 **complex** [1] 73/7 complexity [1] 263/18 compliance [1] 86/1 **compliant [1]** 112/13 complicated [2] 113/15 114/5 134/17 comply [2] 179/13 211/19 component [7] 70/12 71/7 73/10 73/11 93/8 161/3 326/14 components [8] 57/2 175/2 210/23 239/23 247/14 254/2 275/20 300/3 **composed** [1] 5/18 comprehensive [1] 212/21 **comprised [3]** 100/4 210/11 210/16 compromised [1] 107/3 computer [12] 15/5 34/25 48/20 57/21 131/5 142/24 161/22 174/23 228/3 275/18 306/5 350/9 computer's [1] 321/18 computer-based [1] 161/22 concept [1] 272/9

C 273/18 **conflicts** [1] 68/1 consultants [1] 66/1 conforms [1] 314/3 consulting [1] 87/2 conceptually [1] 57/3 confusing [4] 31/20 Contact [1] 281/2 concern [8] 62/15 31/23 110/18 113/24 contain [6] 85/16 76/22 122/1 168/12 190/13 284/19 286/24 confusion [5] 134/24 308/1 168/21 169/8 327/17 136/2 136/6 139/12 287/2 289/7 329/1 214/1 contained [4] 209/13 concerned [13] 79/2 confusions [1] 138/15 214/17 231/16 316/14 115/25 134/11 136/2 318/14 container [1] 225/23 congratulations [1] 320/24 327/14 327/23 166/11 containing [1] 289/2 328/24 335/8 336/11 congress [1] 184/4 contains [2] 287/5 341/14 343/11 345/2 congressional [1] 288/7 concerning [1] 13/12 179/4 contemplate [2] 26/7 concerns [18] 61/3 conjunction [1] 304/23 44/12 67/23 74/9 101/14 connect [2] 204/8 contemplates [2] 25/6 101/16 101/23 120/12 220/15 114/21 127/25 129/13 129/15 connected [5] 142/22 contend [1] 41/16 133/14 134/9 135/18 142/25 143/8 199/23 content [5] 72/6 90/22 43/19 168/17 168/20 216/16 203/17 112/13 231/15 246/12 216/17 284/11 connection [3] 56/7 contents [2] 153/20 103/15 conclude [1] 47/10 200/3 203/24 153/24 Concluded [1] 352/7 connectivity [2] 142/9 contest [26] 44/17 concludes [1] 351/23 44/21 63/8 64/1 153/13 142/15 conclusion [1] 8/18 consensus [1] 50/15 153/18 154/24 156/19 concrete [2] 13/11 consensus-based [1] 163/16 165/22 222/19 336/17 50/15 222/23 223/19 224/22 condition [1] 133/15 225/2 237/21 251/5 consequences [2] conduct [1] 129/6 272/15 272/19 272/20 77/15 224/23 **conducted** [1] 303/7 consider [12] 24/8 272/25 278/14 286/10 conducting [2] 74/18 24/8 25/21 55/13 55/20 288/4 309/1 309/4 348/11 56/24 138/2 141/25 contests [20] 21/13 296/12 **conducts** [1] 52/3 152/9 326/2 326/11 26/11 63/9 63/22 conference [3] 52/9 345/25 156/20 164/5 165/5 125/25 145/13 consideration [4] 27/6 165/6 165/16 166/8 122/11 **confidence** [11] 18/6 43/20 60/24 344/19 217/24 218/21 222/20 31/21 31/24 55/14 considerations [2] 222/21 222/22 224/7 75/16 77/11 78/2 5/21 30/3 251/6 280/12 288/1 146/21 322/13 331/17 considered [4] 40/15 293/7 121/14 332/8 72/14 253/12 272/8 context [2] 68/24 84/25 confident [2] 24/12 considering [4] 11/4 contextual [1] 222/13 26/19 43/5 55/24 121/17 continents [1] 206/17 259/22 confidentiality [3] consist [1] 50/24 contingencies [2] 72/11 72/20 73/8 **consistent** [1] 115/13 109/6 109/10 configurable [3] consolidate [2] 232/13 contingency [1] 97/9 219/12 220/8 299/14 300/2 continually [1] 81/23 326/17 configuration [11] consolidated [2] 259/9 continue [20] 5/16 56/13 82/23 210/14 310/11 19/3 78/1 81/3 81/6 210/18 216/19 227/4 consolidates [1] 81/11 81/16 81/17 240/3 271/7 282/17 81/18 92/15 142/1 257/18 299/16 299/18 157/18 162/14 164/15 301/13 consolidation [1] configurations [3] 183/22 219/18 244/21 232/22 240/19 240/22 241/5 245/4 247/13 257/7 constant [2] 114/10 configured [5] 171/6 114/17 continues [1] 4/13 219/21 306/10 308/3 constantly [1] 304/13 continuing [5] 52/8 315/5 constituencies [1] 5/4 157/17 184/2 224/23 **confirm [2]** 73/1 constituents [2] 304/14 67/7 290/19 131/10 137/24 continuity [3] 2/4 45/7 confirmation [1] constitution [1] 114/13 45/8 219/24 constitutional [2] contract [11] 126/25 confirmed [2] 73/21 179/3 184/21 129/7 130/15 137/22 73/22 constrained [2] 34/10 138/2 206/11 207/8 confirms [1] 60/9 229/18 229/20 230/2 53/20

218/22 239/4 249/6 contracts [1] 330/11 250/3 250/4 250/9 contrast [5] 37/7 250/20 257/13 281/19 106/24 244/4 280/11 282/17 285/24 288/4 289/22 290/24 294/4 contribute [1] 172/17 315/9 315/10 353/7 contributions [1] corrected [1] 292/10 correctly [12] 24/12 control [7] 82/23 94/9 59/10 59/15 60/6 94/13 96/22 146/19 160/21 165/18 168/23 277/7 277/9 189/15 250/15 279/25 controlled [1] 308/2 289/8 328/17 controller [3] 269/15 corroboration [1] 278/19 337/5 326/9 controls [4] 80/19 **corrupt** [1] 335/13 94/22 221/3 233/3 **corrupted** [1] 278/5 convenience [2] 38/3 cost [27] 51/18 121/7 122/1 124/11 128/24 convention [2] 103/8 137/20 139/7 148/25 158/2 161/23 167/8 conversation [4] 88/10 167/9 168/3 168/9 155/10 157/18 215/22 168/25 175/7 194/23 **converse [1]** 223/15 226/17 228/5 228/10 convert [3] 271/1 228/16 229/5 229/7 271/12 284/5 248/17 271/14 282/6 **converting** [1] 137/2 335/4 cost-based [1] 161/23 conviction [1] 21/21 COO [2] 87/19 87/20 cost-effective [1] cool [1] 323/12 139/7 costs [7] 53/17 53/18 Cooper [2] 295/14 133/6 133/9 150/24 160/16 326/4 coordinate [1] 3/17 coordinating [1] **COTS [2]** 175/3 248/8 could [65] 34/2 39/7 coordination [4] 5/20 40/10 43/23 53/19 6/13 116/7 121/25 58/11 60/7 61/1 61/2 coordinator [2] 118/22 77/6 77/19 88/11 92/25 99/3 102/18 114/4 115/2 120/21 123/11 copies [5] 53/11 175/18 256/19 258/11 126/20 134/3 137/5 138/2 149/24 164/6 copy [9] 143/14 143/18 166/5 169/20 171/15 192/16 217/15 217/15 171/16 188/14 195/22 217/17 246/1 256/8 197/1 198/13 198/14 198/23 199/3 199/6 199/8 204/8 204/12 cord [1] 281/24 core [10] 49/10 59/2 224/16 225/21 226/4 62/5 62/6 146/3 148/8 232/11 236/23 244/18 298/4 298/15 299/10 244/21 244/21 246/14 256/19 257/1 260/15 corner [3] 182/14 261/5 281/5 281/9 292/10 301/24 319/3 193/25 272/17 corporate [1] 87/13 319/19 329/21 331/10 corporation [1] 346/2 331/14 337/23 339/11 corporations [2] 66/25 343/9 council [1] 184/8 correct [36] 36/11 counsel [4] 6/7 21/14 36/22 37/13 37/14 45/1 21/17 353/12 47/12 55/22 63/3 99/23 count [24] 34/4 46/2 126/9 126/12 167/18 46/24 51/2 59/9 60/10 169/17 179/21 181/15 60/20 74/20 92/9 157/4 181/21 203/12 210/8 209/25 222/17 253/14

(12) conceptually - count

C count... [11] 258/4 278/2 278/7 289/16 289/20 290/1 290/5 290/9 299/25 321/19 321/20 counted [29] 31/25 33/24 36/8 59/10 59/15 60/6 141/16 142/13 146/23 152/3 154/6 154/9 154/12 164/8 164/8 165/18 165/24 165/24 168/23 179/19 189/14 247/4 251/6 289/24 327/24 333/12 334/7 334/8 335/17 counter [2] 60/12 256/2 counterintuitive [1] 224/14 counterparts [2] 124/23 125/1 counters [1] 255/24 counties [76] 16/6 32/5 41/10 41/21 42/18 51/4 51/6 63/14 63/16 88/18 88/21 88/25 100/5 101/7 101/11 101/24 102/7 116/22 119/15 121/4 126/14 126/25 129/3 129/13 129/20 130/1 130/4 130/9 130/15 133/7 134/3 135/22 136/11 137/21 143/7 158/4 167/25 168/10 189/18 189/20 194/25 195/6 195/11 213/20 216/23 233/6 240/9 253/5 253/9 253/12 253/23 253/24 253/24 253/25 267/1 267/1 267/1 267/3 267/8 267/18 270/20 270/21 273/11 277/11 282/8 282/20 282/21 291/10 297/8 298/17 312/10 318/16 337/15 339/5 345/11 345/16 counties' [1] 79/8 counting [7] 14/21 29/3 42/22 74/12 142/7 186/17 321/20 countries [1] 212/17 country [15] 12/5 18/15 19/7 32/16 53/23 54/2 59/14 61/12 146/11 192/6 192/6 215/16 223/3 263/5 337/17 **counts [5]** 20/5 38/13

136/14 253/20 254/1

county [130] 1/10 3/11 5/13 6/11 7/12 17/1 17/14 39/15 39/16 41/5 41/6 41/12 41/12 41/23 42/1 61/13 72/13 74/8 88/7 88/16 110/14 110/21 110/25 111/17 116/4 116/17 117/7 117/24 118/3 118/6 120/22 120/24 121/3 121/8 122/16 122/19 122/23 122/24 123/6 123/8 127/5 127/6 128/13 128/15 128/18 128/21 129/8 129/9 131/19 132/6 132/23 136/22 137/19 141/24 143/19 148/19 159/9 159/14 167/12 168/13 168/25 174/2 176/15 176/16 206/11 206/12 207/3 207/4 211/1 214/13 214/16 221/12 228/17 234/23 235/2 235/2 235/8 242/17 251/11 253/2 253/2 253/3 253/7 253/7 253/13 253/18 255/25 257/2 266/21 266/22 266/23 266/23 271/5 271/8 271/13 277/8 282/19 286/25 296/5 297/7 298/20 301/2 304/25 317/18 317/22 318/5 320/25 322/18 324/17 324/18 324/19 327/10 328/20 332/20 333/5 333/10 337/17 338/20 339/7 339/23 339/23 344/14 345/13 345/14 347/5 347/10 348/2 348/5 352/4 353/3 county's [1] 137/24 **couple [26]** 7/14 105/6 106/6 110/12 135/13 139/13 148/24 183/14 192/12 215/18 234/14 236/8 236/9 240/22 249/24 253/14 254/16 257/3 279/10 292/12 292/14 296/17 308/11 316/4 317/6 337/3 course [26] 8/4 8/25 10/23 13/8 18/6 18/21 38/8 43/12 50/9 53/14 72/18 78/4 93/19 95/3 106/19 108/9 118/9

118/12 144/19 207/16

218/6 240/20 257/9

court [11] 1/7 9/25

269/21 319/21 339/4

10/4 10/6 10/9 12/11 12/12 110/13 143/19 346/5 353/18 courtesy [1] 185/14 **courts [3]** 18/23 114/6 114/14 cover [2] 65/1 99/21 covered [1] 100/23 covers [2] 112/14 112/18 coworker [3] 174/12 176/9 190/24 coworkers [1] 15/17 crash [1] 312/1 crazy [2] 135/25 138/6 create [9] 90/21 213/1 216/25 216/25 217/8 217/14 218/2 255/10 284/22 created [5] 19/10 77/14 217/9 220/22 241/18 creates [4] 147/20 147/21 214/1 241/12 creating [8] 20/15 20/17 43/15 50/20 67/1 246/11 279/15 280/1 creation [2] 295/18 322/2 creations [2] 321/6 321/7 creative [1] 132/13 credentialed [2] 209/5 215/5 credentials [1] 277/9 creep [1] 223/6 crisis [1] 83/8 criteria [1] 59/1 critical [8] 20/25 53/3 53/22 93/8 93/21 146/8 189/12 351/8 critically [1] 32/13 Cross [2] 3/18 7/14 crossing [1] 52/5 crowd [1] 9/8 crucial [1] 62/3 cure [1] 336/17 curiosity [1] 228/14 current [31] 19/9 19/13 36/4 37/12 43/9 75/1 93/10 107/10 107/10 107/11 124/18 126/18 132/2 134/9 135/20 137/5 141/14 142/19 143/10 147/1 150/17 174/16 212/2 267/24 326/12 331/9 339/18 340/4 344/23 350/6 351/6 currently [17] 40/13 111/4 111/22 118/23 124/2 126/18 132/6 133/22 146/10 167/20

250/2 297/5 305/6 321/2 curves [1] 151/11 custody [1] 332/3 custom [2] 229/10 275/16 customer [7] 207/12 208/4 267/11 295/20 295/23 295/25 297/22 customers [11] 147/1 176/6 236/3 249/9 262/18 265/14 267/11 297/2 297/23 304/23 305/2 customizable [1] 182/2 Dave [10] 330/16 customizations [1] 305/3 cut [6] 148/24 209/15 214/23 221/1 227/22 319/23 cut-and-drop [3] 209/15 221/1 227/22 cutbacks [1] 12/7 cuts [2] 225/19 225/22 cutting [1] 68/14 cutting-edge [1] 68/14 cyber [32] 49/2 49/14 49/25 50/1 50/6 50/16 51/11 51/16 51/25 52/8 52/20 52/22 53/5 54/5 54/8 56/7 63/24 64/24 66/9 79/25 80/4 80/17 82/20 138/10 140/22 141/1 141/5 142/4 142/11 295/6 304/2 322/3 cyber-security [7] 49/2 53/5 54/5 54/8 56/7 141/5 322/3 Cynthia [7] 141/23 142/17 203/8 204/5 289/12 290/18 314/7 Cynthia's [1] 290/16 dad [1] 183/15 daily [1] 83/22 **Dallas [1]** 167/12 damage [1] 49/6 **Dana [9]** 343/25 343/25 344/2 344/2 344/8 344/13 344/16 346/8 346/22 danger [1] 315/24 dangerous [2] 20/18 38/15 Darin [1] 110/13 dark [1] 106/25 darker [1] 206/15 darn [1] 54/22 dashboard [2] 165/21

217/13 235/21 235/24 166/10 data [23] 30/9 52/4 53/16 143/7 151/25 153/2 153/5 199/20 218/3 231/2 231/19 252/5 252/8 274/19 277/14 277/20 278/9 279/3 284/19 284/22 298/21 316/13 316/16 database [5] 153/22 217/14 298/16 298/18 298/22 databases [1] 326/20 date [3] 181/25 288/9 316/19 332/12 332/12 332/15 332/19 332/21 334/11 334/16 335/23 335/25 David [2] 335/25 335/25 **Davis** [1] 286/11 Dawgs [1] 21/24 day [61] 5/3 8/21 10/10 12/8 25/25 27/16 29/9 30/6 34/18 35/4 61/1 61/2 66/22 66/22 76/11 78/8 78/24 79/19 81/15 109/4 131/9 163/15 166/10 180/20 187/22 195/17 197/9 200/1 202/4 211/4 213/9 213/15 214/20 240/1 240/5 241/1 257/9 257/16 258/5 258/5 292/25 294/22 295/19 296/10 297/14 298/2 303/20 304/21 309/22 311/19 324/21 325/22 325/22 325/23 328/1 333/17 336/15 347/12 347/15 347/25 353/15 days [7] 31/5 46/1 107/21 115/19 148/24 336/19 347/18 dazzle [1] 234/3 **deadline** [1] 125/16 deaf [2] 93/11 93/12 deaf-blind [1] 93/11 deal [11] 27/15 84/3 127/11 129/17 141/9 166/21 214/7 239/24 248/10 248/12 250/12 dealing [5] 31/22 31/23 116/6 121/18 135/13 dealt [2] 179/25 189/8 **dear [1]** 10/6 debate [1] 76/23 **Debbie [5]** 317/21 317/23 317/24 318/3 318/4 decade [2] 49/25 78/4 (13) count... - decade

258/13 258/23 259/4 151/17 163/24 167/25 108/14 111/20 111/22 deployments [1] D 151/7 211/9 312/4 212/14 259/25 262/23 269/15 195/10 200/23 212/18 Decatur [2] 330/25 demand [11] 67/19 deposit [1] 62/11 269/19 271/24 272/10 213/20 213/21 213/22 331/1 114/14 160/24 161/1 **Depot** [1] 311/21 278/24 279/18 285/11 216/13 218/21 219/9 decentralized [1] 169/10 169/24 214/10 depth [1] 273/24 291/7 291/14 291/21 220/20 221/11 222/13 351/9 271/25 348/17 348/22 deputy [2] 86/10 121/1 299/15 302/14 305/11 223/20 226/1 229/19 decertified [1] 343/3 349/1 305/22 306/2 306/9 231/4 238/14 240/22 deri [1] 88/1 decide [15] 34/17 306/16 306/17 307/16 241/24 245/8 248/20 demand so [1] 160/24 deri-fit [1] 88/1 34/23 39/14 46/6 72/7 308/5 309/20 309/25 252/18 253/4 253/4 demands [1] 283/7 described [1] 194/6 139/6 164/2 167/1 310/10 311/1 311/25 258/20 261/19 263/4 demo [1] 153/21 deselect [3] 155/18 178/18 195/6 195/15 democracy [11] 13/7 183/6 308/22 329/24 349/4 266/9 269/13 272/13 222/11 270/18 284/2 16/17 18/4 53/24 55/3 design [18] 14/10 devices [22] 60/25 273/11 273/13 274/1 284/3 55/10 57/6 57/23 29/23 30/20 31/18 58/3 61/6 61/14 62/3 62/18 275/7 282/20 283/6 decided [3] 69/13 176/11 298/4 340/20 62/20 71/16 81/8 147/6 63/23 90/19 93/7 201/1 289/3 290/6 292/12 268/16 342/22 147/20 219/2 228/1 Democrat [4] 190/21 213/3 213/6 213/12 292/14 297/6 297/12 deciding [2] 34/22 228/7 228/7 228/9 240/23 257/10 258/25 301/24 305/17 305/18 285/21 286/8 286/15 347/8 229/9 269/5 298/23 259/17 300/4 310/13 **Democratic** [2] 188/21 305/23 311/14 331/24 decision [6] 129/24 324/24 designed [10] 19/10 311/16 311/24 312/3 differential [1] 69/14 164/10 172/13 238/18 Democratic/Republic 29/22 63/20 63/21 329/21 differently [3] 84/7 268/6 338/6 **[1]** 188/21 94/23 147/5 151/8 **DHS**[1] 304/16 109/8 163/24 decisions [8] 53/19 **Democrats [1]** 175/22 219/7 241/12 241/13 dial [1] 247/2 differs [1] 74/20 126/5 146/20 150/17 demonstrate [4] 59/9 desirable [1] 137/25 dial-up [1] 247/2 difficult [11] 73/7 157/12 260/19 263/10 dialogue [1] 193/16 60/5 181/1 226/4 desire [2] 18/5 67/18 107/2 107/4 133/11 335/16 did [54] 7/17 14/11 demonstrated [3] desk [5] 169/13 198/13 139/17 182/25 233/16 deck [1] 317/12 240/18 250/6 339/17 211/7 269/17 295/25 24/17 24/18 27/13 47/7 263/3 279/2 347/16 decommission [1] demonstrating [4] detail [5] 3/14 36/4 96/9 102/21 105/9 347/23 350/11 difficulties [5] 128/5 180/23 187/13 191/6 52/23 211/15 351/18 114/14 119/22 122/3 **dedicated** [3] 13/4 127/13 129/1 135/3 250/1 detailed [2] 52/22 53/6 207/19 233/14 305/16 23/11 296/23 demonstration [9] details [3] 7/22 67/25 136/10 136/23 156/22 307/3 dedication [1] 5/24 335/2 162/7 162/8 162/17 144/18 144/23 145/21 **difficulty [1]** 105/17 deeper [2] 164/21 detection [3] 49/9 52/1 173/10 180/1 180/2 196/16 241/15 260/13 digit [1] 63/15 212/20 187/12 188/4 198/18 264/19 268/23 296/21 52/2 digital [39] 57/23 60/3 **Defcon [1]** 331/14 demonstrations [5] determination [1] 199/14 207/12 208/4 63/18 86/24 146/13 defend [1] 24/22 2/16 11/10 144/10 124/15 228/14 228/15 228/16 158/19 173/21 174/24 defendant [1] 25/1 144/16 238/15 determine [10] 15/2 229/7 232/17 236/22 178/16 186/23 186/23 **defending [1]** 18/3 **Denice** [3] 324/9 32/1 34/1 63/25 136/24 245/20 249/10 251/16 188/6 190/13 197/10 defense [4] 21/21 324/10 324/10 140/7 163/19 179/7 253/10 254/4 262/25 197/11 200/25 201/19 58/14 58/15 273/24 density [1] 227/3 252/6 302/5 282/2 294/11 303/9 221/1 228/21 236/25 define [1] 299/2 305/4 312/21 322/17 **Denver [1]** 304/25 determined [3] 61/21 237/1 238/3 238/8 defined [3] 329/15 328/17 329/7 329/12 **Department** [11] 6/7 113/10 114/7 238/10 238/11 256/3 345/19 351/7 50/2 50/5 51/14 52/16 determining [1] 325/16 330/23 331/11 336/3 256/8 256/18 260/11 definitely [7] 95/12 didn't [20] 46/2 47/8 64/18 64/25 65/10 79/6 **deterrents** [1] 325/16 260/22 261/4 265/7 110/18 129/25 138/20 86/16 119/9 develop [1] 67/22 47/13 60/4 63/9 68/16 300/9 302/15 316/16 140/11 265/18 341/23 depend [4] 129/5 227/3 developed [6] 68/15 90/1 90/2 90/3 96/10 322/1 326/9 326/13 definition [2] 223/9 227/5 263/11 68/15 216/9 216/15 96/13 131/23 156/21 326/22 343/15 depending [8] 56/12 304/3 304/23 182/20 183/3 185/15 digitally [2] 159/21 defraud [1] 70/2 131/2 154/24 164/2 **developers** [1] 86/18 196/25 246/8 250/23 321/16 degradation [1] 263/16 developing [3] 19/1 248/23 259/1 286/4 323/8 digitally-printed [1] degree [5] 17/11 21/23 291/4 50/15 55/18 **Diebold** [1] 333/4 321/16 21/25 88/4 213/2 depends [9] 61/7 81/15 development [4] 83/7 Diebold's [1] 332/25 dilution [3] 23/21 24/1 degrees [1] 138/12 161/11 163/22 167/9 212/8 229/21 295/17 difference [4] 129/19 42/8 **Deirdre [2]** 167/11 195/3 312/13 315/6 developmental [4] 6/8 165/7 221/6 288/11 dinner [1] 320/17 255/22 315/17 direct [4] 13/9 203/11 87/16 88/6 95/14 differences [3] 23/9 **DeKalb [5]** 17/1 17/13 depicts [2] 206/15 device [58] 20/7 32/20 203/22 309/19 75/10 228/10 253/24 338/20 353/3 207/11 62/9 91/4 150/22 different [75] 5/4 16/6 direct-report [1] **Delaware [1]** 249/15 deploy [1] 207/25 162/12 188/1 201/16 39/21 40/19 47/1 54/14 309/19 deliberations [1] 53/9 deployed [6] 61/13 209/10 209/12 213/7 58/17 78/10 81/14 directing [1] 203/11 deliverability [1] 174/10 209/10 210/2 214/8 220/16 240/15 82/20 82/22 90/22 direction [3] 221/8 261/13 213/8 329/6 241/1 241/6 241/9 94/12 94/20 109/25 226/1 353/6 delivered [1] 28/14 241/9 241/12 242/11 113/3 119/16 123/7 directions [1] 204/1 deploying [1] 75/6 delivers [1] 297/13 deployment [3] 217/12 242/22 246/3 247/10 129/13 141/7 141/17 directly [7] 71/8 272/6 **delivery [7]** 91/20 230/11 330/5 252/18 252/19 257/14 141/18 149/14 151/6 307/8 307/11 317/5

333/15 D disenfranchise [1] directly... [2] 335/18 102/9 343/22 disenfranchised [5] director [26] 6/2 6/11 13/6 16/16 115/20 12/3 41/25 76/21 86/10 115/23 203/13 87/19 87/20 88/5 116/5 disk [1] 143/1 117/22 118/23 121/2 dismiss [2] 337/1 122/20 122/21 145/10 346/7 174/1 176/15 206/9 dismissed [1] 346/6 206/10 208/20 208/24 disparage [1] 27/4 295/14 296/13 297/18 disparate [2] 42/12 347/4 42/22 directors [4] 48/22 display [1] 186/19 50/25 50/25 52/14 displayed [6] 63/19 disabilities [49] 6/8 64/1 241/18 290/2 20/1 43/22 84/23 85/4 307/17 310/17 85/6 85/18 87/10 87/15 disproportionate [1] 87/17 87/23 88/6 88/12 130/8 89/3 89/9 89/21 90/8 disproportionately [1] 91/5 91/10 91/12 91/13 15/19 92/5 92/12 92/14 93/2 disregard [1] 130/7 93/22 94/25 95/14 disseminate [1] 124/5 96/25 98/19 99/1 99/5 **disserted** [1] 15/5 99/13 100/16 100/17 distance [1] 197/25 104/5 104/22 105/22 distinguish [1] 162/2 112/15 112/18 161/21 distinguished [1] 174/19 175/11 175/11 11/18 176/12 187/17 231/25 distinguishes [1] 241/21 306/12 149/13 disability [16] 91/7 distributed [2] 54/1 99/3 99/17 103/3 217/11 104/14 104/18 105/13 **District [3]** 12/12 12/13 109/7 109/8 109/24 328/23 110/1 115/20 187/4 districting [1] 24/4 221/25 223/2 307/21 districts [1] 218/2 disability-related [1] diverse [1] 11/2 307/21 division [4] 118/23 disabled [10] 91/17 118/24 119/1 123/23 100/10 103/16 105/8 **DNA [1]** 146/6 108/10 111/5 111/10 **do [310]** 3/12 3/25 5/2 111/12 149/16 308/2 7/16 8/15 9/25 15/20 disaffected [1] 340/15 22/13 23/1 23/1 23/9 disassembly [1] 353/9 25/15 25/21 26/8 26/16 discover [1] 322/6 26/16 26/18 26/22 27/5 discrepancies [1] 27/16 28/24 30/8 33/12 32/10 33/19 34/22 34/23 discrepancy [1] 34/23 35/3 37/2 37/6 250/10 37/21 38/13 39/17 discretionary [1] 119/2 39/23 40/4 42/18 43/9 discrimination [2] 12/6 44/15 44/17 48/11 42/14 48/14 48/25 53/5 54/13 discriminatory [1] 43/1 54/15 54/22 56/14 discuss [3] 5/20 56/20 57/11 59/1 60/5 130/24 351/17 61/18 63/6 63/18 63/22 discussed [1] 111/19 63/22 65/12 65/23 discussing [2] 40/9 66/12 67/5 68/1 69/5 145/19 70/5 70/13 74/14 75/21 discussion [13] 21/3 76/2 76/12 76/13 77/6 36/2 58/7 58/19 62/16 77/11 77/12 77/23 70/17 71/3 86/4 108/21 77/24 78/13 81/7 82/22 125/23 151/5 167/15 82/23 84/1 84/8 88/14

89/7 95/23 97/11 97/20 102/1 102/9 103/22 105/24 107/19 108/5 111/22 113/21 115/11 115/18 118/10 120/13 121/5 121/13 122/24 123/5 126/9 127/2 127/10 127/15 127/18 128/6 128/13 129/6 129/12 129/14 130/14 130/15 131/10 131/12 131/12 132/6 132/13 134/2 134/6 135/18 136/12 136/19 137/17 138/15 138/22 139/4 139/7 142/19 148/11 148/15 148/15 151/7 151/21 152/21 153/6 155/19 156/11 159/16 159/22 161/18 162/16 163/19 163/24 164/13 164/13 165/10 165/10 167/21 168/19 170/1 170/20 171/8 171/17 173/23 174/8 177/23 179/14 180/1 180/7 180/17 180/22 181/1 181/17 182/13 185/10 187/25 188/6 188/24 188/24 189/1 189/14 189/17 189/22 189/22 190/23 191/2 191/18 192/21 193/10 194/11 194/16 194/21 194/22 196/15 197/15 197/18 197/19 197/22 198/21 198/25 199/5 201/23 203/6 203/24 206/6 207/15 208/5 209/24 212/4 214/18 214/20 218/12 221/5 224/16 225/14 225/25 226/17 227/25 228/13 230/22 231/8 231/10 232/21 232/23 234/6 236/17 238/2 238/6 239/6 239/18 242/24 243/23 244/3 244/24 245/16 246/17 246/25 249/3 250/10 251/2 251/5 253/10 255/6 256/25 257/3 257/19 257/21 258/22 260/15 262/2 262/25 266/14 267/21 271/12 271/17 273/12 273/18 275/23 276/1 276/8 277/24 277/25 280/8 282/2 283/25 284/17 284/21 286/5 287/19 288/10 289/6 290/7 291/20 292/1 300/3 300/9 300/15

300/22 301/4 302/24 303/23 305/13 307/7 307/8 308/3 311/24 311/24 314/1 315/6 315/11 316/24 317/6 317/8 317/10 317/12 318/23 318/24 319/7 322/3 322/7 322/11 322/12 323/14 328/8 328/9 330/18 333/20 334/12 337/7 337/11 339/3 340/10 340/12 340/22 341/16 342/15 342/21 346/1 349/18 doctor [4] 202/11 202/11 227/14 321/13 doctor's [1] 100/18 doctorate [1] 17/11 documentation [1] 223/6 does [43] 20/18 24/3 27/17 29/6 43/19 44/14 46/14 56/4 58/24 65/9 81/5 98/18 126/13 154/16 160/9 162/21 163/6 167/17 168/21 174/17 182/7 185/16 188/1 204/16 207/14 218/24 226/1 239/1 242/14 251/14 256/2 259/4 260/3 263/11 266/5 284/19 285/18 287/20 293/9 293/25 297/17 324/21 339/3 doesn't [26] 14/11 19/20 26/12 29/7 29/9 31/15 38/6 39/18 42/25 46/24 54/20 93/19 97/7 112/16 115/22 133/7 177/20 177/21 183/23 184/1 186/13 193/3 193/4 202/15 231/7 340/3 doing [23] 43/11 49/2 56/18 58/20 70/22 79/23 81/24 135/1 141/3 189/7 189/12 193/20 210/19 210/21 214/24 215/4 229/20 256/11 279/15 305/6 339/5 339/11 347/13 dollar [4] 177/22 177/25 186/6 186/12 dollars [8] 227/19 270/16 282/13 312/18 323/7 323/7 323/11 329/21 **Dominion [9]** 2/22 6/22 113/4 294/17 295/4 295/8 296/6 296/13 296/22 **Dominion's [1]** 295/5

don't [127] 8/7 15/6 25/14 27/15 29/10 31/21 31/22 32/4 33/21 34/5 34/19 35/4 35/23 36/7 37/13 39/14 39/22 44/23 59/22 61/16 64/11 74/13 74/25 79/23 81/6 95/7 95/7 95/17 97/4 100/13 100/25 101/8 101/13 102/11 102/17 104/10 105/11 113/17 115/11 115/17 127/5 127/7 128/14 132/21 132/24 132/25 134/14 136/7 137/23 138/14 139/22 141/7 144/1 151/7 151/12 155/13 165/20 168/14 168/18 171/8 174/5 175/7 178/9 184/15 185/13 189/10 190/15 194/11 194/22 195/1 196/3 198/19 199/9 200/10 201/20 206/14 207/23 208/7 212/16 214/10 216/5 218/1 222/4 222/6 229/10 232/3 237/17 238/22 239/12 241/21 241/23 246/15 248/2 265/1 266/15 270/12 273/3 276/2 276/22 284/7 286/11 287/8 287/12 288/25 290/2 291/23 308/15 311/20 312/20 318/25 319/7 320/16 320/24 322/11 329/6 329/23 333/7 333/20 333/23 335/9 340/1 340/5 340/6 340/13 340/16 342/5 342/9 **Donald [3]** 73/16 178/11 179/15 done [40] 18/15 40/3 41/24 41/25 49/7 55/12 59/23 132/18 148/4 153/11 155/23 157/12 162/10 168/2 174/15 185/1 200/15 200/21 201/12 206/20 245/12

259/7 262/6 262/16

263/5 270/14 303/8

303/22 304/25 319/16

321/13 321/23 324/22

327/21 328/9 337/21

337/22 337/24 340/8

donkeys [3] 208/3

door [6] 73/1 144/5

259/5 259/15 259/19

208/14 337/25

347/14

driver's [4] 28/21 154/3 165/22 197/25 D 181/11 181/13 203/21 door... [1] 276/6 drives [6] 152/20 doors [2] 9/13 309/22 190/11 190/12 190/13 **double [3]** 9/13 63/15 277/21 298/5 driving [1] 203/25 double-digit [1] 63/15 drop [3] 209/15 221/1 double-up [1] 81/1 227/22 doubt [2] 60/20 74/24 dropped [1] 214/24 348/23 Doug [2] 4/21 7/16 drops [3] 225/19 down [49] 10/1 10/5 225/23 306/9 10/9 10/13 40/23 72/13 dry [1] 319/23 79/14 80/4 80/16 84/9 **DS200 [16]** 236/12 94/14 116/24 127/14 236/25 239/7 239/21 135/9 148/18 148/24 240/18 241/3 242/9 150/24 151/5 152/14 247/1 247/6 252/23 158/13 181/20 183/9 253/11 253/16 253/18 339/19 188/4 205/17 211/6 256/6 259/19 259/23 214/22 217/11 233/21 **DS450 [2]** 253/19 234/19 244/2 244/15 256/7 257/18 258/7 258/9 **DS850 [3]** 253/25 259/9 259/13 266/18 61/2 133/25 165/11 253/25 256/7 266/20 269/8 271/9 dual [2] 301/15 301/25 197/8 202/4 213/9 275/9 276/25 277/1 duct [1] 132/15 299/5 309/23 311/19 due [1] 45/4 286/25 299/3 340/9 336/14 339/21 353/5 Dufort [3] 317/25 320/5 download [5] 53/10 320/9 190/7 190/8 199/24 **Duke [1]** 12/21 278/6 349/5 dumped [1] 194/2 downloaded [3] 53/21 **Duncan [1]** 7/16 190/5 190/12 **Duo [1]** 269/18 348/23 downtown [1] 213/23 duplicate [1] 180/12 **dozen [1]** 317/6 during [12] 8/20 10/10 **dpi [1]** 154/3 17/4 83/7 123/19 **Dr [10]** 78/21 200/12 125/20 165/9 174/4 **easiest [3]** 56/19 249/20 249/22 251/20 197/4 197/6 198/12 164/14 321/4 267/6 283/3 287/16 347/11 easily [1] 115/4 295/14 313/9 easy [12] 69/22 72/7 **Dustin [8]** 176/4 176/4 **Dr. [2]** 6/2 267/8 187/1 189/16 190/24 Dr. Phil [1] 267/8 191/18 192/24 193/23 Dr. Wenke [1] 6/2 **Dustin's [5]** 190/19 draft [1] 18/17 191/4 191/9 192/10 344/21 drafting [1] 113/12 Eating [1] 82/19 193/10 drag [1] 183/8 DuVal [4] 338/15 341/4 **EBD** [1] 112/1 drags [1] 183/11 341/4 341/5 economic [2] 92/6 dramatically [1] 81/15 129/14 dwarfs [1] 335/6 draw [1] 222/24 **Dwayne [4]** 264/8 drawbridge [1] 274/4 264/22 282/5 283/1 drawing [1] 71/6 economy [1] 325/13 **Dwight [1]** 191/14 **DRE [15]** 135/8 137/3 169/8 262/20 262/22 **Ed [5]** 67/12 206/8 265/7 269/20 271/1 e-mail [3] 111/21 279/7 283/22 284/1 111/23 112/7 299/17 318/8 331/20 e-mailed [1] 300/20 68/22 120/4 349/5 **e-poll [4]** 290/22 307/8 editor [1] 22/1 **DREs [5]** 90/13 123/2 307/12 307/15 **educate** [1] 139/15 262/18 270/24 275/6 **EAC [2]** 151/4 211/24 education [9] 86/24 drive [11] 1/10 32/11 **EAC-funded** [1] 151/4 102/4 119/1 120/17 185/23 189/21 190/3 each [37] 8/23 8/25

11/21 20/2 38/23 57/1

73/17 110/21 117/19

125/7 126/14 144/17

190/4 190/6 239/22

driver [1] 190/20

239/22 274/11 278/4

121/1 129/12 137/24 212/16 216/8 217/14 effect [1] 62/22 218/23 218/24 244/2 effective [4] 81/25 82/1 244/12 244/13 245/19 139/7 208/13 245/19 246/18 246/19 effectively [1] 67/7 258/4 290/13 298/20 efficiency [1] 291/5 308/25 310/10 310/19 efficient [1] 298/9 318/21 329/19 338/5 efficiently [1] 59/23 effort [4] 74/24 140/6 earlier [21] 35/23 77/3 215/18 223/10 85/19 100/13 128/10 efforts [1] 55/25 129/18 134/25 186/15 eight [6] 86/13 176/18 188/16 194/21 196/19 228/23 310/20 337/24 203/11 212/14 244/5 348/10 244/10 247/22 278/12 eight-and-a-half-by-ele 280/19 284/25 292/24 ven [1] 310/20 **EIISAC [3]** 50/20 51/7 early [36] 12/7 18/20 51/15 25/16 33/8 33/12 33/15 Einstein [1] 51/24 34/8 34/10 34/16 34/19 **Eisenhower [2]** 191/14 34/20 35/9 35/20 43/17 191/16 either [15] 34/17 60/17 61/1 63/21 111/10 213/14 214/14 240/25 160/23 183/21 210/7 219/1 284/4 293/1 347/9 347/17 347/17 299/14 308/16 316/2 347/20 347/23 348/7 317/14 348/11 348/15 348/23 elderly [2] 85/20 111/10 **elect [1]** 336/22 early-voting [2] 165/11 **elected [9]** 4/15 4/19 ease [2] 70/10 237/2 4/22 18/11 22/12 106/4 **easier [5]** 37/19 57/2 206/23 320/23 328/5 107/24 148/14 321/10 election [245] 2/20 4/23 5/1 5/19 6/5 6/21 14/17 18/11 18/13 19/3 19/6 19/11 19/11 19/17 19/23 21/11 21/12 21/17 25/24 28/15 105/16 128/3 150/25 173/19 201/23 240/6 31/22 33/25 34/18 35/4 268/17 268/23 299/2 35/11 38/9 39/20 39/21 43/13 43/15 44/21 44/22 44/23 44/24 48/10 50/8 52/19 54/2 54/4 56/9 56/10 58/12 58/14 59/5 59/6 61/1 **economical** [1] 189/19 61/2 64/21 67/8 69/4 economist [1] 49/24 69/9 70/19 74/8 75/20 77/4 77/16 78/11 79/6 ecosystem [1] 56/21 79/8 83/17 86/18 90/1 103/22 105/12 110/14 208/20 208/23 219/6 edge [4] 68/11 68/14 110/21 110/22 111/8 111/8 112/1 113/20 114/7 114/21 119/23 121/21 122/7 122/15 133/24 134/13 137/2 137/18 141/24 142/2 143/17 147/18 150/5 139/14 213/18 214/3 252/8 300/10 152/1 152/11 152/17 152/18 155/11 155/11 educational [1] 102/1 157/10 160/17 161/11 **Edwards [4]** 120/22

163/16 163/17 163/18 165/1 165/3 165/9 167/12 168/19 172/16 176/5 177/15 177/18 182/17 187/21 187/21 188/11 188/18 189/1 189/2 189/5 189/7 190/4 190/10 190/18 190/21 192/17 195/17 197/8 200/1 202/3 202/8 210/10 210/11 210/14 210/17 210/18 210/24 211/2 211/3 211/4 211/4 211/8 211/22 213/9 213/15 214/12 216/3 216/19 217/5 217/11 217/17 217/25 217/25 218/3 218/6 218/6 223/12 229/24 230/3 230/10 233/20 234/1 234/10 235/8 235/13 235/16 236/10 239/5 241/1 248/2 248/3 251/11 251/12 252/4 252/4 252/6 253/2 253/15 256/10 256/11 256/12 257/8 257/16 258/10 259/14 259/18 263/8 264/12 266/6 269/1 269/16 275/3 276/17 278/20 278/23 279/11 279/19 281/23 285/4 291/7 291/11 295/17 295/19 295/19 296/16 296/16 297/11 297/14 298/5 298/15 300/24 303/2 303/10 304/15 304/17 315/13 316/18 316/19 320/22 322/9 325/22 325/23 326/24 331/12 333/17 336/21 337/13 338/7 338/10 339/16 339/17 340/18 340/23 341/20 342/4 344/23 344/25 345/3 345/20 347/11 347/13 347/15 347/25 349/25 351/10 351/15 **election's [1]** 168/16 96/7 96/8 98/23 101/12 | **Election-360 [2]** 211/2 211/3 election-day [8] 61/1 195/17 213/15 295/19 297/14 325/22 325/23 347/25 election-integrity [1] 349/25 election-night [2] 56/9 210/24

election-related [2]

21/11 316/18

E elections [88] 1/1 3/10 6/11 13/25 21/14 27/16 41/24 50/12 50/19 50/20 50/24 50/25 51/16 52/12 52/14 53/12 54/7 55/3 55/21 55/23 56/16 57/1 58/9 60/15 63/12 65/7 66/10 70/3 84/4 86/19 98/25 103/10 103/14 108/1 116/4 116/9 117/23 118/2 118/4 121/4 127/1 127/14 128/14 129/6 130/14 130/16 151/14 174/2 176/19 192/4 192/5 206/16 206/17 206/18 206/21 207/9 207/10 207/17 207/20 226/12 230/6 233/21 235/18 238/6 239/19 265/3 266/5 266/7 268/8 268/14 275/7 295/15 295/21 296/25 303/3 314/22 314/23 318/6 325/25 326/5 327/17 331/5 335/9 337/5 337/12 345/14 347/4 348/5 elections' [1] 56/6 **electoral [1]** 106/12 **electric** [1] 91/20 electricity [1] 333/7 electronic [24] 14/21 15/1 25/10 28/23 36/13 69/21 70/8 102/5 108/14 111/19 111/21 112/4 180/14 187/8 187/10 209/2 209/3 219/7 242/5 284/24 285/8 293/22 294/1 309/19 electronically [3] 192/22 194/1 229/1 elements [2] 298/25 316/20 elephants [2] 208/6 337/25 eleven [2] 228/23 310/20 eligible [9] 17/7 18/14 23/12 25/19 28/16 29/6 46/25 47/5 307/18 eliminate [5] 30/9 54/17 54/18 102/17 192/21 eliminates [2] 42/21 293/20 eliminating [2] 30/7 272/4

Elizabeth [11] 16/20

16/21 17/9 17/15 17/18 21/5 35/24 37/15 43/3 87/18 88/14 else [21] 10/8 31/2 46/14 46/24 47/7 99/16 110/5 112/25 115/19 131/15 143/23 152/11 180/3 183/4 183/6 243/16 248/25 254/14 265/2 274/11 317/19 Emanuel [1] 235/1 embed [1] 231/2 **embedded [1]** 255/14 emergencies [1] 32/24 **emergency [3]** 65/10 264/21 346/4 emerging [1] 68/11 Emory [1] 17/11 emotional [1] 83/24 emphasis [1] 50/19 **emphasize** [1] 173/18 employ [1] 257/22 employed [1] 20/12 **employee [1]** 353/12 **employees [2]** 235/21 297/2 employer [1] 95/5 empower [1] 17/7 empowering [2] 18/4 50/16 emulate [1] 75/8 enable [1] 91/20 enables [1] 99/8 encoding [1] 335/18 encountered [1] 109/13 encourage [19] 8/15 51/6 53/8 55/20 56/24 67/16 76/16 96/21 97/20 103/3 103/11 104/25 107/19 108/5 204/2 325/18 340/18 341/23 347/6 encourages [1] 94/17 **encrypted** [3] 209/7 239/22 277/21 **encryption [3]** 174/25 190/3 278/8 end [47] 8/24 10/24 15/24 24/9 26/9 32/1 36/1 36/7 43/8 48/17 102/24 121/16 122/1 148/14 163/15 165/4 165/14 184/25 202/6 226/9 227/21 227/21 229/23 229/23 232/13 238/4 238/22 239/5 239/11 239/15 244/11 248/22 248/23 253/15 258/10 269/7 298/1 299/14 299/16 302/16 303/20 304/21 305/9

309/22 311/19 325/21 347/7 ends [2] 63/4 143/22 **enemy [4]** 71/24 76/10 76/18 117/1 enfranchised [1] 347/11 engage [5] 11/24 66/13 86/4 88/10 104/13 engaged [3] 17/6 18/11 215/23 engine [2] 151/18 298/23 **engineer [1]** 87/2 engineering [5] 80/13 87/4 297/19 297/20 298/1 English [7] 41/7 97/6 97/22 97/24 98/2 98/9 222/11 English-speaker [1] 222/11 English-speaking [3] 97/22 98/2 98/9 enhance [3] 93/1 95/2 104/4 enhancement [1] 93/5 enhancing [1] 304/13 enlarge [1] 204/17 enormous [1] 208/16 enough [9] 22/3 90/18 114/16 127/6 127/7 131/24 175/13 343/12 348/9 **ensue [1]** 61/10 ensure [10] 16/14 18/12 85/7 85/11 86/19 91/9 157/6 191/25 223/22 231/18 ensures [1] 225/14 ensuring [7] 13/4 20/1 20/2 20/4 20/8 20/24 85/8 entail [1] 31/9 enter [7] 30/8 89/2 125/12 183/25 188/14 293/15 307/1 enterprise [2] 169/18 295/5 enterprise-wide [1] 295/5 entertaining [1] 123/3 entire [15] 11/12 20/11 75/6 77/16 98/7 151/12 153/24 154/2 175/7 271/19 298/5 303/3 303/15 304/2 328/1 entirely [5] 50/24 61/14 61/16 235/18 236/15 entities [3] 50/14 73/22 entitled [3] 1/6 41/17

102/16 entity [2] 87/8 100/1 envelope [1] 179/11 **environment [7]** 53/20 74/11 75/1 81/13 172/8 212/5 289/16 environmental [2] 87/2 87/4 environments [1] 312/2 **envisioned [1]** 214/12 equal [7] 20/8 85/7 85/9 85/12 85/17 98/15 98/17 equally [1] 19/25 equipment [42] 126/16 127/8 127/16 127/25 129/10 130/3 131/25 132/4 137/22 138/18 139/21 153/9 187/23 201/7 207/25 208/2 214/4 227/21 228/10 235/7 249/8 261/24 265/24 266/15 269/2 269/3 270/22 271/6 271/15 276/17 276/20 296/15 297/14 298/2 300/5 300/21 301/7 304/11 304/22 335/4 344/23 351/2 equity [1] 67/3 Eric [2] 295/14 296/12 **erroneous** [1] 15/16 error [13] 13/16 13/19 30/7 32/12 36/8 37/24 38/7 239/4 250/7 280/24 280/25 293/20 328/4 errors [9] 13/14 13/18 14/1 14/3 14/12 16/11 30/10 210/8 218/18 **especially [10]** 13/4 15/16 56/8 83/12 94/3 94/3 253/6 262/17 301/17 342/16 **essentially [15]** 152/3 169/10 244/20 266/25 271/22 274/17 275/15 276/1 276/4 277/10 279/17 285/10 288/2 288/20 290/3 establish [2] 123/25 138/11 **estimate** [2] 194/25 282/7 **estimated** [2] 53/17 229/6 **Estimation [1]** 229/4 et [7] 57/5 121/11 217/19 217/19 218/7 220/21 220/21 Ethics [1] 12/19

evaluate [2] 124/10 164/6 evaluated [1] 351/8 **evaluating [1]** 124/18 Evans [1] 110/14 even [32] 15/13 54/8 54/17 61/8 64/1 64/2 90/23 108/22 109/9 120/8 126/25 128/1 137/6 141/8 184/6 184/8 184/14 251/17 270/22 272/15 277/11 282/3 283/21 285/16 286/9 316/1 318/11 319/4 325/6 329/2 333/15 343/1 event [6] 7/22 35/10 65/10 164/9 175/4 201/1 events [1] 156/12 **eventually [1]** 79/11 ever [12] 32/24 43/14 51/11 62/2 80/2 80/2 102/14 155/7 171/24 206/24 206/25 325/25 ever-expanding [1] 325/25 every [76] 5/3 17/7 18/12 18/14 19/11 20/5 23/12 25/1 27/5 27/16 31/13 59/6 78/24 79/10 98/24 103/8 105/10 105/12 105/15 109/6 109/7 111/8 141/4 146/22 149/10 149/21 149/24 150/2 151/22 153/12 153/14 153/17 157/8 158/24 159/17 160/22 161/6 165/23 165/24 166/2 175/21 185/17 190/13 197/7 197/9 197/9 197/9 197/11 197/11 197/14 199/2 214/20 217/20 238/9 241/17 241/19 242/2 252/3 256/9 256/12 268/4 271/5 271/5 280/7 282/16 286/24 296/14 324/21 327/23 330/6 331/19 333/11 345/5 347/19 347/19 348/25 **everybody [25]** 3/2 10/12 27/9 29/25 46/1 46/14 46/15 71/20 73/23 92/7 99/16 107/17 107/23 110/5 110/16 111/3 175/23 180/18 184/16 188/7 249/5 264/3 322/19 336/15 341/22 everybody's [4] 24/20

Ε everybody's... [3] 108/2 211/17 333/2 everyday [2] 119/5 everyone [21] 5/8 18/4 28/15 42/19 62/6 68/10 86/7 116/12 117/13 117/14 122/18 144/8 177/25 218/25 261/20 262/3 263/7 274/11 286/3 294/20 347/10 everyone's [3] 80/4 270/24 283/12 everything [24] 10/5 10/13 26/20 46/5 46/17 72/17 73/9 79/11 82/23 127/11 148/7 150/12 157/13 165/18 166/1 171/20 207/12 229/18 266/6 298/6 318/11 322/18 328/8 331/6 **everywhere** [1] 267/2 evidence [4] 26/18 274/8 274/15 278/10 evolution [2] 81/10 306/14 evolve [2] 56/3 81/11 evolves [2] 24/16 140/25 **evolving [1]** 141/2 **Exact [1]** 2/3 **exactly [17]** 2/2 31/11 36/24 40/8 76/3 142/17 170/14 232/24 238/12 271/18 272/1 280/8 281/5 281/10 310/16 320/11 320/12 examine [2] 60/2 211/4 **examiner's [1]** 76/22 **example [15]** 13/25 60/12 74/15 122/5 122/10 140/1 156/2 156/7 164/23 171/1 184/3 184/17 202/10 253/13 255/9 **examples [2]** 152/23 152/25 except [2] 266/6 334/1 **exception [1]** 150/12 excess [1] 195/7 excited [2] 252/25 253/8 exciting [3] 59/12 123/5 145/14 **exclusion** [1] 85/9 exclusionary [1] 325/7 **excuse [3]** 50/14 87/5 87/20 execute [2] 54/7 140/14

executing [2] 55/23 **exposure** [1] 55/5 295/9 executive [5] 6/2 48/22 87/19 119/10 122/20 **exempted** [2] 233/6 233/6 exercise [1] 82/19 **exercising [2]** 55/18 56/1 Exhibition [2] 1/10 3/11 exist [1] 93/19 **existence** [1] 16/1 **existing [1]** 268/15 exists [2] 212/19 252/10 exit [1] 89/3 expanding [1] 325/25 expect [1] 222/4 **expected** [1] 61/9 expecting [3] 45/9 56/1 56/2 **expended [1]** 126/11 **expending [1]** 128/18 expenditures [2] 128/15 141/21 **expense [2]** 116/20 130/3 expenses [1] 129/7 **expensive [5]** 27/2 188/3 301/12 326/1 329/23 **experience** [37] 20/9 32/3 62/20 67/1 105/17 122/25 195/25 213/15 213/16 215/9 216/11 216/14 221/16 221/19 222/2 222/3 235/22 242/8 261/18 262/17 265/19 266/1 266/19 266/21 268/7 269/20 275/8 275/10 279/7 279/7 296/3 305/10 311/25 312/19 341/12 348/10 350/4 experienced [3] 61/15 295/9 296/23 experiences [1] 109/8 **expert [2]** 58/3 345/25 **expertise [3]** 57/25 66/16 176/12 experts [7] 11/3 51/12 66/21 101/19 122/9 223/2 322/3 explain [7] 36/3 61/4 127/11 177/24 230/17 291/22 311/13 **explicitly [1]** 85/16 exploit [1] 56/19 exploited [1] 52/24 **exponential** [1] 148/25

exportable [1] 277/5

expressly [1] 353/8 **ExpressPoll [5]** 242/5 242/13 242/19 247/6 255/11 ExpressVote [18] 241/7 241/11 241/17 242/4 243/2 243/20 245/14 245/16 246/2 246/17 247/6 247/9 248/11 254/2 255/2 255/17 259/13 259/14 extra [5] 127/8 168/9 168/15 316/4 323/11 extracts [1] 301/1 extraordinarily [1] 342/16 **extremely [4]** 19/7 137/10 219/8 345/1 eye [2] 323/9 323/10 eyes [1] 336/20 face [6] 15/3 70/5 70/24 72/3 72/10 207/13 Facebook [1] 343/21 faced [1] 91/12 facedown [2] 177/20 186/14 faceup [3] 177/20 186/13 237/11 facially [1] 15/3 facilities [2] 9/12 9/15 facility [4] 3/16 4/11 7/11 210/25 facing [4] 91/14 91/22 278/21 278/23 fact [8] 19/5 45/4 45/18 55/21 61/12 63/25 74/17 131/18 factor [8] 94/19 121/7 121/12 128/24 172/17 277/3 303/17 306/24 factors [2] 54/7 304/4 facts [1] 345/2 fail [2] 61/8 62/2 failed [1] 9/24 fails [2] 62/9 62/9 failure [4] 76/14 92/16 92/17 92/18 fair [8] 1/1 3/10 12/16 14/11 18/13 69/4 192/2 338/10 Fairfax [1] 261/2 fairly [1] 5/12 faith [2] 45/16 331/4 faithfully [2] 180/12 186/17 fall [1] 116/21 fall's [1] 133/24 familiar [11] 17/24

19/13 23/19 94/5 98/4 118/7 172/6 235/14 294/6 308/10 348/1 familiarity [1] 104/1 families [1] 101/7 family [1] 264/21 fancy [2] 131/5 227/17 far [16] 12/2 12/2 82/1 100/22 117/18 127/5 128/15 160/16 160/17 229/5 240/11 247/5 267/19 297/24 314/4 319/19 fashion [1] 232/17 faster [1] 148/15 **Favato [1]** 349/13 favorite [1] 237/21 Favorito [2] 349/14 349/16 Faw [3] 335/24 336/2 336/10 faxed [1] 300/19 **FBI [1]** 304/16 fear [2] 31/19 139/11 feasibility [1] 346/20 feature [3] 192/11 239/10 325/12 features [13] 92/25 93/4 95/1 95/25 100/3 107/10 221/24 224/11 224/18 228/5 231/13 231/14 300/18 February [1] 52/10 federal [19] 48/14 51/25 52/16 64/20 65/5 85/3 85/5 85/15 86/1 90/15 98/25 115/5 127/23 133/22 179/13 211/22 215/20 215/22 346/5 Federalist [1] 21/19 **federally [1]** 87/8 federally-mandated [1] 87/8 Federation [4] 86/11 86/14 103/5 103/6 fee [2] 168/2 170/2 feed [2] 177/19 209/15 feedback [5] 223/1 268/1 268/11 268/21 308/5 feel [14] 8/22 38/17 89/21 89/23 102/11 151/19 152/10 194/14 246/7 284/10 291/4 298/10 331/3 350/24 feeling [2] 90/3 345/21 fees [1] 24/24 fellow [4] 7/14 17/12 17/13 296/10 felt [1] 78/10 **FEMA [1]** 65/9

female [2] 336/23 336/23 few [14] 11/22 38/13 88/9 143/23 145/21 146/25 146/25 152/23 156/16 167/7 220/3 260/25 283/16 321/13 fewer [1] 34/4 fewest [1] 32/15 field [4] 11/3 79/21 274/2 297/3 fields [1] 57/25 fifteen [1] 270/25 fifty [11] 16/6 32/5 100/4 121/4 158/4 194/25 226/25 227/18 270/17 282/8 312/10 fifty-nine [7] 16/6 32/5 100/4 121/4 158/4 194/25 312/10 fight [1] 119/2 fighting [2] 78/24 350/23 figure [7] 23/15 26/4 33/1 131/1 163/25 277/25 291/15 figures [3] 158/9 158/10 319/4 figuring [1] 73/2 file [1] 143/18 filed [1] 346/3 files [1] 277/6 filing [3] 56/22 180/10 192/18 fill [1] 105/10 filled [2] 160/12 301/18 fills [1] 306/1 filter [3] 154/20 299/5 303/2 final [4] 301/4 304/18 309/6 314/10 finally [7] 26/9 296/2 300/9 300/15 302/11 302/24 326/6 financial [3] 83/23 107/20 146/21 financially [3] 128/23 270/11 353/13 find [19] 26/14 26/18 45/24 56/5 58/11 75/19 76/13 81/7 84/5 84/11 130/4 133/15 151/16 189/11 200/21 201/23 223/4 264/3 319/1 finding [1] 342/10 finds [1] 100/24 fine [5] 46/10 71/6 166/9 185/19 222/6 finer [1] 210/25 finger [2] 183/16 183/21 fingers [1] 183/2

F 193/24 204/24 234/9 formal [1] 345/13 free [6] 7/11 8/22 18/13 further [3] 226/14 fleshed [1] 350/15 format [2] 217/1 217/2 53/11 133/8 194/14 288/22 353/11 finish [2] 36/23 112/23 flexibility [4] 40/17 formed [1] 172/10 FreedomVote [5] future [3] 101/2 283/6 fire [3] 127/7 128/16 172/15 283/5 284/6 former [5] 88/5 176/14 174/9 174/21 187/25 350/14 336/13 flexible [4] 15/20 189/4 182/17 190/20 324/17 195/24 196/6 firm [3] 21/8 21/9 87/13 298/9 298/22 forms [1] 271/20 FreeVotes [1] 186/8 firms [1] 87/3 fresh [2] 14/4 316/5 **G1130 [1]** 300/1 flip [4] 46/14 67/21 formula [1] 41/4 first [80] 9/19 10/18 friendly [1] 106/22 game [4] 79/19 79/21 71/21 181/6 formulate [1] 11/5 12/2 13/14 25/22 34/10 79/24 158/8 flips [1] 181/2 formulating [1] 11/8 friends [1] 96/7 36/25 48/4 48/8 49/17 floatation [1] 32/20 forth [7] 181/2 183/17 front [27] 9/21 15/9 **GAO [1]** 87/14 55/7 56/21 57/11 62/15 floating [1] 234/21 213/4 222/22 225/3 53/17 66/21 121/9 gap [3] 215/19 216/1 62/24 68/14 75/24 Flom [1] 12/15 307/24 339/25 121/16 121/23 133/6 216/2 79/19 79/19 86/9 98/21 gapped [1] 276/18 Florida [4] 12/20 65/2 Fortuin [4] 327/4 135/16 138/8 146/1 103/21 110/17 122/23 328/14 328/19 332/1 177/12 183/9 190/22 garbage [2] 25/10 159/14 172/4 131/18 144/3 145/6 focus [13] 24/2 29/22 fortunately [1] 128/21 202/6 232/5 235/6 25/11 148/20 164/25 165/1 238/17 238/19 256/8 Garcia [3] 49/20 78/23 50/14 54/23 55/9 58/22 forward [27] 4/9 4/12 165/2 165/13 165/21 342/10 268/5 269/11 269/14 73/6 125/17 235/7 5/16 5/21 6/23 9/20 167/13 176/21 180/19 241/3 300/2 304/7 20/16 21/3 44/4 44/4 272/7 278/18 302/15 **Garland [7]** 349/15 182/23 184/7 184/9 304/9 52/7 76/12 77/22 78/3 349/24 349/15 349/17 349/18 191/10 195/2 203/10 focused [7] 11/14 78/14 116/10 118/13 fronts [1] 58/17 349/18 351/11 351/21 204/3 206/1 210/14 gather [3] 229/1 270/5 20/10 50/8 56/20 57/22 123/10 128/8 130/17 frozen [1] 200/9 210/24 211/16 216/3 235/17 297/22 138/3 146/9 157/17 frustrated [1] 29/10 319/14 217/5 219/10 228/19 focuses [1] 164/4 183/14 225/2 283/5 frustrations [1] 30/14 gathered [1] 142/23 230/3 230/7 232/7 full [19] 8/2 9/16 66/20 | gave [2] 229/11 350/12 focusing [4] 49/8 318/9 240/18 240/19 241/3 56/16 238/16 240/17 forwards [1] 177/21 77/24 114/21 165/16 **Gay [2]** 122/15 122/19 243/24 249/25 254/16 geeky [1] 148/13 **fold [2]** 70/13 180/22 fought [1] 18/1 199/5 226/11 230/11 263/2 265/7 265/7 found [10] 34/11 34/14 folks [20] 3/20 5/12 237/7 240/4 247/19 gender [1] 92/6 265/10 270/3 274/5 6/15 14/8 43/22 122/7 general [19] 6/7 21/15 35/14 93/1 114/24 248/5 269/15 272/14 284/17 286/24 287/4 21/16 21/17 56/5 127/10 127/14 134/21 175/12 200/4 306/24 286/9 300/18 305/5 289/19 295/14 303/8 134/22 149/12 169/8 306/10 334/7 339/24 101/12 110/22 121/15 304/24 305/10 305/25 124/13 124/20 125/5 Foundation [1] 329/11 205/16 212/12 317/6 full-functioning [1] 314/25 336/22 336/23 125/14 125/20 140/7 326/16 329/9 333/4 founded [7] 17/25 226/11 341/17 344/20 183/20 193/18 193/24 337/7 337/21 57/21 59/11 146/2 full-metal [1] 230/11 first-time [1] 164/25 follow [7] 11/23 115/18 146/3 159/6 296/22 329/14 344/23 full-size [4] 237/7 firsts [1] 165/3 136/10 140/16 178/9 founding [2] 146/18 240/4 247/19 272/14 generally [3] 23/20 fiscally [2] 273/20 full-working [1] 269/15 293/3 315/18 198/19 204/5 324/23 284/7 generate [2] 148/22 follow-up [3] 11/23 four [14] 5/18 8/12 fully [4] 16/16 224/7 fit [6] 88/1 88/2 88/3 198/19 204/5 122/7 129/22 161/14 259/23 302/19 308/2 150/11 184/5 227/2 generates [1] 313/22 161/14 163/8 165/7 followed [2] 26/13 53/4 **Fulton [9]** 189/18 five [20] 53/2 113/4 generation [1] 90/20 174/17 186/9 208/25 following [4] 6/20 253/7 253/23 257/1 118/21 121/18 122/21 305/4 324/19 326/11 297/8 320/14 322/14 282/18 347/4 347/9 generator [1] 90/21 129/22 144/19 162/14 generic [3] 220/18 font [8] 106/20 107/1 four-card [1] 161/14 348/2 348/5 176/1 186/9 192/3 222/14 222/16 204/12 204/17 280/11 four-page [1] 161/14 fun [3] 123/2 145/14 194/10 206/17 210/12 Gentleman [1] 233/12 308/17 309/14 309/14 four-vote [1] 165/7 305/9 216/9 224/3 320/15 football [2] 79/17 fourteen [2] 88/7 88/16 Gentlemen [1] 263/20 **functional [2]** 115/4 322/20 322/21 348/3 80/25 325/16 **George [6]** 153/16 fourteen-county [2] five-minute [1] 224/3 155/21 155/25 171/2 footprint [3] 158/19 88/7 88/16 functionality [2] fix [3] 29/8 137/13 171/3 220/25 265/15 297/4 fraction [2] 63/4 175/12 187/7 322/22 George's [1] 329/20 force [2] 184/18 289/24 271/13 functioning [1] 226/11 fixed [2] 336/19 337/25 fragile [1] 61/19 **GEORGIA [148]** 1/2 forced [2] 192/18 **functions [1]** 277/15 flagged [3] 156/25 1/8 1/11 5/10 5/13 6/3 fund [3] 68/8 117/15 212/20 fragility [1] 61/20 290/4 290/12 11/7 12/4 13/1 13/10 frail [1] 89/23 139/25 forces [1] 184/12 flags [1] 156/24 14/10 16/9 17/3 17/10 foregoing [3] 353/4 frame [8] 68/7 134/18 funded [4] 20/21 51/14 flash [3] 274/11 277/21 135/2 135/5 136/4 17/14 17/16 18/8 19/8 353/6 353/10 151/4 161/25 278/4 19/14 20/18 21/15 foreign [1] 342/6 261/14 261/15 262/6 funding [19] 16/1 **flat [5]** 170/2 174/20 forensics [1] 211/8 frames [1] 261/20 90/15 116/16 116/16 21/16 21/18 21/24 177/22 186/12 248/5 21/25 22/1 25/8 31/2 forget [3] 46/17 97/20 framework [2] 85/24 116/17 116/17 117/8 **flavors [1]** 169/11 32/15 33/22 35/24 131/6 100/25 117/18 119/17 120/12 flaw [1] 61/18 frankly [2] 24/12 32/2 36/12 42/16 42/16 43/9 123/13 126/2 126/14 forgive [1] 138/7 flaws [1] 351/15 48/21 48/24 49/10 51/4 127/22 129/5 139/25 forgot [1] 281/3 fraud [1] 200/8 Fleming [9] 3/13 3/18 51/23 52/6 53/13 58/8 form [4] 58/15 150/3 318/14 318/17 336/18 fraudulently [2] 69/8 5/23 7/2 193/17 193/18 58/20 60/24 65/2 67/10 283/12 345/17 70/2 funds [1] 140/2

G **GEORGIA...** [101] 75/8 75/19 76/4 87/7 87/11 100/10 100/14 101/21 103/4 103/6 103/7 103/16 110/15 111/4 111/17 116/19 117/9 117/9 117/24 118/14 119/8 119/14 119/20 119/24 120/1 120/24 121/7 122/11 130/25 135/17 139/16 142/1 145/24 158/3 167/13 171/25 182/12 194/24 206/2 207/14 209/14 215/3 215/15 226/18 234/13 236/1 237/22 240/21 242/17 243/10 245/9 248/17 249/10 250/2 253/1 253/6 264/11 265/16 266/4 270/9 270/11 271/17 273/10 273/13 273/15 273/17 275/9 282/6 283/6 283/11 284/8 284/8 286/5 296/5 297/10 297/17 312/8 317/19 320/20 322/17 327/9 335/12 336/10 336/18 336/18 336/21 337/15 340/16 341/7 341/13 342/24 345/1 345/13 345/20 347/5 347/18 348/13 348/24 349/22 350/1 353/2 Georgia's [10] 21/20 37/16 44/3 74/11 74/21 100/4 127/16 130/8 263/5 335/9 Georgian [2] 338/9 344/14 Georgians [1] 107/13 Gerald [2] 349/13 349/13 Geri [2] 88/2 88/3 Geri-Fit [2] 88/2 88/3 get [137] 9/18 22/11 23/14 24/11 24/24 25/17 26/18 29/10 30/13 30/14 30/22 31/4 33/21 35/7 37/5 38/20 38/25 44/22 45/17 46/11 46/24 61/8 81/18 82/7 82/16 88/20 90/1 90/2 94/10 98/2 100/18 100/18 100/19 100/20

100/21 104/8 111/6

112/7 114/18 116/7

127/5 128/7 128/11

116/14 117/8 122/12

131/2 131/12 131/22

133/13 140/14 144/9 148/4 158/20 168/21 173/5 173/9 174/13 179/12 181/16 184/19 185/23 192/3 192/17 192/18 197/3 202/4 202/16 203/23 205/17 205/17 205/21 208/1 211/10 213/13 215/4 216/6 216/13 219/17 220/1 220/9 222/3 222/7 222/12 229/7 232/7 232/8 236/23 237/25 239/13 241/2 244/11 247/24 250/22 258/17 259/16 262/6 266/16 267/10 269/22 274/24 276/5 276/23 276/25 277/6 284/21 285/3 285/22 286/7 287/7 287/12 287/13 289/20 290/23 291/18 293/16 293/21 296/11 296/20 302/22 305/19 308/5 310/7 318/10 319/1 319/10 319/16 321/24 333/18 337/21 337/22 337/23 337/25 339/6 342/22 343/3 343/20 gets [9] 23/12 29/22 101/1 113/18 143/5 169/24 197/21 285/3 291/13 getting [19] 11/23 26/19 36/1 47/4 65/16 100/21 105/17 116/18 122/5 122/8 130/24 133/8 143/10 224/2 232/1 239/12 299/21 330/10 335/15 giant [1] 28/13 girls [1] 320/15 gist [1] 69/6 give [37] 38/23 38/24 40/24 58/4 84/25 92/1 114/19 117/20 119/16 137/12 149/4 157/6 167/17 172/15 173/4 188/7 194/12 220/1 220/22 235/4 242/21 245/18 260/3 271/19 277/17 287/9 291/25 296/18 312/11 319/3 322/25 329/12 331/6 343/5 346/15 351/12 351/13 given [10] 62/22 187/7 214/11 219/22 220/18 251/17 261/19 310/11 312/13 353/7 gives [6] 44/24 155/6

175/17 280/6 306/11 319/25 giving [9] 13/1 71/19 114/20 152/10 173/16 202/13 206/4 227/6 236/21 glad [5] 285/24 293/17 319/12 319/13 342/10 global [2] 206/13 208/24 GMA [1] 119/22 go [176] 21/24 22/14 22/25 26/3 26/14 26/17 27/11 28/21 29/5 31/2 34/17 35/6 35/13 35/15 38/1 38/21 40/1 40/4 40/5 40/23 40/25 44/10 46/23 48/4 48/5 49/4 56/2 57/12 76/12 78/15 78/17 79/24 82/12 82/14 82/15 82/16 83/16 85/22 88/21 92/8 96/24 102/10 102/15 102/16 103/22 116/10 120/19 121/5 127/2 129/9 131/22 139/6 144/2 150/5 153/15 154/21 155/17 155/23 156/8 159/20 160/1 161/18 165/22 167/1 168/5 173/6 175/25 176/20 177/4 180/7 183/14 183/18 187/13 187/14 187/23 187/24 196/7 196/10 196/12 197/10 200/6 201/23 202/11 205/21 207/18 209/23 214/14 220/13 221/16 224/9 224/17 225/1 226/1 226/2 227/17 227/24 228/15 236/20 237/10 238/23 239/9 239/14 241/15 241/23 242/1 242/7 242/9 242/10 244/7 244/23 245/9 246/10 247/23 249/19 250/20 255/10 255/23 258/1 258/8 258/16 260/16 261/10 262/2 264/20 268/20 270/12 270/15 270/21 270/24 275/5 275/13 275/17 278/5 279/22 280/3 283/9 283/19 283/22 284/1 284/2 284/3 285/11 285/16 285/22 286/21 288/24 289/13 290/20 290/21 290/22 291/1 291/2 291/16 302/9 307/13 308/24 309/3 311/3 311/18 311/20

320/1 320/10 322/13 327/6 327/25 329/21 331/14 333/17 345/5 348/9 348/17 348/21 351/17 go-to [1] 22/25 goal [2] 145/15 145/20 goals [1] 123/25 goes [17] 25/12 27/14 44/16 72/12 84/4 143/21 183/20 197/20 219/24 228/25 245/1 247/12 259/11 277/14 279/18 306/2 338/7 going [367] gold [2] 341/20 342/1 342/8 342/19 good [65] 3/8 3/21 7/6 36/5 41/2 42/16 43/9 43/11 44/3 45/13 48/1 49/19 54/22 57/16 65/6 68/20 74/7 78/22 84/20 92/22 116/11 118/19 128/7 133/4 138/24 160/5 167/7 170/4 170/5 173/15 177/3 182/16 193/20 201/8 204/20 205/12 205/16 215/21 233/17 261/5 263/5 263/7 263/21 264/6 264/9 270/11 270/14 284/9 292/15 295/1 295/2 321/12 321/19 327/11 332/4 332/22 336/7 344/8 346/25 349/19 gooey [1] 148/13 Google [1] 203/25 got [51] 3/2 8/2 30/19 70/15 72/23 73/12 84/8 84/8 90/2 96/14 106/25 109/10 130/13 131/9 134/16 135/7 144/25 145/25 148/3 154/4 158/4 162/13 167/7 194/10 207/10 207/16 224/10 234/14 236/12 237/3 237/13 237/15 247/23 261/22 262/5 265/11 265/15 268/10 269/13 278/10 286/19 293/5 318/11 318/17 319/1 319/13 319/20 333/1 336/18 347/18 350/3 gotcha [1] 196/9 gotten [2] 23/6 277/22 govern [2] 85/15 325/2 government [17] 18/12 11/3 11/19 22/23 50/3

313/1 317/13 317/15 48/15 51/25 65/5 66/17 67/24 71/22 76/4 100/1 100/23 117/25 119/21 122/11 127/23 304/16 331/13 335/13 government's [1] 66/18 governmental [2] 212/25 234/19 governments [4] 51/18 85/11 121/8 122/6 governor [11] 39/14 124/13 125/2 125/9 125/15 126/5 179/5 185/18 336/23 337/6 340/2 governor's [5] 118/20 gone [4] 277/19 280/15 123/12 125/5 140/6 140/10 **Governors [1]** 118/16 7/7 9/7 10/15 22/4 36/3 **grab [2]** 178/8 180/10 grade [1] 275/19 graduate [3] 12/20 254/10 341/11 graduated [1] 87/11 grain [1] 210/25 **Grant [1]** 86/15 granted [1] 74/12 graphics [1] 215/9 gray [1] 254/9 great [42] 3/8 4/11 4/13 6/14 17/18 22/23 25/7 32/17 41/3 41/24 42/3 42/3 42/20 45/18 45/20 45/22 65/20 67/11 74/1 78/1 78/18 79/3 103/18 116/25 132/17 164/22 197/23 234/4 234/12 237/5 252/21 254/6 254/22 254/23 261/22 268/11 294/11 296/8 326/4 331/6 331/16 333/9 greater [1] 129/15 greatest [1] 58/10 greatly [2] 74/21 134/11 greatness [3] 76/10 76/19 117/2 green [14] 8/6 8/7 8/10 154/5 154/9 155/21 178/4 178/5 180/21 181/11 182/14 210/6 280/14 328/23 grew [3] 172/5 172/6 234/25 groan [1] 322/10 groceries [1] 100/20 grocery [1] 321/8 ground [2] 79/5 216/15 **group [13]** 5/7 10/18

G **group...** [7] 67/19 101/25 106/8 116/13 117/5 117/17 327/15 group's [1] 133/23 **groups [3]** 5/4 48/13 343/15 Grovetown [2] 1/11 3/11 grow [1] 132/24 growing [3] 132/22 216/16 335/9 guarantee [2] 110/7 312/4 **guaranteed** [1] 15/14 gubernatorial [2] 194/7 347/13 quess [9] 34/1 34/20 42/20 115/16 135/7 169/2 199/1 334/6 336/17 guessing [1] 180/1 guestimates [1] 282/8 guide [4] 85/1 86/2 223/13 223/21 quidelines [6] 7/3 112/14 123/25 223/7 304/1 314/4 guy [2] 177/4 334/3 guys [32] 4/17 4/18 4/21 5/1 5/15 78/25 145/19 145/22 145/25 146/8 150/16 150/24 151/11 151/25 152/21 153/5 154/13 154/25 156/13 157/11 157/12 157/17 157/18 158/11 158/13 160/23 164/12 167/1 167/10 172/19 325/9 343/20 Gwinnett [5] 41/12 221/12 253/24 296/4 344/14 Н

hack [3] 73/3 143/10 276/19 hacked [2] 278/1 327/19 hackers [1] 67/16 hacking [4] 70/20 127/18 142/6 276/16 had [75] 5/7 14/6 22/19 28/15 30/13 34/10 36/12 45/2 45/18 45/19 50/6 59/17 61/15 61/17 74/9 79/17 96/13 102/3 113/16 118/5 118/21 119/25 122/3 131/7 131/19 131/21 131/25 131/25 132/1 132/1

132/1 135/3 135/10 136/12 137/7 137/8 137/16 139/2 141/15 147/7 150/4 153/2 155/10 156/4 165/11 165/25 166/2 176/10 182/15 195/21 198/15 198/17 204/4 229/24 233/13 233/14 242/8 263/8 264/20 268/5 268/7 274/1 274/1 305/17 333/9 333/15 334/4 334/8 336/13 337/14 337/23 341/24 347/12 348/2 348/10 Hail [3] 78/7 80/24 81/3 half [14] 50/18 64/6 96/18 130/13 133/25 169/23 228/23 235/1 247/19 248/5 267/23 292/19 310/20 350/21 hall [2] 9/14 41/23 halting [1] 2/5 hampered [1] 201/20 hand [46] 10/22 61/23 62/11 64/10 67/18 90/22 90/25 179/22 182/15 183/9 183/11 196/12 200/24 202/7 209/15 209/17 211/11 254/1 255/19 279/20 280/5 280/9 280/22 287/19 287/22 287/22 288/11 288/16 288/18 288/19 288/25 289/3 289/5 289/10 289/19 293/5 301/16 302/7 302/14 305/20 305/22 306/1 310/25 321/3 341/19 344/24 hand-marked [27] 61/23 64/10 90/22 90/25 200/24 254/1 280/22 287/19 287/22 287/22 288/11 288/16 288/18 288/19 288/25 289/5 289/10 289/19 301/16 302/7 302/14 305/20 305/22 306/1 310/25 321/3 341/19 hand-marking [1] 289/3 hand-readable [1] 255/19 handbook [5] 52/11 52/12 52/18 53/9 53/15 handcuffs [1] 77/14 handed [1] 294/11 handicap [1] 69/23 Handicapped [1] 85/20

111/21 154/25 239/17

273/21 274/8 298/23 340/10 343/20 350/8 handled [3] 266/5 302/20 329/17 handling [1] 112/1 handout [3] 329/13 349/23 350/16 hands [8] 71/24 113/18 115/11 146/19 166/11 239/12 296/21 313/19 hands-on [1] 296/21 handset [1] 308/3 handwrite [1] 90/17 happen [14] 44/2 58/2 60/16 60/17 156/5 175/5 179/18 187/10 199/8 279/6 281/9 314/22 314/23 337/9 happened [7] 26/4 28/15 44/18 179/8 224/22 339/7 339/13 happening [2] 321/15 339/12 happens [17] 24/13 27/19 40/17 60/15 112/6 156/15 184/4 241/4 242/14 254/21 257/8 281/12 281/13 284/23 303/19 334/9 349/2 happy [9] 53/11 114/18 184/20 185/3 306/7 309/12 309/16 336/8 347/2 hard [18] 3/23 10/3 18/1 23/13 23/13 23/15 32/25 53/11 105/13 129/4 140/12 148/12 244/15 246/1 256/19 263/17 341/18 348/4 hard-coded [1] 148/12 harder [2] 12/9 148/12 hardware [21] 150/14 150/17 150/18 151/1 170/3 209/1 210/9 265/17 269/10 271/12 274/7 274/20 276/22 276/23 277/2 278/18 284/11 295/17 298/14 303/13 308/12 hardware-based [1] 303/13 Harlem [1] 123/7 harm [1] 67/7 Harris [1] 266/22 Hart [11] 6/22 263/23 263/24 264/4 264/8 264/10 264/15 264/25 267/19 271/16 273/22 Harvey [3] 268/7 268/8 handle [11] 40/22 84/6 337/14 has [147] 6/18 7/20

12/18 16/23 17/15 18/5 18/10 21/14 22/25 24/8 24/21 25/20 27/2 27/6 29/4 29/21 30/2 30/15 30/19 32/15 34/15 35/24 36/5 36/12 38/4 38/7 39/22 40/9 41/5 41/6 41/13 41/23 41/25 | **Hawaii [4]** 265/20 42/17 44/12 49/6 50/18 50/23 54/2 56/4 61/3 62/20 63/3 63/18 69/18 76/11 85/13 85/25 86/13 86/17 88/4 88/25 90/12 99/17 101/15 104/22 106/14 106/15 112/7 112/12 115/17 118/9 119/1 120/5 125/3 131/20 132/18 140/3 141/17 141/19 142/2 142/12 143/24 148/18 155/22 159/3 159/4 168/6 169/22 170/23 171/24 176/7 176/9 176/10 176/11 180/9 181/21 182/6 182/7 188/20 189/16 192/1 197/11 207/5 208/25 212/5 212/6 212/8 215/18 218/19 218/24 221/12 225/16 226/6 232/6 233/2 236/17 237/24 239/4 239/16 239/17 245/25 247/3 250/19 254/15 255/4 258/4 261/2 262/10 265/19 266/24 271/5 275/9 277/9 277/13 279/5 279/24 280/15 283/6 285/14 295/15 295/24 296/3 298/18 300/18 309/3 309/10 309/17 314/8 315/23 333/4 340/8 342/8 344/24 345/6 345/20 348/24 hash [1] 277/5 hat [1] 73/22 hate [1] 195/1 hats [1] 333/14 **HAVA [7]** 85/19 86/15 98/21 98/21 98/23 268/10 268/11 have [691] haven't [11] 32/4 34/14 104/10 223/18 246/4 246/10 327/25 351/4 351/5 351/6 351/8 having [36] 15/5 22/15 25/2 30/14 34/4 34/13 43/5 44/10 49/20 79/14 82/8 90/10 90/16 93/20 95/11 97/18 97/23

105/9 106/23 127/1 136/5 149/12 150/1 155/8 160/13 160/18 177/7 225/2 232/4 238/23 239/13 241/22 253/1 273/10 310/5 327/13 266/2 266/5 266/8 he [43] 5/25 7/2 7/13 7/20 11/17 12/10 12/13 12/15 12/18 44/14 72/12 79/18 120/23 165/15 166/7 166/10 166/11 174/15 183/3 183/4 183/20 183/20 183/22 183/23 183/25 184/1 184/21 185/2 185/4 185/4 185/5 188/4 190/2 193/16 202/12 250/25 295/14 295/15 295/24 296/3 296/4 340/3 342/11 he's [20] 12/4 24/25 64/17 93/13 174/12 174/15 183/18 183/22 184/2 184/24 184/25 185/3 189/25 190/1 190/25 191/5 193/10 193/12 295/21 295/22 head [3] 79/18 79/20 273/5 headed [1] 31/12 headphones [1] 246/22 headquartered [2] 235/20 265/23 heads [1] 31/19 health [12] 6/8 12/19 82/12 82/14 82/16 82/17 86/16 87/21 88/6 95/13 118/25 118/25 health-care [1] 118/25 healthy [3] 82/13 82/16 82/19 hear [23] 5/8 6/19 8/10 17/19 22/6 24/14 45/25 58/4 69/9 82/5 86/7 93/13 120/21 169/9 215/20 294/24 323/8 336/8 342/24 343/19 344/12 347/2 349/20 heard [24] 13/20 61/11 62/15 82/4 106/8 116/12 117/3 134/24 137/23 146/7 170/17 186/15 227/12 244/9

264/24 282/13 290/6

292/24 293/19 322/3

hearing [7] 76/8 76/8

328/1 329/8 337/4

337/22

Н hearing... [5] 76/9 97/3 101/22 343/12 346/10 height [1] 269/7 held [5] 1/7 117/24 176/16 295/22 326/5 help [32] 16/14 18/17 23/6 48/15 62/24 64/21 65/6 66/19 71/20 86/24 88/9 93/5 95/5 95/9 95/25 102/18 104/1 105/24 119/4 144/11 145/24 163/25 211/7 219/2 221/23 222/13 222/14 222/16 223/21 256/23 267/22 295/25 help-desk [1] 211/7 helped [4] 4/10 18/17 106/10 339/8 helpful [5] 84/16 106/16 110/24 115/7 115/9 helping [7] 3/17 7/18 7/21 65/24 107/13 145/12 198/5 helps [1] 106/14 **Helton [2]** 119/13 119/20 her [13] 17/4 17/10 17/17 21/10 21/23 21/24 39/8 177/14 280/1 280/15 280/16 280/18 280/20 here [225] 3/3 3/7 3/10 3/19 4/11 4/15 4/18 5/1 5/9 5/11 5/14 5/15 7/5 7/14 8/22 9/5 9/8 9/18 10/1 10/16 11/6 17/19 22/5 22/7 22/20 22/20 24/15 40/8 43/9 46/15 47/23 49/10 49/12 49/12 49/20 58/6 65/5 65/12 65/13 65/14 65/15 65/18 66/3 66/18 66/18 68/5 76/7 80/11 86/7 96/22 103/4 103/5 103/16 108/4 122/21 127/14 128/22 130/24 132/3 135/17 145/8 149/11 149/23 150/8 154/5 155/2 156/16 159/25 160/16 162/16 164/16 180/18 185/1 185/25 186/25 189/12 190/22 194/15 198/10 204/22 207/14 208/17 209/14 211/18 212/15 215/14 215/16 218/10 218/11 218/12 218/20 218/23 219/1 219/3 219/14 220/3 220/5

220/7 220/10 220/24 220/25 221/7 221/13 221/15 221/17 221/22 222/19 222/23 222/24 222/25 223/16 224/7 224/17 224/20 225/7 226/14 228/24 229/9 230/14 230/24 232/24 233/15 234/14 234/22 235/1 236/1 236/14 237/5 237/11 238/7 238/16 238/19 239/1 242/24 243/14 243/21 244/2 244/4 244/16 247/15 247/18 249/20 252/14 252/15 252/24 256/15 259/7 259/8 259/18 263/22 264/9 266/4 266/12 268/4 268/4 269/6 272/24 274/8 279/5 279/9 279/24 280/22 281/22 282/17 282/21 284/14 286/1 287/11 288/20 288/21 289/22 290/7 290/23 291/18 292/7 292/17 294/23 296/14 298/2 298/10 301/16 304/18 304/22 305/18 305/19 305/21 306/14 308/4 309/14 310/23 313/2 314/8 317/9 317/10 317/14 318/19 321/2 321/13 322/16 323/22 323/23 323/25 324/10 324/20 324/22 327/2 328/1 328/15 328/24 330/17 332/24 334/3 334/18 335/22 335/25 339/2 340/9 341/9 344/2 346/23 346/24 347/6 348/13 349/9 351/25 here's [8] 40/21 183/1 184/3 245/7 256/14 268/22 272/12 322/24 hereby [1] 353/4 hey [2] 34/12 131/10 **Hi [3]** 328/19 334/21 344/13 hidden [1] 188/13 high [16] 17/16 17/17 70/1 151/21 167/8 172/3 227/21 244/4 248/23 253/8 253/20 255/24 260/3 301/11

308/16 312/2

172/3

high-humidity [1]

high-impact [1] 312/2

high-quality [1] 151/21

high-level [1] 260/3

high-resolution [1] 308/16 high-speed [3] 253/8 253/20 255/24 high-volume [1] 301/11 higher [5] 61/9 86/23 212/9 212/10 213/2 highlight [1] 51/22 highlighted [1] 105/2 highlights [2] 52/18 245/2 highly [1] 60/10 Hill [1] 120/5 **Hillary [3]** 73/15 178/11 179/15 **him [7]** 7/23 64/19 64/19 140/19 165/4 181/9 350/11 himself [2] 64/19 340/3 hosting [3] 122/16 hire [2] 231/8 266/6 hired [1] 41/24 Hiring [1] 275/4 his [27] 7/14 39/8 72/13 124/14 165/1 165/13 177/14 179/22 181/10 182/15 183/2 183/3 183/20 183/21 183/23 184/2 184/20 184/25 185/2 185/5 190/24 193/13 198/9 267/23 296/2 313/16 337/13 Hispanic [1] 97/17 historically [3] 13/5 16/15 92/15 history [5] 18/16 69/14 92/14 206/24 207/9 history's [1] 338/6 hit [4] 197/1 306/8 309/17 314/10 hitting [1] 331/20 hoc [2] 32/3 32/7 hog [1] 22/12 hold [9] 9/6 126/25 130/15 170/16 176/22 182/13 196/22 289/12 325/6 Holden [2] 167/11 257/20 holding [4] 80/17 177/8 179/22 293/6 holds [2] 87/4 95/14 holes [1] 80/13 holiday [1] 123/19 holistic [1] 303/11 home [9] 34/24 50/10 82/16 180/19 185/23 187/23 187/24 214/1 300/19 Homeland [9] 50/2 51/15 52/16 59/3 64/18

64/25 65/11 79/7 331/10 honestly [2] 202/7 287/7 honor [3] 49/11 66/2 295/12 honored [1] 58/18 hooked [1] 333/6 hope [9] 14/10 32/21 48/16 58/8 127/23 128/10 132/24 138/1 202/16 hopeful [1] 122/3 hopefully [3] 146/15 149/4 237/24 Hopkins [1] 331/11 Horace [1] 295/3 horizon [1] 297/24 hospital [1] 105/14 341/11 341/15 hot [3] 8/6 273/8 316/7 hot-spot [1] 273/8 hot-swap [1] 316/7 hour [1] 234/25 hours [2] 34/25 187/24 House [4] 125/1 125/24 177/1 177/2 housekeeping [3] 7/24 9/10 46/12 housing [1] 12/17 **Houston [2]** 266/22 268/9 how [170] 4/23 19/14 23/15 25/21 26/16 26/17 26/18 27/16 27/17 28/24 29/8 30/16 30/20 31/25 33/1 37/23 40/21 44/14 48/3 57/5 60/11 64/4 67/5 68/1 70/5 70/13 73/3 74/13 79/12 79/12 79/13 79/13 79/25 81/14 81/25 82/1 85/25 86/1 94/22 96/15 96/20 101/9 102/8 102/11 104/11 109/5 109/14 111/21 111/25 115/11 116/9 116/14 116/17 117/7 120/13 124/1 127/10 128/17 131/3 131/4 131/12 133/13 134/3 134/22 139/23 141/16 145/23 149/5 152/1 152/24 152/25 154/3 154/25 155/13 155/17 158/2 159/3 159/4 162/21 163/6 163/9 164/2 164/18 168/1 168/24 170/23 173/18 174/10 177/24 178/2 182/11 186/16

187/17 189/14 189/15 191/2 191/11 192/17 194/23 196/14 196/16 197/5 197/18 197/19 197/22 198/14 198/21 198/25 199/16 199/19 200/16 200/19 200/22 201/2 201/23 205/7 220/19 226/17 228/16 229/6 230/17 232/21 235/8 237/18 237/18 238/12 248/16 248/23 250/12 251/22 251/24 252/2 252/6 256/15 257/17 257/21 258/19 263/12 267/21 268/14 269/3 271/18 282/5 283/7 286/5 289/16 290/5 291/4 292/1 292/10 292/21 302/17 302/20 303/21 313/24 314/1 314/2 315/5 315/6 320/6 324/9 329/16 330/10 330/20 333/24 334/18 335/4 340/14 342/12 350/24 Howell [2] 6/6 84/21 however [7] 11/13 37/21 60/1 63/12 93/17 254/11 291/14 **HP [3]** 300/8 310/21 311/17 **HTML [1]** 112/12 huge [3] 43/19 76/15 212/7 human [13] 30/7 37/23 38/6 38/7 86/16 192/21 202/4 202/15 214/21 215/1 277/20 278/9 293/20 human-marked [1] 37/23 humidity [2] 172/1 172/3 humorous [1] 114/4 hundred [32] 16/5 32/5 100/4 121/3 131/20 131/21 132/8 132/20 135/14 158/3 189/6 194/24 199/3 203/3 226/24 227/18 248/22 253/14 253/21 253/21

lion [1] 323/7

282/13 323/11

267/12 270/16 270/17

270/17 282/7 282/13

297/3 312/10 312/17

315/19 323/7 323/11

hundred-and-fifty [1]

hundred-million [2]

hundred-and-thirty-mil

227/18

Н hundreds [2] 263/9 263/10 husband [4] 198/3 198/5 198/9 198/16 hybrid [7] 240/24 272/9 282/12 282/25 283/14 305/21 312/21 hypothesis [1] 64/6 I finish [1] 112/23 **I'd [7]** 51/3 68/7 80/21 82/15 262/11 341/15 343/19 I'II [43] 3/5 4/4 10/14 10/22 11/21 34/20 35/14 38/22 40/1 51/22 53/25 58/23 64/19 86/4 101/18 117/18 117/19 145/1 156/2 157/16 159/23 159/24 159/25 194/20 206/8 207/23 215/11 222/8 234/15 278/17 284/13 285/12 287/7 287/12 312/11 313/1 317/12 317/12 323/2 338/1 338/3 343/5 351/17 l'm [209] 4/12 5/12 7/1 8/2 9/18 22/24 27/3 27/24 32/6 36/1 38/21 38/22 40/23 41/6 44/10 45/9 45/24 45/25 46/13 48/20 48/21 49/23 57/17 58/5 58/18 64/13 64/14 64/24 65/4 65/5 65/5 66/6 71/6 71/8 74/12 76/25 84/21 86/3

90/4 96/2 103/5 103/7 103/15 105/20 108/17 110/13 111/16 111/16 112/21 112/22 117/22 118/6 118/13 121/1 121/1 121/14 122/20 122/22 125/21 126/9 129/8 132/23 132/25 135/24 135/25 136/18 138/21 144/21 144/25 145/10 146/15 146/24 148/4 152/13 152/13 152/16 152/23 160/6 162/14 166/8 166/8 167/11 168/6 170/17 172/5 173/13 174/11 177/6 180/1 187/24 188/16 189/13 189/15 192/14 196/10 198/5 199/1 200/3 200/6 200/6 201/10 201/10

201/11 204/24 205/2

205/23 206/1 206/6 206/6 208/23 214/19 215/13 215/16 224/5 226/19 227/13 228/6 234/2 235/3 236/12 240/13 242/7 242/9 242/10 242/12 242/14 242/15 242/15 246/15 247/24 252/25 253/8 254/17 264/5 264/22 268/3 268/8 272/13 283/9 284/9 285/24 286/23 288/22 289/13 293/17 294/23 295/3 295/4 296/12 296/12 296/18 305/12 306/7 307/6 308/2 309/13 309/16 310/15 313/4 315/7 317/10 317/24 318/5 318/19 319/12 319/12 320/15 320/20 320/22 320/23 320/23 321/14 324/16 324/17 327/8 327/14 327/23 328/17 328/20 328/22 328/23 329/11 330/1 332/19 334/3 334/8 334/12 334/21 334/25 335/8 335/14 335/23 336/10 338/15 338/19 339/14 340/7 341/12 343/11 343/12 345/9 347/3 347/3 347/6 349/15 349/22 349/23 349/24 350/17

I'm shortening [1] 41/6 I've [49] 10/5 10/8 23/6 48/23 49/1 49/24 49/25 50/6 50/7 116/23 118/4 118/5 118/20 118/21 119/21 121/13 122/21 122/22 142/17 148/3 153/11 153/11 155/23 162/6 183/9 187/23 207/10 215/15 215/25 227/1 227/12 234/14 237/9 247/23 264/9 270/10 286/12 297/21 305/12 309/1 324/19 329/8 333/11 333/12 339/5 340/15 340/17 348/4 350/3 **I-85 [1]** 336/13

icebreaker [1] 65/6 ICP [1] 311/2 ICX [1] 307/20 ID [4] 182/1 209/6 242/15 326/18 idea [16] 11/23 32/19 47/2 68/21 72/17 72/19 73/7 149/5 150/15 158/2 165/20 198/3

220/10 226/17 260/3 320/1

ideal [2] 107/16 107/16 idealize [1] 220/24 ideally [1] 60/9 ideas [1] 319/15 identical [7] 149/9 149/18 150/1 161/6 162/1 162/6 310/17 identification [2] 12/6 181/10

identified [4] 218/19 301/19 304/16 351/5 identify [1] 218/18 identifying [3] 54/24 153/8 153/9

identities [1] 50/3 identity [1] 325/15 if [317] 3/25 4/3 4/16 5/1 5/6 8/7 8/9 9/6 9/19 10/10 10/21 14/3 15/8 22/13 23/7 23/14 24/23 25/14 26/10 28/17 29/7 30/22 30/24 31/14 32/24 34/2 36/17 37/1 41/5 41/6 43/14 44/16

82/7 83/15 84/4 84/5 86/5 88/11 89/15 91/4 96/4 96/14 98/1 101/8 102/4 102/8 102/11 105/11 105/18 106/17 106/24 107/18 108/3 108/17 108/19 108/22 108/25 109/9 110/10 114/4 114/7 115/7

125/6 126/11 126/20 127/15 129/1 130/20 132/7 133/1 136/3 136/9 136/12 137/23

137/25 138/7 138/8 141/7 141/12 142/16 143/13 144/1 144/8 150/6 150/17 151/6

151/13 152/7 153/15 153/22 153/24 154/1 154/7 155/5 155/12 155/17 155/19 155/23

156/15 156/22 158/9 160/11 164/5 164/9 166/4 167/16 168/5

169/5 169/24 171/16 175/5 175/22 178/18 179/8 179/13 180/11 181/14 181/15 181/24 182/19 183/22 183/24

196/20 196/24 198/1

199/4 199/12 200/9

200/9 201/18 202/5

203/24 206/14 209/23

211/6 213/20 214/15

219/13 219/14 222/4

225/25 226/5 232/16

232/22 237/16 238/1

239/1 239/2 242/14

245/20 245/23 246/6

246/12 246/15 246/23

247/12 248/2 250/14

251/3 254/20 255/1

260/19 261/8 261/9

262/19 263/14 264/2

270/6 270/22 273/17

273/24 276/14 276/24

277/14 277/22 277/25

278/1 278/16 279/14

280/8 280/16 280/22

282/9 282/11 284/1

284/2 284/3 284/10

284/15 285/11 285/19

287/10 287/18 287/22

288/24 289/19 289/20

250/18 250/21 250/23

258/22 260/14 260/18

184/4 184/6 184/8 184/14 185/3 185/17 186/4 186/18 188/10 188/12 189/10 192/3 192/20 193/3 193/5 194/13 194/19 194/22 195/6 195/11 196/19

37/1 37/11 40/10 40/14 44/21 46/17 54/21 60/18 62/8 62/9 68/13 68/13 68/21 69/20 70/18 71/1 72/4 72/7 73/20 74/16 75/7 77/6 80/15 80/16 81/4 81/12

289/23 291/22 291/23 292/4 292/16 292/21 294/19 298/16 299/7 299/22 301/8 302/6 305/20 306/2 306/3 115/9 115/10 115/15 306/3 306/7 306/16 115/17 115/17 115/21 307/22 308/2 308/21

118/17 120/21 123/11 309/1 309/3 309/11 309/12 309/16 311/6 311/18 312/15 312/21 313/21 314/13 315/24

> 316/22 318/1 318/2 318/17 318/23 319/3 319/4 319/10 321/16 321/22 321/24 322/8

322/13 323/13 323/21 329/20 334/2 335/5 340/6 345/17 347/21

348/17 348/21 349/2

350/18 ignorance [1] 138/7 ignore [1] 38/16 **II [3]** 98/20 99/2 99/14

image [21] 151/21 151/23 151/24 186/23

197/11 201/19 208/18 230/23 237/1 238/3 238/9 238/10 238/11 256/3 256/13 256/14 256/18 302/15 302/17 303/4 313/15

ImageCast [11] 299/12 299/13 299/15 299/17 299/22 304/24 305/11 305/25 306/14 306/15 310/23

images [3] 60/3 190/13 238/23

imagine [8] 10/4 14/16 75/9 79/17 96/16 138/1 267/16 350/24

immediate [1] 16/21 immediately [3] 27/14 118/1 179/7

impact [8] 13/2 13/9 15/19 43/1 129/25 130/8 134/11 312/2 impacts [1] 42/12

impair [1] 43/24 impaired [2] 94/2 108/24

impairments [1] 97/3 **implement [12]** 50/17 78/4 81/5 126/12 194/24 205/7 226/18 248/17 282/7 301/14 312/8 345/18

implementation [10] 53/18 74/10 126/10 236/4 266/1 305/5 312/14 316/3 344/22 346/5

implementations [4] 235/23 295/10 297/6 312/20

implemented [7] 19/15 77/7 136/21 249/12 249/14 270/3 329/2

implementing [7] 16/14 75/4 75/12 75/14 118/5 261/14 301/25 **importance [3]** 55/16

56/15 92/2

important [64] 6/15 14/12 18/7 18/7 19/7 27/18 32/13 36/24 44/6 48/9 52/25 53/4 54/11 54/14 55/15 58/7 60/1 63/1 75/24 77/1 77/21 78/13 82/2 83/13 91/8 91/24 93/24 94/7 103/2 109/23 122/9 127/3 151/19 152/8 153/3 155/9 156/6 156/13 178/25 183/7 241/10 241/20 251/10 254/8

257/6 257/8 265/9

important... [17] 265/12 265/16 266/4 266/17 267/7 267/9 267/10 271/3 275/1 275/8 277/14 277/20 318/10 318/22 319/10 319/16 325/11 importantly [2] 235/10 256/17 imposes [1] 85/10 impossible [1] 62/19 **impressed** [1] 334/25 impression [1] 216/6 impressive [1] 6/15 improve [3] 101/12 104/1 252/6 **improved [1]** 106/15 improvements [2] 81/4 in [995] in-person [5] 60/25 64/8 196/16 213/9 299/11 in-precinct [1] 302/13 inaccurate [1] 246/6 inactive [1] 132/8 inadvertent [1] 63/7 inalienable [1] 325/7 inaudible [10] 163/13 249/21 251/19 289/11 324/1 324/5 336/5 344/3 344/6 349/10 incapable [1] 95/23 inception [1] 211/19 inch [4] 177/11 177/12 177/12 177/12 inches [1] 269/9 incident [2] 51/11 55/18 incinerate [1] 329/20 include [8] 19/20 30/3 53/16 56/10 65/25 126/13 229/17 325/22 included [4] 53/14 94/19 223/1 310/3 includes [3] 55/25 56/8 299/11 including [22] 16/11 16/25 17/22 21/11 48/12 50/1 50/19 67/16 71/22 85/18 127/13 235/25 295/16 295/18 297/1 300/5 300/6 303/24 307/10 307/22 308/24 329/10 inclusion [1] 326/22 **inclusive** [1] 5/7 income [3] 15/19 42/12 325/14 **incoming [1]** 7/15

inconsistencies [1] 37/4 inconsistent [1] 36/16 incorporate [1] 187/19 incorrect [3] 179/18 292/1 292/8 increase [8] 15/12 15/25 16/1 16/12 43/17 204/12 340/22 347/24 increased [4] 15/10 16/2 34/15 156/1 increases [1] 13/15 incredibly [1] 326/1 incremental [1] 81/4 **incumbent [1]** 57/7 incur [1] 175/7 indeed [4] 52/25 58/22 61/20 212/6 independence [2] 91/25 92/3 independent [3] 119/6 220/11 231/8 independently [11] 90/10 91/19 99/4 99/9 99/11 108/12 108/13 110/3 112/22 149/17 345/18 Index [1] 2/25 indicate [2] 85/25 178/20 indicated [1] 219/6 indicates [2] 2/5 180/8 indicating [12] 111/9 140/19 191/15 191/21 193/1 218/23 221/22 222/25 228/25 269/6 279/17 301/16 indication [3] 102/13 245/22 309/2 Indigent [1] 21/21 indiscernible [18] 49/15 67/17 71/17 71/18 73/25 115/4 138/11 193/22 208/8 208/11 228/4 264/11 278/8 286/17 291/15 321/18 337/20 346/9 individual [15] 73/8 99/19 109/13 109/15 162/21 204/17 219/20 290/13 297/2 297/15 298/20 298/20 299/6 310/3 310/10 individual's [1] 72/20 individuals [10] 84/22 85/11 85/17 87/9 87/15 94/24 104/5 161/21 204/16 231/25 industrial [3] 275/16 275/19 275/19 industrial-strength [1]

275/16

industry [5] 267/16 272/8 283/7 295/21 303/23 inexpensive [1] 344/21 inform [2] 44/16 44/18 information [47] 6/3 50/11 50/13 50/21 51/8 52/3 65/14 92/2 117/18 117/21 181/15 182/2 199/25 209/8 213/10 214/13 216/21 217/18 217/23 218/1 218/5 218/6 238/25 242/20 243/5 243/13 243/14 246/8 247/5 274/24 288/8 288/22 289/2 289/7 295/7 298/19 316/18 319/11 327/20 339/24 343/9 346/17 350/18 informative [2] 40/9 84/16 infrastructure [6] 50/12 50/20 52/12 53/12 56/6 167/2 infringed [1] 325/12 ingredients [1] 76/2 inherent [2] 73/18 213/2 inherently [1] 61/19 initial [5] 124/24 133/6 229/14 271/3 330/5 initialize [1] 220/9 initially [2] 128/2 199/25 initiative [1] 75/25 initiatives [1] 50/7 inject [1] 70/2 injunction [1] 346/4 ink [1] 248/9 innovation [1] 66/25 input [5] 122/8 127/5 285/5 319/13 351/23 inputting [1] 310/23 inquiries [1] 200/5 ins [1] 300/13 insert [11] 178/15 218/1 220/5 221/6 221/7 221/10 243/1 243/4 243/20 243/21 279/23 inserted [6] 178/6 186/22 196/22 245/18 279/25 306/11 insertion [2] 186/20 196/20 inserts [1] 306/2 inside [8] 188/19 202/14 214/17 219/24 248/11 269/12 272/21 274/8

inspect [3] 14/24 171/11 197/13 installed [2] 24/18 25/22 instance [2] 213/20 231/24 11/2 44/17 48/23 48/24 instances [3] 24/1 34/3 internal [4] 247/11 172/12 instant [1] 326/2 instead [9] 32/11 243/9 Internet [17] 49/21 245/14 254/8 259/18 260/1 268/15 285/21 310/17 institute [4] 6/3 48/22 50/4 86/12 institutions [2] 67/3 86/23 instructions [8] 62/21 178/10 220/16 220/18 220/20 222/25 243/25 280/6 **instructor** [2] 87/25 88/3 insures [1] 70/22 integrate [2] 169/15 233/15 integrated [3] 158/16 209/6 306/20 integrity [4] 192/1 217/19 344/25 349/25 intellect [1] 83/24 intend [2] 250/23 251/16 intended [1] 156/10 intent [13] 136/24 137/10 155/4 155/14 157/5 157/7 166/6 193/25 290/14 300/11 302/8 302/10 335/10 intentionally [1] 221/21 interact [3] 216/12 220/19 308/4 interaction [3] 141/19 219/6 237/5 interactive [1] 218/11 InterCivic [4] 6/22 263/23 264/4 264/8 interest [8] 64/12 65/24 78/19 88/12 104/23 217/6 340/3 345/6 interested [2] 118/13 353/13 interesting [2] 114/24 123/9 interface [17] 94/9 148/8 148/10 148/13 216/10 221/1 228/21 268/24 299/12 299/19 306/19 307/9 307/19 308/10 308/20 310/15

310/16 interfaces [1] 299/1 intergovernmental [6] 5/20 6/12 116/6 121/14 121/24 138/19 intermediate [1] 230/6 247/15 252/2 276/22 Internally [1] 231/14 50/10 52/11 70/20 142/3 142/8 142/22 142/25 143/5 143/8 143/11 198/6 198/7 203/18 203/24 216/7 276/21 interplay [1] 69/1 interpretation [1] 147/18 interpreted [8] 152/1 166/6 191/12 225/8 238/13 256/16 302/18 303/22 interpreter [1] 97/11 interrupt [1] 194/11 interruption [1] 342/25 intervention [1] 192/21 intimately [1] 19/13 intimidation [1] 345/21 into [91] 8/25 27/21 30/24 33/10 33/14 43/21 69/18 70/3 77/16 78/7 78/16 80/8 82/9 82/18 85/22 98/18 101/11 116/7 121/5 125/12 138/2 146/6 146/19 148/4 150/2 151/15 152/11 153/15 154/17 159/20 160/4 160/13 168/15 174/16 175/25 177/19 178/15 186/3 186/5 189/13 190/5 194/2 218/21 221/21 222/3 225/19 225/23 227/24 228/25 237/10 237/15 239/14 243/1 243/4 246/16 255/2 266/16 267/10 268/2 269/22 271/1 271/13 272/6 272/23 273/3 274/23 276/5 277/1 277/6 277/11 281/22 281/24 282/4 283/5 286/2 290/9 296/20 297/21 297/25 299/5 300/20 302/22 306/9 307/7 310/23 313/8 327/19 340/16 344/19 348/9 351/17 introduce [23] 9/21 10/18 11/21 64/14

64/19 84/24 86/3 86/9

introduce... [15] 117/18 117/20 118/18 145/1 145/9 145/15 173/14 205/24 217/18 232/19 234/15 250/10 264/6 295/13 296/6 introduced [1] 265/6 introducing [2] 16/20 21/7 introduction [3] 9/2 48/5 235/4 introductions [2] 57/12 173/23 introductory [1] 11/22 intruder [1] 274/2 intrusion [2] 52/1 52/2 intrusions [1] 49/5 invalidates [1] 335/6 **invaluable [2]** 7/18 7/21 invariably [1] 15/18 **invented [1]** 71/1 inventory [2] 132/9 134/20 invest [1] 153/5 investment [3] 58/17 271/4 326/15 invitation [1] 68/5 invites [1] 70/20 invocation [3] 3/13 4/4 4/5 involve [1] 42/8 involved [10] 4/25 12/5 14/20 18/19 19/9 23/22 54/8 56/25 133/9 149/1 involvement [3] 3/8 4/19 66/13 involves [2] 21/10 23/21 involving [1] 12/16 lowa [2] 202/22 203/4 iPad [9] 101/5 180/15 181/7 181/12 181/12 181/18 198/12 199/16 199/19 iPads [3] 187/18 197/24 198/2 IRS [1] 321/24 is [939] islands [1] 208/1 isn't [6] 16/5 82/14 225/21 254/19 321/22 348/9 isolate [1] 164/20 issue [37] 24/3 29/14 32/7 39/11 39/12 39/12 39/13 39/23 42/8 45/2 65/8 89/15 91/11 91/14 92/7 95/12 97/1 123/14 127/18 131/17 141/5

149/15 166/22 172/12 177/7 179/11 181/22 218/20 232/14 232/19 237/15 281/9 290/4 293/3 301/19 325/5 328/25 issued [1] 292/16 issues [26] 11/13 11/14 11/20 12/17 15/9 24/16 38/8 43/25 45/10 90/12 91/22 95/13 98/15 99/19 102/19 129/14 129/17 133/14 134/10 136/11 137/14 217/19 218/22 267/25 300/11 312/6 it [707] it'd [1] 198/23 it'll [8] 8/8 58/6 101/11 140/5 154/7 188/10 236/18 309/4 it's [325] 3/6 3/7 7/18 8/10 10/3 14/6 14/12 15/8 20/11 22/4 22/22 23/13 23/13 23/15 24/15 25/17 27/9 28/7 32/23 33/6 36/24 40/8 41/3 41/8 42/6 43/8 43/12 43/15 43/16 43/18 45/13 45/22 51/20 52/25 53/9 53/22 55/9 55/11 58/6 58/15 58/19 59/12 60/1 61/19 62/9 62/17 63/7 64/5 65/6 68/17 68/19 68/22 68/22 71/1 71/2 72/3 74/4 75/3 75/7 75/23 76/15 78/13 79/3 79/10 80/16 81/14 82/6 82/8 82/12 82/17 82/18 82/21 82/25 83/13 83/23 83/24 83/24 84/4 90/21 91/2 91/8 92/6 96/20 97/7 99/21 100/13 100/14 100/14 102/25 104/16 106/21 107/1 107/18 108/4 109/3 109/12 109/12 109/22 112/5 112/15 113/17 113/22 113/24 114/4 114/5 114/17 115/7 115/21 116/16 116/16 116/25 122/5 122/8 125/6 127/11 127/16 128/9 128/16 130/2 130/7 133/17 136/4 137/19 139/1 140/13 141/10 142/4 145/14 145/20 147/2 148/9 148/12 148/14 148/15 153/17 153/19 153/23 154/4 155/18

157/3 157/4 157/21 158/7 158/12 159/18 161/21 162/20 164/10 168/23 169/5 170/25 171/6 171/12 171/14 174/2 175/15 178/6 178/6 178/16 181/17 181/20 182/9 182/25 185/8 187/5 188/2 188/22 189/6 189/11 190/5 190/16 190/16 192/8 192/8 192/16 193/4 193/5 193/5 193/18 197/8 200/23 202/10 203/22 203/23 205/9 206/25 207/5 207/6 207/13 207/21 207/21 209/11 209/12 209/13 210/15 211/17 212/23 213/4 213/15 214/18 214/19 214/23 215/8 219/7 219/8 220/14 220/19 220/25 222/14 222/14 222/16 224/14 225/11 225/18 229/9 229/10 229/19 229/22 233/4 233/5 239/2 239/2 239/9 239/22 241/13 243/16 244/14 245/7 245/18 247/19 250/7 250/7 250/16 250/18 250/18 250/21 254/25 255/3 258/7 261/5 261/7 262/1 264/9 265/9 266/3 267/5 267/6 268/9 269/7 269/7 270/8 270/13 272/12 272/15 274/14 274/20 275/8 275/16 275/18 277/7 279/7 280/16 281/9 281/23 282/2 282/24 283/2 283/10 283/11 283/13 285/9 285/25 288/20 292/8 296/8 296/10 296/16 297/16 298/8 298/8 298/9 298/9 298/22 299/1 299/19 299/20 301/2 301/7 302/12 302/12 302/19 303/12 303/13 304/11 304/18 304/19 306/3 306/4 306/14 306/14 307/2 308/9 308/13 308/16 310/25 311/23 315/5 315/24 316/22 316/22 318/10 319/4 319/6 319/16 321/4 321/22 325/3 329/3 329/4 332/2 333/12 333/25 339/17 342/15 350/16

items [2] 125/17 307/21 iteration [1] 304/24 its [13] 15/3 36/12 41/7 51/4 68/16 69/18 174/16 211/19 212/8 225/9 230/10 337/18 348/5 itself [15] 55/15 69/17 69/18 132/17 144/4 181/6 188/20 190/6 195/17 218/19 235/7 256/12 256/15 257/9 273/8 J Jackson [7] 335/24

Jackson [7] 335/24 336/1 336/3 336/6 336/10 338/1 338/13 jam [1] 281/2 James [6] 206/9 206/10 215/12 215/13 223/25 226/16 January [4] 7/16 124/14 124/23 125/21 **JD [1]** 87/4 Jean [2] 317/24 317/25 Jeanie [2] 320/5 320/5 Jeanine [1] 317/25 Jeanne [4] 320/7 320/8 320/18 322/25 Jeb [7] 234/10 234/24 235/11 240/14 254/7 324/4 324/4 Jefferson [2] 174/2 176/16 jeopardize [1] 325/7 Jernigan [1] 86/11 Jimmy [4] 40/1 41/2 159/25 160/4 job [13] 41/24 43/9 46/10 54/22 113/14 113/21 114/1 119/5 164/11 263/5 270/15 294/11 297/22 jobs [1] 113/16 **Joe [5]** 324/16 327/1 349/9 349/9 349/9 **John [17]** 170/11 170/17 205/1 205/4 205/13 260/9 286/14 327/4 328/14 328/14 328/14 328/16 328/19 328/21 330/1 330/12 332/1 John's [1] 262/12

Johns [1] 331/11

join [1] 87/14

176/10

Johnson [1] 61/12

joined [3] 6/17 16/23

joining [4] 12/10 87/1

88/8 122/19 joke [1] 96/8 **Jones [6]** 87/18 87/25 95/24 101/20 106/7 109/16 **Jones' [2]** 73/15 322/19 Joseph [2] 324/13 324/14 Journal [1] 12/19 journey [1] 157/19 judge [12] 110/13 166/16 171/23 197/15 202/6 202/7 253/13 254/15 293/13 336/25 342/22 346/6 judgment [2] 337/2 337/3 judicial [1] 12/10 juju [1] 192/1 **July [2]** 125/7 125/9 jump [3] 148/4 152/13 194/14 June [4] 207/4 230/2 350/3 350/13 June 13th [1] 350/3 juris [1] 17/11 jurisdiction [11] 74/19 164/11 198/16 217/11 217/15 217/16 217/21 219/13 271/5 300/20 301/8 jurisdiction's [1] 219/21 jurisdictional [1] 298/19 jurisdictions [20] 146/20 150/11 160/10 163/23 167/3 179/1 217/22 217/23 218/4 232/23 233/6 240/8 261/24 265/22 267/14 267/15 267/18 269/25 298/10 298/12 just [220] 3/3 3/5 3/12 3/15 4/4 4/18 7/24 9/10 10/21 21/9 22/16 29/10 29/11 35/3 35/12 35/15 36/10 36/14 38/10 38/11 39/2 39/17 40/3 40/4 41/3 42/5 42/5 42/20 44/10 44/22 46/3 47/16 47/18 47/22 54/20 57/10 58/6 58/9 60/3 61/1 61/15 63/1 63/9 64/13 65/3 65/9 66/17 69/5 70/19 71/25 75/3 78/7 78/10 78/21 83/21 84/25 85/24 90/4 90/4 95/19 96/9 96/10

97/6 97/25 98/5 100/13

104/16 104/18 105/18

J just... [151] 106/2 106/6 107/24 108/2 110/10 110/12 110/16 111/9 112/15 112/22 112/25 114/3 121/23 124/2 124/17 126/21 132/9 136/4 136/20 139/18 141/7 141/11 141/13 143/12 144/1 144/3 148/2 148/24 150/13 152/20 153/11 154/14 155/18 162/11 163/2 168/15 170/2 175/15 175/23 176/10 177/21 178/7 180/24 181/25 182/14 185/17 186/7 186/11 186/25 188/17 192/23 193/5 194/5 194/6 195/3 196/5 198/7 200/6 204/13 207/2 208/4 208/16 213/7 215/1 217/24 218/2 219/25 220/18 221/5 222/9 222/14 222/16 222/17 224/3 224/11 225/25 226/10 226/19 227/15 230/9 231/13 231/13 233/5 233/8 236/13 239/15 241/16 242/2 242/14 243/21 244/7 244/9 244/21 246/2 247/8 248/19 249/15 249/18 250/8 250/25 259/24 260/5 262/1 262/12 263/1 263/8 267/4 270/13 274/23 276/22 277/14 282/18 283/11 283/24 284/3 286/18 288/2 288/21 290/8 293/19 296/18 296/24 299/6 299/20 300/11 303/9 304/11 304/15 304/19 305/7 310/16 310/17 311/14 313/4 316/7 319/5 319/8 322/17 323/10 325/10 329/3 331/7 331/25 332/1 333/14 334/13 336/10 343/10 344/17 345/23 350/23 just using [1] 250/8 justice [2] 12/17 331/12 justifiable [1] 75/16

Kansas [4] 61/13 194/7 202/22 203/3 Kathy [3] 234/18

263/21 324/8 Kedrell [1] 296/2 keep [27] 10/14 29/23 31/9 32/17 36/25 42/3 42/23 67/24 71/23 76/10 101/22 109/17 109/23 129/7 138/14 141/21 150/24 182/17 182/18 182/20 185/8 212/1 224/24 230/23 237/15 269/19 316/4 keeping [4] 36/5 44/5 76/6 144/22 **Kemp [1]** 7/10 **Kemp's [1]** 346/7 Kenedy [1] 266/23 **Kennesaw [3]** 327/19 341/11 350/5

Kentucky [1] 65/3 kept [1] 76/9 Kevin [2] 205/25 208/22

key [25] 19/1 54/11 68/8 80/10 82/6 83/8 88/11 90/12 91/21 94/18 104/7 104/12 122/10 149/18 149/19 190/1 243/16 274/6 274/7 277/5 277/5 297/9 297/18 308/11 310/12

keyboard [2] 112/23 183/24

keys [5] 277/21 308/6 310/10 310/11 316/20 kick [2] 167/17 171/15 kid's [1] 193/4 **Kim [2]** 234/20 234/21 **kind [45]** 14/25 28/13 32/3 32/7 32/19 35/17 37/3 42/24 46/13 49/4 116/15 119/1 119/15 120/14 122/20 122/22 123/6 125/16 131/2 136/3 138/9 144/6 157/16 158/15 172/7 195/16 200/7 207/11 220/4 224/14 225/25 257/17 257/18 260/3 261/15 301/18 302/9 303/18 304/18 318/23

319/25 329/7 342/25 343/1 352/5 kinds [1] 179/25

King [3] 148/17 148/19 159/9

kiosk [2] 275/22 276/13

Kirstjen [1] 59/4 Klint [2] 64/17 64/23 knees [1] 239/13 **knew [5]** 47/17 47/18

281/17 327/19 339/20 know [316] 3/18 4/15 5/9 10/2 10/11 23/4 25/15 25/22 26/18 27/4 28/11 29/16 29/18 30/16 32/11 32/14 34/3 34/9 35/23 37/22 37/24 38/2 38/11 38/12 41/18 41/21 44/25 45/22 46/13 46/21 49/4 51/1 59/22 65/9 65/10 65/12 67/19 67/20 67/21 68/21 69/5 70/3 70/15 71/12 71/14 71/15 71/21 71/23 72/4 73/6 73/11 73/12 74/14 74/22 75/11 76/15 79/5 79/10 79/16 79/17 79/19 79/23 80/2 80/6 80/13 81/2 81/12 82/7 83/5 83/9 85/23 89/5 89/25 91/6 93/3 93/12 93/13 93/14 93/16 93/17 93/19 93/20 93/22 93/22 94/8 94/11 94/12 95/21 96/13 97/4 97/17 97/18 98/11 98/22 99/12 100/2 100/12 100/14 100/16 101/3 101/8 101/14 101/14 102/8 102/11 103/17 103/18 104/7 104/11 104/13 104/13 104/19 105/1 106/13 106/20 106/21 106/21 106/25 107/14 107/18 107/19 107/23 107/25 108/1 108/2 108/3 108/3 108/4 108/6 108/6 108/6 108/18 109/2 109/5 111/2 112/15 112/18 112/19 113/1 113/4 114/24 115/17 116/20 120/1 121/20 122/6 124/23 124/24 127/6 128/14 129/4 132/15 132/22 133/4 133/12 133/13 134/19 137/20 137/23 139/22 141/7 148/14 149/12 149/15 149/25 150/16 151/5 151/6 151/10 151/14 152/6 152/7 153/8 154/3 155/2 155/13 156/5 158/7 158/13 158/15 158/21 158/24 163/23 164/3 164/6 164/6

164/11 165/6 167/3

167/5 167/8 167/8

167/9 167/23 168/1

168/7 168/16 168/18

168/18 169/15 169/22 172/7 172/14 172/20 172/22 175/1 179/14 180/6 182/25 183/25 186/16 189/8 189/10 189/14 190/15 193/1 193/3 193/4 194/9 194/22 194/23 197/19 198/16 199/7 201/5 201/15 204/13 205/2 206/14 208/7 208/14 213/10 216/7 217/7 217/9 222/4 222/10 223/22 224/4 224/15 226/4 226/11 226/11 227/4 227/6 231/9 231/12 232/4 232/14 232/23 233/3 233/9 233/13 240/21 241/16 244/14 244/16 253/5 253/5 253/11 254/24 255/25 257/1 260/17 260/19 261/19 262/1 267/4 267/7 267/16 270/11 277/4 277/15 278/3 279/11 280/1 281/1 283/6 283/21 284/8 286/10 287/8 287/11 287/12 292/13 295/8 296/10 298/11 307/1 316/5 318/10 318/22 319/4 319/11 321/8 321/12 321/23 322/14 330/10 331/21 333/12 333/24 333/24 335/14 336/16 337/14 337/14 340/1 340/5 340/14 340/17 342/9 343/1 343/8 350/21 351/3 Know.ink [3] 285/1

294/5 307/10 knowing [3] 124/18

168/22 276/4 **knowledge [2]** 18/5

known [6] 52/2 72/6 72/7 73/9 73/17 326/3 knows [3] 66/9 193/5 280/7

Kuhns [4] 87/6 94/24 105/1 108/19

LA [3] 206/11 207/3 207/4

22/24

labeled [1] 94/17 **Labor [1]** 119/9 lack [9] 26/24 45/5 88/17 88/23 88/24 89/2 90/15 345/2 345/4 ladies [1] 27/23

lagging [1] 322/16 laid [4] 62/21 218/4 221/20 298/23 landscape [1] 11/12 lanes [1] 336/13 language [23] 20/1 40/12 40/19 41/11 41/14 41/17 41/25 43/25 96/11 97/5 97/14 97/16 113/9 114/16 221/13 221/24 222/10 222/13 223/5 223/8 223/9 263/6 307/23 languages [2] 221/11 307/22

laptop [2] 190/5 190/12 laptops [2] 150/23 152/15

large [21] 49/1 62/22 81/9 93/20 101/25 102/9 106/14 147/9 210/6 222/23 224/15 225/23 237/5 237/13 240/7 253/3 253/9 261/23 267/1 301/11 311/25

large-print [1] 147/9 large-size [1] 253/9 largely [1] 326/22 larger [11] 102/2 106/19 130/1 130/2 130/4 150/9 150/10 207/5 216/22 309/14 309/15

largest [12] 38/8 120/11 148/17 159/9 159/11 204/8 206/11 206/18 240/11 257/21 261/22 266/21 **Larry [1]** 5/11 last [51] 5/7 13/20

15/10 45/21 46/3 50/9 50/18 56/23 59/3 66/10 67/11 71/1 76/8 76/23 79/5 80/5 84/14 90/1 118/21 121/18 121/25 122/2 122/14 127/22 132/14 132/19 134/25 144/11 159/13 204/4 225/18 249/13 262/10 269/21 286/20 290/17 294/15 294/22 297/15 318/7 322/18 328/17 330/20 334/19 336/3 336/12 337/13 339/7 341/2 348/3 350/9 last-minute [1] 297/15 lastly [2] 211/9 343/10 late [2] 144/20 320/17

later [4] 31/4 46/1

269/23 302/21

latest [3] 295/11

latest... [2] 303/25 314/3 launch [1] 8/25 law [29] 12/11 12/19 12/20 12/21 21/8 21/9 21/25 22/2 24/19 24/23 85/5 87/12 87/13 92/11 98/12 98/14 111/4 115/5 123/16 126/18 137/11 164/2 165/13 179/13 329/15 329/16 345/8 345/17 345/20 laws [5] 15/4 24/4 85/3 85/15 86/1 lawsuit [1] 133/22 lawyer [2] 22/4 24/14 lawyers [5] 21/19 23/10 24/22 113/13 113/16 lay [6] 110/20 174/20 177/22 186/5 186/12 188/4 layers [2] 79/12 83/1 layouts [1] 210/19 laypersons [1] 27/15 lead [2] 152/5 301/24 leader [1] 95/5 leadership [2] 16/24 325/19 leading [2] 68/11 68/22 leading-edge [2] 68/11 68/22 **leads [1]** 70/17 league [20] 16/20 16/22 16/23 17/1 17/2 17/4 17/5 17/22 17/24 17/24 18/10 18/17 18/18 19/8 19/17 20/10 20/18 20/20 30/5 58/4 learn [5] 22/20 115/12 131/4 136/5 144/7 learned [3] 131/11 268/13 331/22 learning [1] 122/22 lease [2] 138/13 138/19 leased [1] 141/2 leasing [2] 138/17 139/20 least [13] 10/8 36/6 38/10 46/3 60/12 67/12 98/24 122/7 122/14 130/10 198/2 325/21 350/21 leave [7] 26/5 29/11 90/4 189/2 279/8 325/9 335/12 led [3] 50/3 60/13

349/25

ledger [1] 24/21

Lee [11] 6/2 48/2 48/20 78/21 200/12 249/20 249/22 251/20 283/3 287/16 313/9 leeway [1] 130/6 left [21] 12/2 16/5 69/18 76/7 83/21 87/5 87/13 94/15 119/24 162/14 182/14 182/20 191/10 194/10 209/17 221/4 223/18 267/20 280/5 280/9 294/10 left-hand [3] 209/17 280/5 280/9 legacy [2] 207/16 301/19 legal [8] 10/12 12/3 40/11 45/12 84/25 138/20 333/16 339/22 legally [3] 95/22 114/8 114/14 legend [2] 2/1 154/5 legislation [4] 18/24 121/17 135/4 137/5 legislative [5] 76/24 113/11 120/15 121/2 124/25 legislatively [2] 77/13 77/18 legislature [5] 4/16 78/14 114/11 139/5 176/18 leas [1] 174/11 length [1] 263/12 less [13] 60/17 62/7 120/8 129/25 131/19 134/1 142/4 165/16 176/1 194/10 195/12 240/9 312/23 lesser [1] 41/18 let [40] 3/3 36/14 36/15 38/22 39/5 40/5 40/23 48/2 48/19 52/21 55/2 71/15 76/9 76/17 82/3 86/9 101/18 117/1 144/3 160/6 160/20 173/14 205/16 217/4 220/10 224/4 238/19 247/8 257/15 257/15 258/19 267/4 271/2 279/11 290/5 292/13 311/3 317/20 330/2 350/21 let's [47] 33/4 49/17 67/22 70/25 76/9 76/17 78/15 78/15 78/16 84/17 98/7 117/1 135/14 176/20 180/18 187/4 192/13 194/16 207/18 211/16 216/3 219/4 220/3 222/3 223/24 224/9 224/17

257/20 257/24 258/20 266/2 271/16 272/18 278/11 278/15 280/1 281/1 287/21 289/18 292/3 292/19 296/11 307/6 312/25 321/20 321/21 341/16 lets [1] 224/25 letter [2] 345/13 350/10 **letting [3]** 238/17 244/16 319/11 level [21] 5/1 16/1 18/12 26/12 57/3 70/1 140/15 168/25 178/19 179/9 212/18 215/21 215/22 252/25 260/3 277/8 277/8 277/11 301/3 301/20 308/1 levels [5] 16/25 274/1 277/7 277/19 303/12 leverage [1] 151/3 leveraged [1] 326/17 leveraging [1] 148/9 **Lewis [3]** 21/7 21/8 117/12 lib [1] 207/24 **Libertarian [2]** 286/15 341/13 license [4] 28/22 181/11 181/13 203/21 licensed [1] 88/1 Lichtenheld [1] 267/5 lid [2] 188/5 190/2 life [5] 14/6 132/18 150/25 154/8 312/4 lift [2] 189/24 239/8 lifted [1] 174/16 light [9] 8/6 8/9 107/1 134/19 178/4 178/5 182/14 206/14 273/21 light-colored [1] 107/1 lighting [1] 106/14 lightweight [2] 209/13 219/8 like [138] 13/6 24/7 24/17 28/12 31/22 31/23 32/19 35/12 47/23 50/14 51/3 52/21 53/13 54/20 56/10 58/14 65/4 65/9 68/7 71/7 78/10 79/16 81/14 82/11 82/15 84/15 89/22 93/24 94/14 96/6 98/3 98/5 101/25 103/25 105/4 112/25 113/13 117/4 118/17 123/14 126/22 127/1 129/11 129/24 131/25 136/13 138/16 139/25 140/2 143/12 145/11 146/12 152/10 152/20 154/23 156/21 159/18

160/11 163/1 165/19 166/17 169/5 172/14 172/18 173/25 177/22 179/14 183/3 183/23 186/4 186/6 186/12 189/18 192/23 194/13 198/22 200/13 201/25 202/10 211/5 212/19 217/1 218/20 219/15 219/23 219/25 221/5 223/12 229/11 229/19 231/6 233/1 233/8 234/24 235/6 239/8 239/11 240/4 240/8 242/2 242/14 243/21 244/7 244/9 246/7 247/16 248/9 248/18 253/3 253/6 253/18 257/11 259/24 261/20 261/25 262/12 263/9 267/22 274/10 275/25 281/10 283/24 301/7 303/16 308/12 308/13 321/8 331/18 335/2 339/1 341/15 342/14 343/16 343/19 344/17 345/23 345/24 350/23 liked [2] 178/11 178/11 likely [3] 200/16 200/22 201/2 likes [2] 31/20 183/20 Likewise [2] 69/20 336/9 limb [1] 128/22 limit [2] 132/25 226/24 **limitation [1]** 325/13 limitations [3] 50/22 73/18 147/12 limited [5] 61/25 189/10 191/17 197/12 321/21 limiting [19] 19/22 58/3 74/10 74/18 75/5 75/13 75/15 76/23 77/1 77/5 77/10 77/19 77/21 78/12 197/4 197/6 225/15 303/7 332/5 limits [1] 20/15 **Lincoln [1]** 193/15 **Lindeman [2]** 57/15 57/17 line [8] 89/12 110/6 137/8 167/8 197/21 286/8 288/3 288/20 lines [13] 15/15 15/18 26/15 61/16 66/22 89/10 89/10 92/6 141/12 159/2 281/20 281/21 282/4 lineup [2] 6/14 8/2 linger [1] 31/19 lingering [1] 60/19

Linux [1] 174/24 liquor [1] 119/25 list [11] 23/14 25/14 25/15 29/7 29/7 44/14 45/24 183/1 220/18 327/3 349/12 listed [1] 28/16 listen [2] 117/11 246/21 listened [1] 116/24 listening [1] 167/14 literacy [1] 41/8 literally [8] 78/25 115/10 180/25 207/25 236/17 239/8 239/15 311/20 litigated [1] 12/15 litigating [1] 12/5 litigation [9] 15/7 21/11 21/17 24/16 24/16 25/3 45/14 46/7 87/13 little [73] 3/14 9/10 12/22 24/5 31/24 36/4 40/10 49/23 51/19 57/24 84/7 84/25 98/12 98/13 100/3 103/7 103/11 116/8 117/21 119/1 119/3 122/25 126/3 126/21 130/5 136/20 141/19 148/2 148/13 154/4 167/5 172/10 173/17 176/20 178/4 178/17 178/17 178/19 179/6 180/17 182/5 182/25 187/9 189/16 194/10 198/23 201/24 206/7 209/22 211/14 218/10 222/8 235/4 235/5 235/16 236/14 240/14 243/11 245/8 258/20 266/2 266/9 269/23 272/13 273/2 273/23 279/2 290/6 296/19 301/12 302/21 310/5 321/11 live [11] 26/25 84/4 153/14 172/4 176/11 196/16 235/2 268/9 327/9 330/25 335/17 lived [1] 338/21 lives [1] 187/18 living [2] 87/16 127/10 **Liz [6]** 332/12 334/18 334/18 334/18 334/21 335/21 **LLP [1]** 12/15 load [4] 228/8 262/21 262/22 276/10 (27) latest... - load

lingo [1] 223/12 link [4] 42/13 84/11

112/7 153/14

loaded [1] 128/23 loads [1] 218/3 loan [1] 273/16 lobby [1] 325/18 lobbying [1] 19/1 lobbyist [1] 121/14 lobbyists [1] 330/9 local [26] 4/15 4/19 4/21 4/23 4/25 16/24 17/17 52/13 60/14 74/8 77/4 85/10 103/10 103/17 104/13 104/14 121/21 122/6 122/7 134/21 137/18 140/15 165/5 230/10 324/23 327/16

localities [2] 50/25 135/10

localities elections [1] 50/25

locals [1] 116/8 located [1] 89/6 location [16] 20/10 37/25 162/23 169/25 198/3 199/4 203/21 203/22 241/25 278/22 282/14 282/22 283/14 292/15 293/2 310/12 locations [8] 30/21 261/1 282/18 282/19 299/8 311/15 337/18 347/12

lock [5] 239/18 273/3 274/14 277/12 281/24 locked [4] 186/3 219/3 309/21 316/6

locking [1] 281/22 locks [4] 274/6 274/7 281/22 282/3

log [8] 112/8 155/16 155/22 211/10 218/24 218/25 252/5 277/18

log-in [2] 218/24 277/18

log-on [1] 218/25 logged [2] 155/21 219/1

logic [1] 256/23 logically [2] 36/11 36/15

logistic [1] 226/12 logistics [1] 7/3 logs [1] 252/2 long [29] 20/13 23/22 25/18 28/12 28/25 61/15 89/10 89/16 95/22 96/18 97/25 132/14 138/9 159/3 159/4 163/6 163/9 176/11 200/19 205/7 206/10 215/12 215/13 245/5 260/19 263/12 296/10 334/4 351/25 longer [11] 15/14 15/18 15/22 82/6 132/13 133/2 150/25 182/16 182/22 198/23 284/1

longest [1] 249/8 look [74] 6/23 21/3 22/22 23/7 33/7 34/12 34/24 46/18 49/5 52/7 53/1 60/7 69/20 71/15 71/17 72/25 88/18 89/8 89/19 98/7 100/8 120/10 124/11 124/12 128/8 152/9 153/15 153/24 155/1 156/13 156/21 157/17 159/23 163/19 164/1 164/6 164/21 165/21 165/23 165/24 166/1 166/2 166/4 166/16 168/24 174/13 179/7 191/2 191/3 191/3 191/21 196/24 201/8 206/19 211/14 212/21 236/18 242/19 242/25 256/11 265/5 272/2 297/23 297/23 304/2 307/14 312/15 313/20 319/6 321/15 321/25 323/9 323/9 341/23 looked [4] 134/10

137/1 165/11 166/7 looking [45] 4/12 22/24 25/8 40/16 45/12 60/7 71/18 76/3 78/6 80/7 83/4 83/5 96/21 98/6 106/17 107/5 107/6 108/6 108/7 146/8 153/4 161/17 176/1 181/24 199/7 240/22 247/14 261/16 265/17 298/16 304/4 312/17 312/23 315/18 318/19 318/23 319/20 321/8 321/10 338/6 338/8 339/6 342/7 350/20 351/1

looks [8] 52/2 81/13 82/21 149/14 198/22 219/23 290/5 331/17 Los [5] 228/15 228/16

228/18 228/20 229/5 lose [4] 39/10 51/19 188/12 228/5

losers [3] 192/5 192/7 192/9

lost [1] 89/22 **lot [83]** 3/20 15/9 22/21 22/23 23/8 26/5 34/6 35/14 37/19 42/21 44/20 45/3 45/17 46/21 52/21 66/15 67/15 79/25 82/5 82/9 89/5 89/21 92/23 96/6 97/4 97/21 101/13 102/18 105/22 106/15 106/16 106/24 120/2 120/18 125/8 126/1 128/4 137/14 145/18 147/6 147/7 147/13 148/11 148/24 151/16 154/18 154/19 165/3 166/25 167/6 172/8 172/15 179/1 179/2 186/24 215/20 216/23 216/24 223/6 223/6 231/2 235/14 235/22 237/3 238/14 238/15 247/23 252/9 261/17 262/17 265/20 268/10 275/6 319/21 333/10 337/9 337/11 339/5 341/21 342/24 343/13 347/14 348/6

lots [2] 128/18 188/22 Lou [3] 86/10 90/5 109/21

Lou Ann [1] 86/10 Louis [1] 174/3 Louisiana [4] 295/11 297/7 297/9 305/6 love [10] 13/11 17/19 22/6 102/15 117/2 294/24 322/17 343/20 344/12 349/20 low [15] 35/25 36/5 36/12 93/9 93/20 94/3

107/7 129/7 167/9 169/24 226/22 227/20 248/22 307/25 315/23 low-cost [1] 167/9 low-paper [1] 315/23 low-vision [1] 93/9

lower [4] 15/19 42/12

302/1 302/1 lower-income [1] 15/19

lucky [1] 24/25 lunch [5] 144/5 144/6 144/7 144/13 189/20 lunch-and-learn [1]

144/7

luncheon [1] 144/7 Lynn [16] 22/24 23/3 74/7 137/17 164/16 230/15 230/20 252/15 252/22 253/17 255/23 281/13 289/13 316/10

324/20 333/15 **Lynn's [1]** 333/9

М

ma'am [4] 138/5 167/19 346/11 346/13 Mac [10] 234/15 234/16 235/3 235/12 248/16 259/24 263/20 323/19 323/25 323/25 Mac's [2] 235/3 263/14 machine [63] 24/18 26/1 26/2 26/6 27/21 35/11 36/13 37/3 39/5 40/17 42/24 70/4 90/20 98/24 103/13 103/21 104/10 104/11 104/16 104/20 104/21 104/23 107/23 126/24 142/22 150/7 150/8 158/23 160/13 177/23 178/1 186/1 186/6 186/13 186/17 188/10 195/20 195/23 200/15 210/20 213/25 214/2 218/18 220/24 228/16 231/17 232/7 232/10 232/18 232/25 233/1 238/17 249/5 281/17 289/4 290/23 305/12 305/13 313/14 315/1 315/9 331/21 333/4

machine's [1] 29/2 machinery [2] 28/5 135/20

135/20 machines [55] 23/25 25/22 27/14 29/24 37/18 37/24 40/16 42/10 45/3 45/11 49/6 56/13 57/4 61/7 61/8 90/16 90/21 91/4 91/10 105/23 107/22 121/9 121/11 121/19 131/13 131/22 132/3 132/21 134/9 140/21 141/15 142/8 142/23 160/7 160/17 160/18 211/6 213/22 213/24 216/24 217/1 217/12 220/14 220/19 227/3 227/4 232/12 257/4 303/19 332/25 333/10 335/4 343/2 350/7 350/11 made [29] 7/11 18/23 37/19 40/12 72/17 94/22 96/8 126/6 137/20 140/4 142/17 155/22 179/8 185/19 215/15 223/19 237/22 244/14 245/2 245/20 245/25 246/2 246/9 246/9 246/20 257/13 305/3 309/1 309/3

Madison [1] 320/20

magic [1] 134/14 magnification [1] 112/21

mail [15] 35/2 74/19 108/7 111/21 111/23 111/25 112/7 112/24 154/19 165/10 172/8 180/5 211/11 300/12 300/16

mailed [2] 300/19 300/20

main [2] 84/7 315/12 mainly [1] 290/6 maintain [7] 72/11 107/18 108/4 147/16 150/17 160/10 160/19 maintaining [1] 160/17

maintenance [10] 53/18 153/9 160/14 214/4 229/17 229/22 266/16 273/3 273/4 273/18

major [3] 88/15 273/22 336/24

majority [2] 90/16 253/11

make [116] 8/10 9/25 10/24 12/8 13/11 22/13 24/10 25/11 26/23 28/6 29/14 35/3 36/22 39/2 42/25 44/2 47/16 47/18 53/25 59/5 62/18 68/16 71/5 73/13 74/23 75/25 80/8 81/6 81/8 86/6 86/24 92/19 92/20 102/6 103/21 105/16 107/12 107/24 108/19 110/16 111/3 112/16 113/8 113/16 113/21 115/13 119/3 124/14 132/21 135/11 136/3 136/17 140/12 144/2 146/20 150/16 157/11 159/1 160/2 160/6 160/20 162/6 165/12 165/18 169/16 172/14 172/19 177/16 185/7 185/15 187/12 190/8 201/1 205/2 209/7 209/18 215/5 225/20 238/17 238/20 238/24 244/1 244/8 244/22 245/5 245/9 245/20 249/25 255/2 257/11 266/25 268/6 271/4 286/18 288/3 288/10 292/3 294/20 306/7 306/19 308/18 309/5 326/11 328/8 329/6 329/7 330/8 334/13 337/2 337/3 337/6 339/8 340/20 347/10

М make... [2] 348/4 350/13 makes [9] 157/15 192/6 236/16 254/20 268/22 279/17 332/3 340/17 350/24 making [33] 3/21 6/24 32/8 38/12 38/12 38/17 41/23 43/16 53/19 81/3 83/4 85/16 99/22 104/21 106/5 106/21 107/6 111/8 132/14 133/21 136/12 149/19 203/12 205/10 217/3 244/25 260/19 276/5 294/17 308/23 335/16 338/5 350/25 malware [3] 49/4 49/6 49/8 manage [5] 153/1 217/22 218/8 269/16 278/20 management [17] 56/11 82/24 82/25 169/19 210/10 210/11 210/16 210/17 210/20 216/4 256/12 277/16 277/17 291/7 295/18 296/1 315/13 manager [6] 86/13 235/13 264/23 295/21 295/23 295/24 managers [1] 234/22 managing [1] 22/1 mandate [4] 72/11 77/13 77/19 77/23 **mandated** [2] 87/8 115/5 manner [2] 13/8 57/8 manually [4] 147/12 201/20 285/5 293/15 manufacture [2] 265/24 311/24 manufacturer [1] 261/22 manufacturing [1] 226/13 many [44] 4/16 8/4 15/20 19/12 22/25 52/13 54/7 54/10 58/9 58/17 59/14 63/9 67/17 71/18 75/9 75/12 75/13 88/22 88/25 89/1 90/15 90/20 100/5 107/24 108/2 116/22 131/3 136/24 137/3 153/7 158/25 191/2 198/15

198/21 198/25 221/11

232/16 248/23 257/21

270/10 285/1 335/2

339/1 342/19 maps [1] 203/25 March [2] 51/2 230/11 margin [4] 32/12 164/4 218/22 301/23 marginalized [1] 92/15 margins [1] 164/5 Marietta [1] 341/7 mark [56] 37/9 38/7 38/18 57/15 57/17 61/6 61/24 62/10 90/9 90/11 91/18 91/21 99/9 99/11 110/2 112/9 112/21 112/24 115/13 151/22 162/23 166/20 174/12 174/15 176/9 176/9 176/10 176/11 177/8 178/2 178/8 178/15 179/22 180/16 180/22 181/1 181/9 181/17 182/13 182/15 182/23 184/20 185/10 188/4 188/7 189/22 189/24 210/4 224/3 226/5 242/11 250/23 280/1 280/13 302/4 306/21 Mark's [5] 182/3 183/2 183/18 183/25 186/12 marked [41] 37/23 61/23 64/10 90/22 90/25 91/3 99/10 137/8 200/24 232/8 237/8 237/9 237/19 254/1 254/24 255/2 255/5 255/16 255/17 280/22 287/19 287/22 287/22 288/11 288/16 288/18 288/19 288/25 289/5 289/10 289/19 301/16 302/7 302/14 305/20 305/22 306/1 310/25 321/3 334/5 341/19 marker [5] 177/14 192/19 204/7 254/17 291/1 market [1] 297/23 marking [54] 36/10 60/25 61/5 61/14 62/3 62/8 62/18 63/23 90/19 91/4 93/7 108/12 112/5 150/22 162/12 166/18 188/1 209/10 209/12 213/6 213/12 240/14 240/23 241/1 241/6 241/9 242/11 242/22 242/23 246/3 255/12 257/10 257/14 258/22 258/24 259/3 262/20 262/23 269/19 272/9 278/24 279/18 285/11 289/3 291/14 291/21 299/15 301/15 302/14

305/11 305/22 311/1 329/21 349/4 marks [7] 59/19 60/2 152/2 153/23 163/19 239/2 288/4 **Martin [1]** 155/18 Mary [8] 1/7 22/18 22/20 78/8 80/24 81/3 353/17 353/18 Maryland [4] 112/4 113/3 249/16 249/17 massive [1] 340/12 master's [1] 88/4 match [2] 115/22 191/13 matches [2] 143/20 231/19 matching [1] 73/13 material [2] 2/7 321/23 materials [1] 41/15 math [3] 157/8 158/6 166/12 Matt [3] 295/2 296/7 296/12 matter [9] 20/22 37/23 55/12 80/19 82/7 177/20 177/21 186/13 254/2 matters [3] 6/16 12/16 333/25 maturing [1] 65/16 maximum [1] 314/4 may [81] 9/11 15/3 16/8 24/14 25/23 27/1 32/3 35/22 43/17 45/20 63/25 64/4 66/18 67/22 75/2 75/14 78/22 90/23 94/2 94/4 94/5 94/5 95/16 116/10 119/7 119/18 120/1 125/1 125/2 125/6 125/8 125/16 125/20 126/4 126/5 130/5 130/11 130/20 133/3 138/6 138/10 141/12 142/16 143/14 155/4 156/8 156/9 158/1 165/19 172/9 172/10 178/4 182/4 183/23 184/17 189/19 191/23 195/10 196/3 201/24 213/25 215/14 217/6 246/6 253/13 258/20 258/21 258/25 259/1 264/15 270/18 279/1 282/2 282/19 282/21 282/23 283/21 301/1 301/17 311/6 321/19 maybe [27] 23/9 24/4 35/9 35/23 40/13 60/16 60/17 71/23 78/4 119/17 123/7 131/14

144/17 196/18 198/2 222/12 240/25 270/16 283/22 298/11 306/8 317/25 337/8 349/11 MBA [1] 67/6 McCoy [3] 110/13 113/8 253/13 McMahan [3] 1/7 353/17 353/18 McNamara [1] 16/20 McWethy [3] 330/16 330/22 330/24 me [86] 3/3 4/3 9/21 14/8 22/15 27/24 28/12 48/3 48/19 49/20 50/14 52/21 55/2 57/24 64/17 71/7 79/21 82/3 86/9 87/5 87/20 89/24 99/9 113/13 135/24 136/21 144/3 144/11 145/13 152/5 153/12 154/3 155/19 160/6 160/20 161/19 167/25 168/9 174/4 176/3 177/5 184/1 184/2 185/10 198/9 200/5 200/19 201/3 203/22 205/2 215/14 217/4 222/8 224/13 230/17 242/19 242/21 243/6 243/17 247/8 257/15 257/15 258/19 271/2 281/4 287/11 289/21 290/5 309/5 311/3 316/13 318/2 320/6 320/16 320/17 322/10 322/24 323/8 330/20 334/18 340/17 341/3 342/8 345/23 350/24 351/13 Meagher [1] 12/15 mean [28] 24/20 26/25 28/12 32/4 45/11 47/13 81/5 82/6 82/13 84/16 92/7 98/13 107/14 107/16 111/2 128/20 130/2 133/7 139/1 160/9 195/2 197/9 216/8 227/20 229/22 251/10 312/13 326/16 meaning [4] 216/19 223/18 231/6 329/8 meaningful [4] 321/5 321/15 321/22 322/8 means [18] 14/18 14/23 20/4 26/25 31/3 47/4 49/4 60/8 65/1 99/6 99/14 133/2 154/5 189/11 270/9 274/17 325/14 326/9 meant [2] 11/11 11/14

131/19 131/21 132/12 measures [3] 7/24 9/11 16/14 mechanism [3] 25/6 67/5 281/22 media [6] 96/7 147/21 239/21 274/12 309/21 337/16 mediate [1] 54/12 mediated [1] 54/25 **mediating [1]** 55/1 mediation [1] 51/17 medical [1] 311/25 medieval [1] 273/25 medium [2] 114/18 253/9 meet [7] 110/8 110/9 138/12 206/4 216/16 219/20 297/23 meeting [25] 1/6 3/4 3/9 3/21 4/13 5/7 6/25 7/4 8/1 8/19 9/4 42/1 103/13 122/16 134/25 144/15 267/23 317/6 327/17 341/16 344/20 350/3 350/13 350/14 353/4 meetings [2] 343/14 343/16 member [6] 21/6 21/20 144/6 176/19 324/11 324/23 member-only [1] 144/6 members [37] 3/19 4/8 4/16 4/24 7/25 8/14 9/19 10/20 11/8 11/25 12/25 19/10 19/12 50/23 50/24 51/5 51/7 74/3 74/5 86/6 104/8 110/11 127/13 146/25 179/4 194/20 234/9 234/14 296/9 303/1 319/19 324/25 343/13 345/22 350/3 351/25 352/2 memory [5] 258/13 258/15 259/17 259/25 260/2 mental [4] 87/16 88/6 94/25 95/13 mention [8] 8/18 9/24 10/10 18/18 27/11 46/12 85/23 290/5 mentioned [21] 7/10 7/13 10/19 21/10 27/13 53/21 85/14 85/19 94/7 129/18 133/10 147/7 147/8 149/12 207/3 216/4 218/9 244/5 278/12 283/4 315/1 mentioning [1] 141/13 mess [1] 318/1 measure [2] 34/7 46/12 message [1] 224/20

М messaging [1] 224/19 met [1] 177/17 metal [2] 230/11 333/14 Method [1] 213/11 metro [3] 129/23 168/12 282/21 Metropolitan [1] 213/23 Mexico [1] 297/7 mic [12] 8/6 9/22 22/12 28/4 40/2 40/23 144/25 160/5 163/14 249/23 251/21 324/11 Michigan [1] 305/2 microphone [6] 86/6 133/18 135/24 152/14 199/18 313/12 microphones [1] 8/5 middle [4] 24/9 43/7 135/6 147/19 midst [1] 207/8 Midwest [2] 176/7 202/21 might [38] 23/8 27/5 31/9 40/5 40/19 80/18 89/14 89/21 93/4 97/3 97/24 99/21 100/9 105/11 105/14 128/21 128/22 132/15 133/11 140/18 141/2 145/22 154/23 155/1 155/2 156/13 156/18 158/1 202/11 208/12 211/20 232/14 252/1 319/6 319/9 335/10 336/12 337/6 might've [3] 132/19 156/18 324/8 migrated [1] 297/21 Mike [4] 49/18 49/20 58/9 342/10 miles [1] 274/3 military [3] 101/7 111/23 192/14 million [29] 124/8 126/11 129/24 131/1 135/15 139/16 185/6 207/5 208/15 226/23 226/25 227/17 227/19 248/21 248/22 266/22 270/1 270/5 270/16 282/11 282/13 298/13 312/17 312/24 323/6 323/7 323/11 323/13 336/14 mind [20] 9/17 12/23 27/14 38/11 42/4 42/23 44/5 60/12 76/6 109/23

144/1 185/6 185/6

212/1 236/16 246/15 268/9 285/20 286/12 342/23 mindful [1] 108/17 minds [1] 211/17 mine [1] 334/1 mini [3] 189/16 189/18 195/12 minimize [2] 213/17 322/5 minimizes [1] 213/18 minimum [2] 312/4 314/4 minority [2] 23/21 24/1 minus [1] 131/2 minute [6] 4/4 38/23 51/20 224/3 253/22 297/15 minutes [15] 8/23 15/22 144/17 144/18 144/19 162/14 165/23 166/7 174/22 176/1 194/10 317/16 341/17 348/8 348/8 mirror [1] 129/1 miscast [1] 251/24 mischievous [1] 143/13 miscounted [1] 335/6 misinformation [1] 330/4 misinterpreting [1] 345/8 mismarked [1] 250/18 **mismarking [2]** 62/25 136/15 mispronounced [1] 330/20 misquoting [1] 345/8 miss [3] 35/4 52/23 234/18 Miss Kathy [1] 234/18 missed [1] 157/5 mission [1] 51/15 Mississippi [1] 65/2 **Missouri [11]** 105/9 174/2 176/6 176/16 176/18 179/2 198/11 200/2 202/22 203/3 203/23 mistake [5] 178/21 179/7 190/8 246/9 255/7 mistakes [1] 329/7 misunderstanding [2] 288/23 324/9 Mitch [1] 296/2 mitigate [2] 79/13 81/20 mitigates [1] 84/13 mitigating [2] 54/16 81/6

mitigations [1] 51/9 moat [1] 274/3 mobile [1] 102/14 mock [2] 17/16 230/6 mode [3] 169/12 275/23 276/13 model [2] 297/10 297/16 modeling [1] 275/14 models [3] 132/12 273/16 304/14 moderate [5] 6/4 6/9 6/12 84/22 116/5 moderating [1] 6/1 moderator [1] 47/11 modern [3] 69/20 215/9 268/17 modification [1] 306/7 modifications [1] 305/3 modify [6] 155/7 218/5 225/1 308/21 308/22 309/11 modular [1] 219/19 **module [3]** 300/23 301/4 302/25 moisture [1] 172/1 **mom [1]** 183/15 mom's [1] 320/16 moment [5] 118/17 209/22 222/9 233/23 263/25 momentarily [1] 294/16 moments [1] 143/23 **Monds [1]** 170/11 money [16] 25/2 27/7 127/6 127/8 127/12 128/19 129/10 132/4 138/8 140/12 140/14 168/15 271/18 273/18 329/17 333/11 monitor [1] 190/22 monitoring [1] 104/20 month [1] 133/25 months [3] 124/11 327/21 336/16 moon [1] 80/24 more [94] 3/14 9/15 13/21 18/7 20/6 20/9 24/5 33/5 33/6 34/11 36/4 36/9 39/19 43/13 50/23 53/10 55/10 60/16 69/20 73/6 74/25 77/10 81/18 81/18 82/1 82/5 88/19 88/19 95/15 99/22 101/15 102/3 103/22 104/4 107/3 107/3 129/13 130/1 130/5 132/22 132/24 133/1 136/2 142/4 156/2 164/10 169/18

169/24 172/9 172/15 175/13 184/22 184/24 189/19 197/17 199/10 199/12 200/13 208/13 209/22 211/15 212/20 215/9 215/10 217/6 218/8 219/2 225/6 228/11 231/2 231/22 252/8 254/12 255/21 256/25 261/21 269/23 273/19 280/12 286/11 296/24 297/22 301/12 313/6 318/18 327/21 342/20 343/8 343/19 346/14 349/1 349/2 350/21 351/17 Morgan [3] 320/24 322/18 327/10 morning [32] 3/4 3/7 3/19 4/1 4/12 5/18 6/25 7/6 7/7 8/12 10/1 10/19 11/11 11/20 13/3 17/18 21/3 47/24 48/1 49/19 57/16 74/7 84/20 116/11 118/19 144/12 165/15 165/20 236/18 257/25 264/22 342/11 most [51] 13/19 13/19 16/15 18/7 27/2 27/3 44/5 48/9 57/2 60/11 61/22 62/9 64/9 75/5 77/18 106/11 108/24 108/24 124/6 127/10 127/11 129/17 138/5 139/7 151/19 154/20 164/1 171/8 174/18 182/11 215/23 232/23 235/9 240/11 249/9 249/11 256/17 257/8 260/23 261/3 275/1 275/7 275/7 276/20 295/10 298/18 301/7 303/9 324/25 325/11 351/8 mostly [4] 48/7 50/8 74/20 347/22 motherboard [1] 273/9 motion [4] 278/9 337/1 346/3 346/7 motivation [1] 55/8 motivations [1] 55/14 motorcycles [1] 208/1 motto [1] 304/19 mouth [1] 322/19 move [40] 4/9 5/8 5/16 5/21 13/12 20/19 38/25 40/25 44/3 44/4 46/20 47/19 49/17 64/13 72/7 77/8 78/3 78/20 81/21 84/17 123/9 130/17 139/20 172/25 184/15 220/6 252/14 261/10

267/17 271/8 279/6 283/5 291/14 305/19 307/5 308/22 310/15 313/8 317/5 336/1 moved [1] 10/23 movement [4] 90/13 125/8 126/3 350/1 moves [1] 78/6 moving [12] 8/21 20/16 37/2 77/22 78/13 118/13 138/3 146/9 159/2 169/8 262/18 267/19 Mr [3] 47/20 117/11 341/2 Mr. [19] 3/24 7/9 73/16 78/23 78/23 113/8 123/11 129/12 137/24 145/4 164/17 212/14 262/11 264/7 293/11 295/20 337/14 342/10 343/24 Mr. Chair [1] 164/17 Mr. Chairman [5] 3/24 145/4 262/11 264/7 293/11 Mr. Edwards [2] 129/12 137/24 Mr. Garcia [1] 78/23 **Mr. Harvey [1]** 337/14 Mr. McCoy [1] 113/8 Mr. Mike [1] 342/10 Mr. Scott [1] 295/20 Mr. Secretary [1] 7/9 Mr. Shelly [1] 212/14 Mr. Smith's [1] 73/16 Mr. Smythe [1] 343/24 Mr. Walker [1] 78/23 Mr. Wells [1] 123/11 Mrs. [1] 73/15 Mrs. Jones' [1] 73/15 **Ms [19]** 3/16 86/13 87/1 87/18 87/25 91/23 94/24 95/24 101/20 102/21 103/24 105/1 109/21 111/18 117/11 117/12 137/16 257/20 285/18 **Ms. [3]** 106/7 108/19 109/16 **Ms. Jones [2]** 106/7 109/16 **Ms. Kuhns [1]** 108/19 **much [57]** 5/2 13/1 23/24 24/3 27/7 41/18 44/9 53/1 58/6 71/4 79/4 101/15 103/22 103/22 107/24 120/25 132/24 144/12 145/3 145/18 146/19 158/2 168/1 168/24 171/19 172/25 173/1 194/23

М

much... [29] 204/21 205/14 215/8 215/8 226/17 228/16 229/7 229/23 233/18 238/25 248/16 282/5 308/13 310/7 316/25 321/10 323/6 327/8 327/12 328/11 328/13 330/10 331/8 336/9 338/19 338/23 340/24 345/4 346/21

multiple [9] 161/9 175/18 298/17 299/3 299/8 301/23 303/12 307/22 348/23

Multistate [1] 50/11 **Municipal [4]** 5/10 119/14 119/20 121/6 municipalities [1] 129/3

municipals [1] 120/3 **Murphy [2]** 145/10 157/23

Muscogee [6] 6/10 111/17 116/4 117/23 118/6 136/22

must [15] 13/17 15/1 41/10 56/20 59/8 59/8 59/16 59/18 60/2 115/8 117/15 325/3 325/11

325/15 332/4 **my [144]** 5/23 7/12 7/13 7/20 10/6 10/17 12/2 22/17 22/19 22/25 22/25 27/17 27/23 35/1 42/5 45/17 45/24 46/24 46/25 48/2 48/19 49/11 49/12 49/13 49/15 49/20 49/23 57/16 57/25 64/23 66/5 66/9 74/4 76/7 77/3 83/21 83/21 84/20 86/9 87/5 87/5 87/5 99/9 102/13 110/25 112/19 112/20 112/20 112/23 113/14 114/1 115/11 117/22 118/1 118/15 118/19 119/4 119/13 122/15 129/9 131/10 132/25 135/24 138/7 139/9 139/11 139/22 145/10 145/15 145/20 152/14 168/13 168/17 168/20 169/2 173/25 174/11 176/9 176/14 177/7 183/15 183/25 186/17 189/13 189/14 190/19 190/20 192/3 193/4 198/13 198/13 203/21 205/25 206/8 208/23

215/11 234/9 234/24 235/12 242/15 242/20 242/23 255/6 256/21 260/16 261/12 264/7 264/22 268/9 284/14 286/12 286/17 295/2 295/12 297/18 297/22 306/19 307/14 308/11 308/21 308/23 308/24 309/5 309/6 309/7 318/4 319/18 319/18 320/15 327/3 328/19 332/19 333/8 333/22 333/23 337/21 342/14 344/13 348/3 348/12 351/4 351/18 353/5 353/7

myself [2] 48/19 117/19

mysteriously [1] 63/14

N

name [51] 29/6 31/14 45/24 46/14 46/17 48/2 48/19 49/20 57/16 64/23 66/5 84/20 106/1 106/2 117/22 118/19 137/9 145/10 176/14 181/24 182/9 183/25 198/9 205/25 208/23 222/23 234/9 234/24 235/12 264/8 264/22 295/2 307/15 317/11 317/17 318/1 318/4 320/6 324/14 327/6 328/17 328/19 330/21 331/10 332/18 334/19 336/3 341/2 344/10 344/13 347/1

name's [1] 332/19 **named [1]** 25/1 names [2] 184/5 338/8 Nancy [21] 6/10 111/16 116/4 117/22 122/15 122/19 128/12 128/12 128/13 130/19 131/14 133/20 141/12 142/16 142/23 142/24 163/12 199/14 284/16 286/21 314/21

nation [4] 97/22 98/10 207/6 336/20

national [16] 16/25 17/4 17/5 17/6 18/20 50/4 52/15 57/19 58/14 58/15 65/7 86/11 86/14 103/4 103/6 295/23

nationwide [2] 78/25 267/15

native [1] 344/14 nature [3] 93/24 124/1 140/4

navigate [6] 98/10 145/13 183/17 184/10 222/22 225/3

navigating [1] 308/8 **navigation [2]** 148/10 222/20

nearest [1] 214/16 nearly [1] 17/25 Nebraska [2] 235/20 240/9

necessarily [6] 29/20 38/6 46/5 133/8 212/16 232/3

necessary [4] 15/22 16/3 161/9 296/15 **need [77]** 15/15 25/13 25/15 26/20 38/4 43/10 44/4 54/24 56/3 65/17 77/8 77/8 77/9 82/19 82/22 83/8 83/19 89/7 89/17 89/20 102/6 102/17 107/11 111/11 119/4 136/7 142/10 147/11 164/13 187/6 197/17 211/6 214/10 220/15 228/11 228/11 245/5 250/22 252/8 259/17 262/7 266/10 271/6 273/4 275/11 275/21 282/16 284/1 284/4 288/10 312/21 318/18 318/23 318/24 319/1 319/7 319/9 319/9 322/22 323/14 327/18 329/3 329/6 329/9 329/18 329/24 330/6 330/7 330/8 330/10 334/10 342/5 342/15 347/24 349/3

350/20 351/17 needed [4] 34/7 120/17 209/16 329/5

needing [1] 14/8 needs [30] 15/6 30/17 30/18 30/18 33/5 52/23 54/23 94/19 97/9 97/10 99/7 99/8 101/20 110/8 110/9 113/19 115/16 120/2 127/6 141/24 153/9 153/25 219/13 219/21 232/1 244/17 271/13 283/7 299/21 305/4

netflow [1] 52/4 network [3] 49/5 52/5 56/6

networked [2] 190/6 216/7

networks [1] 52/20 **neutral** [1] 15/3 Nevada [3] 297/7 305/5 316/3

never [14] 32/21 72/18 | night [18] 28/14 56/9 79/18 79/22 79/22 153/2 222/5 225/17 239/20 281/11 281/13 286/1 308/14 331/16 nevertheless [2] 29/21 37/25 new [53] 12/13 14/5

14/9 15/17 20/13 27/8 27/9 31/8 33/13 37/5 38/4 44/12 44/23 44/24 45/10 49/22 75/6 77/9 90/16 92/23 93/1 95/1 100/8 100/9 103/12 103/21 116/10 116/13 116/18 123/4 130/24 131/13 131/22 132/4 138/18 150/17 151/1 155/11 180/10 197/3 217/15 217/17 218/2 237/25 240/8 249/10 257/5 260/25 261/24 264/15 270/3 271/14 297/7

newbie [1] 122/20 newer [2] 132/20 212/9 newest [1] 145/16 news [2] 322/24 342/6 newspaper [3] 184/17 193/5 198/13

newspapers [1] 226/21

next [67] 11/6 16/19 21/6 22/4 38/25 40/25 46/11 46/20 47/12 47/15 47/19 57/15 64/17 84/17 115/19 116/3 120/21 124/10 124/19 125/14 144/5 151/15 153/4 166/9 172/25 173/9 183/18 183/21 184/10 191/20 205/15 205/17 205/21 208/13 220/6 222/19 224/9 230/8 230/10 233/19 233/19 233/25 241/6 245/7 248/3 256/21 261/24 263/23 265/17 267/17 271/8 274/20 299/25 304/6 309/13 317/13 318/25 323/18 327/3 330/15 335/23 338/14 340/18 340/23 343/25 349/9 349/13

NFB [2] 87/1 94/17 **NFB's [1]** 86/14 nice [7] 58/4 81/25 148/6 203/23 210/6 308/19 319/6 nicely [1] 59/4 Nielsen [1] 59/4

152/18 165/4 165/14 188/18 189/1 189/5 190/5 202/9 210/24 232/13 238/4 239/6 239/11 239/15 264/12 300/24

nightmare [1] 14/10 nine [10] 16/6 32/5 74/16 75/4 100/4 121/4 158/4 194/25 312/10 337/18 ninety [1] 135/14

no [88] 18/7 26/3 31/20 37/23 39/15 40/3 47/12 51/18 54/6 54/9 56/14 63/16 70/4 73/14 74/24 80/19 82/6 93/10 96/12 108/25 109/25 132/12 134/7 142/2 142/8 142/14 152/11 158/5 162/10 166/23 171/4 182/8 182/8 182/9 182/16 182/22 184/1 191/20 191/21 191/22 200/21 201/10 201/10 201/13 202/4 202/7 206/24 218/25 221/15 225/16 227/10 230/1 233/2 239/23 239/24 243/14 245/24 247/13 247/15 247/15 247/18 247/20 248/3 248/6 248/8 255/6 259/6 259/7 259/16 259/17 274/21 276/19 283/15 283/17 284/1 284/20 293/17 309/2 315/23 317/25 326/11 328/3 329/3 340/12 343/15 343/15 343/15 345/19 nobody [4] 35/16 80/2 80/2 128/24

Nominal [1] 326/15 non [2] 41/7 87/8 non-English [1] 41/7 **non-profit** [1] 87/8 none [3] 147/10 325/20 333/25

nonetheless [1] 75/15 nonpartisan [1] 57/21 nonprofit [2] 49/22 57/20

nor [1] 353/13 normal [2] 186/7 319/5 normally [2] 223/11 223/15

north [7] 65/1 172/5 234/17 236/2 249/1 297/1 312/17 not [317] 9/8 10/7 10/11 10/12 11/11

Ν

not... [312] 14/16 14/18 14/22 15/20 17/24 20/11 20/18 23/13 23/13 23/15 23/23 24/3 24/15 25/8 25/17 26/5 27/2 27/3 27/24 29/19 30/25 32/6 33/20 34/3 34/4 34/12 34/13 34/21 36/14 36/14 39/5 39/13 40/5 40/8 40/13 42/8 42/18 43/17 44/22 45/1 45/9 45/12 45/14 45/22 45/25 46/3 46/13 46/24 46/25 47/5 47/5 54/19 55/21 55/22 56/15 56/18 57/5 57/7 57/19 58/5 58/24 60/3 61/17 62/14 63/8 63/10 63/15 63/22 63/25 64/2 65/11 65/12 66/18 66/19 67/6 67/12 68/22 68/22 70/19 70/25 71/2 71/2 71/8 71/13 73/23 75/3 75/14 75/21 76/9 76/12 76/17 77/4 77/12 77/13 78/7 78/12 78/15 80/16 81/4 81/5 82/20 83/13 88/22 89/10 89/14 89/23 90/3 91/16 91/17 92/6 94/4 94/5 94/5 95/16 95/22 96/2 96/15 96/18 97/5 97/7 97/14 97/20 97/21 97/21 98/3 98/4 98/5 98/9 99/21 100/14 100/22 101/25 102/1 102/9 102/10 102/13 104/16 105/9 105/11 105/20 107/21 109/7 109/12 111/5 112/15 114/8 117/1 121/8 122/3 122/14 126/13 128/3 128/7 128/23 130/15 133/17 135/25 136/7 136/18 136/23 137/5 141/3 142/11 142/14 142/22 142/25 143/5 143/8 144/21 151/14 154/13 156/7 156/9 158/1 164/7 164/8 165/19 167/23 168/8 169/7 170/1 170/17 171/4 172/9 172/11 174/6 175/5 175/13 175/13 178/4 179/19 179/20 182/4 182/7 183/5 184/5 184/9 184/17 185/3 185/16 186/3 187/12 188/1 188/16 190/5 192/4 192/8

198/6 198/7 200/3 201/10 201/11 201/13 203/6 203/13 206/24 207/13 207/22 213/25 214/18 215/2 222/14 222/16 223/10 224/13 225/13 229/10 229/24 232/14 235/15 236/22 237/18 238/6 239/1 239/5 243/14 245/20 250/1 254/17 259/4 260/5 263/7 264/24 267/5 271/17 274/18 275/17 275/23 277/24 279/4 279/12 280/13 281/13 282/17 283/11 284/10 288/16 289/1 289/22 289/24 290/7 292/16 292/17 293/3 293/25 300/11 301/8 301/17 301/21 302/2 302/5 302/6 304/11 304/14 304/19 305/7 307/2 307/7 311/24 313/16 315/5 315/24 320/22 320/23 321/22 322/1 325/4 325/5 325/12 325/15 327/14 328/17 329/11 329/15 330/9 331/4 333/22 334/8 335/10 337/6 337/16 339/16 339/19 342/25 343/12 343/13 343/17 346/1 350/6 350/25 351/3 353/11 not an [1] 42/8 **note** [7] 3/5 62/17 97/6 121/24 154/1 179/24 251/11 **noted [2]** 6/19 28/18 notes [1] 180/1 nothing [9] 187/25 216/14 248/12 272/20 272/24 278/13 319/22 327/21 340/17 notice [11] 136/6 191/7 244/17 265/5 265/14 265/21 269/5 269/10 272/14 274/6 279/1 noticed [2] 9/11 118/23 notified [1] 237/18 notifies [1] 237/14 **notify [3]** 171/5 250/16 315/25 November [3] 134/12 230/10 344/22 now [122] 6/18 7/1 14/15 24/2 28/20 28/22 33/9 33/25 34/20 35/20

38/1 38/4 40/6 41/12

42/16 44/8 48/23 50/23

51/3 53/25 58/21 67/15

74/12 81/5 86/3 91/22 93/10 98/1 101/4 107/15 107/23 112/11 116/13 118/12 118/20 124/17 126/10 126/13 131/12 131/20 132/25 134/1 146/24 147/13 148/2 149/8 151/8 152/16 153/17 155/20 155/25 156/2 168/5 168/6 173/9 174/10 179/18 181/20 181/23 182/15 185/21 187/12 189/6 190/10 191/1 193/24 198/11 205/11 212/4 215/4 215/16 217/13 221/6 232/11 233/7 235/2 240/13 246/4 247/10 252/10 256/25 258/8 260/11 261/25 270/15 270/19 270/23 271/3 272/7 273/10 273/17 274/16 275/5 278/8 278/21 279/1 279/3 279/7 279/10 283/10 283/17 283/24 284/7 285/6 289/8 291/12 295/23 309/17 317/4 319/2 322/10 322/15 331/17 333/4 333/13 333/21 334/14 336/20 337/10 340/8 351/3 351/17 number [58] 14/7 14/12 15/12 16/2 16/12 50/1 51/1 53/2 54/14 61/6 61/7 61/24 61/25 85/3 85/13 85/14 86/22 87/2 93/18 94/2 113/1 113/3 113/5 114/19 114/20 124/15 124/21 124/24 125/4 131/22 131/24 166/13 168/21 182/1 182/8 186/8 195/7 213/13 222/20 227/6 243/15 261/23 267/12 270/1 291/24 291/25 312/22 312/23 315/17 318/14 322/19 325/10 325/24 326/6 332/24 333/2 347/25 353/19 number of [1] 85/13 **numbers** [7] 33/7 135/9 157/8 206/19 208/17 226/22 269/24 **numerous** [1] 183/10 nuts [2] 116/15 266/7 **nutshell [4]** 164/18 257/15 257/17 258/19

0 obfuscation [2] 274/16 303/24 object [2] 24/15 117/12 **objective [1]** 146/17 **objectives [1]** 145/25 obligations [1] 85/2 obscure [1] 331/20 obscurity [1] 71/14 obtaining [1] 123/13 obvious [3] 50/22 91/3 187/5 obviously [19] 38/3 43/6 49/11 72/25 92/13 127/17 128/14 129/22 130/2 133/5 134/4 185/16 197/17 198/1 304/7 308/11 312/14 312/22 314/25 occur [1] 322/7 occurred [1] 141/20 OCR [1] 231/16 October [1] 340/8 October 15th [1] 340/8 off [38] 4/1 8/8 27/12 74/25 76/20 88/14 128/23 135/22 145/2 150/14 150/21 158/1 161/24 162/3 169/12 175/3 177/5 178/17 206/1 211/16 214/23 228/4 229/11 255/23 259/5 259/15 272/19 274/24 275/14 300/3 300/5 310/21 310/21 311/11 311/21 324/11 326/2 347/15 off-the-shelf [6] 150/14 150/21 175/3 300/3 300/5 310/21 offense [1] 39/16 offer [14] 7/2 85/24 151/2 189/17 189/18 209/14 209/24 224/12 226/2 226/12 253/4 253/8 271/3 301/4 offered [2] 53/2 221/11 offering [7] 175/10 184/6 189/4 193/7 296/19 300/1 306/13 offerings [1] 210/3 offers [2] 210/25 211/3 office [51] 13/22 22/12 30/11 36/19 39/6 87/7 110/21 110/24 118/16 118/20 119/11 121/20 121/21 123/12 123/22 124/8 125/5 125/11 140/6 140/10 140/11

143/2 143/3 143/6

143/16 143/17 145/8

199/22 206/3 217/7 217/10 238/6 239/19 253/16 258/15 260/1 301/6 309/24 311/21 331/14 343/17 345/6 345/15 350/6 350/10 OfficeMax [1] 311/18 officer [4] 57/18 118/2 295/3 304/8 offices [2] 206/15 296/25 official [13] 74/8 122/15 137/18 143/4 147/18 155/11 177/18 182/17 190/21 253/2 314/16 320/23 320/23 officially [1] 329/12 officials [34] 4/15 4/20 4/22 18/11 18/12 19/11 31/22 34/1 52/14 52/19 54/2 59/5 60/2 75/21 77/4 78/11 86/19 100/5 103/10 112/2 113/20 134/22 152/1 152/17 192/17 235/9 239/5 251/12 252/5 303/2 322/9 328/5 331/5 345/3 offline [1] 148/8 often [3] 119/16 128/15 261/19 oh [15] 23/3 34/20 35/14 45/18 47/12 78/20 162/9 170/9 176/22 177/3 201/13 221/17 306/24 344/7 349/11 Ohio [2] 42/10 219/15 okay [115] 23/1 29/1 47/13 57/10 57/14 62/17 64/12 81/17 84/14 127/4 134/8 154/17 157/25 161/15 170/10 176/3 176/20 177/8 178/8 179/22 180/14 180/18 181/9 181/19 182/23 184/2 184/20 186/21 187/1 187/21 189/5 190/9 191/7 191/19 192/10 194/13 194/19 195/5 198/19 202/23 203/7 203/20 204/11 208/19 227/22 230/25 232/20 233/12 242/6 242/12 243/3 243/7 243/18 244/18 244/19 245/3 245/5 245/13 245/16 245/25 246/3 246/6 246/11 246/20 246/22

177/15 177/18 180/11

190/4 190/11 198/12

O okay... [50] 247/4 249/17 249/19 249/24 252/12 252/13 253/22 255/21 257/24 258/20 259/2 259/24 270/22 279/12 280/24 282/1 284/21 287/21 289/18 290/16 291/18 292/9 292/18 313/24 314/19 315/15 316/10 317/23 318/1 319/24 320/21 323/2 324/2 324/3 324/6 324/12 328/16 330/19 330/23 332/16 334/9 336/1 336/6 338/4 344/7 349/11 349/12 349/14 349/17 351/13 Oklahoma [2] 266/2 266/10 Oklahoma's [1] 266/9 old [8] 96/17 126/24 127/25 276/7 285/13 329/3 329/4 332/25 older [7] 89/3 89/9 89/15 89/23 96/25 106/11 106/16 oldest [1] 334/3 Omaha [1] 235/20 omission [1] 2/6 on [490] On-demand [1] 349/1 on-site [1] 295/17 once [38] 10/3 47/9 58/13 61/25 68/4 90/11 105/24 111/20 112/23 112/23 113/13 113/18 139/25 140/9 142/17 170/12 170/22 170/25 171/12 184/24 208/23 209/5 213/7 214/23 215/3 217/25 220/22 245/5 269/1 270/18 280/14 282/3 285/2 291/12 307/16 314/10 323/23 330/3 one [204] 8/21 11/24 13/21 13/22 13/25 14/1 22/8 23/11 29/1 30/24 31/20 32/15 35/8 36/10 37/6 38/8 39/2 39/24 46/12 46/22 48/21 52/23 56/16 60/12 63/16 63/22 69/11 71/10 71/12 76/6 76/11 77/24 78/8 78/15 79/9 82/15 83/10 85/3 88/15 95/6 95/8 96/7 98/24

100/6 105/21 108/19

110/8 111/9 113/8

114/3 114/20 114/23 125/22 127/12 131/9 131/23 133/12 134/14 134/24 136/9 136/11 139/11 139/12 141/8 144/17 147/12 148/6 149/8 149/11 152/11 153/14 153/22 154/4 154/16 156/2 156/19 157/8 157/25 158/21 158/21 161/18 164/20 167/5 167/24 168/17 168/21 169/1 169/11 171/22 172/17 173/17 174/3 178/22 180/4 185/4 186/10 187/2 191/10 191/18 194/21 194/21 195/19 196/3 197/18 198/5 199/3 199/10 199/13 200/4 203/10 204/4 210/12 213/14 214/7 214/7 218/20 218/25 221/6 221/16 223/13 223/16 223/17 223/17 223/18 224/18 225/14 225/14 226/18 231/22 232/11 234/21 237/23 244/13 244/13 244/19 244/22 245/19 245/19 246/19 246/19 249/13 249/25 250/2 250/22 253/19 255/13 258/22 258/22 258/25 259/10 259/20 259/21 260/2 260/12 260/20 260/21 260/24 261/3 261/7 262/12 267/17 270/7 271/8 271/12 271/16 274/19 274/21 275/1 276/15 283/15 283/18 284/4 286/20 290/21 291/11 293/11 294/22 297/7 298/11 303/8 306/16 307/2 310/17 312/9 313/6 316/11 318/13 318/14 318/20 318/21 319/5 319/9 320/15 322/19 323/8 325/11 327/14 328/4 332/24 339/23 340/12 341/25 345/23 351/8 one's [3] 178/3 202/8 219/21 one-to-one [3] 158/21 225/14 258/22 onerous [1] 348/24 ones [5] 11/16 131/24 157/4 202/3 218/14 ongoing [9] 53/18

55/25 58/7 58/16 58/19

83/22 88/25 304/7

304/9 online [9] 30/5 30/17 49/1 110/23 112/5 211/9 229/7 276/23 300/17 only [49] 13/22 39/11 41/12 49/13 52/23 55/5 61/25 74/4 83/13 90/18 91/5 101/23 119/24 121/8 132/5 135/10 135/13 140/3 144/6 151/7 171/5 180/4 186/10 199/12 211/18 212/12 212/15 214/7 221/12 232/18 238/6 241/16 244/19 244/22 260/20 260/21 271/11 275/20 276/8 287/2 287/5 288/7 292/15 303/6 313/15 315/11 333/6 335/17 339/13 onto [4] 111/24 216/14 268/15 276/10 open [26] 14/15 14/22 16/13 69/4 71/16 71/16 72/3 72/8 72/18 72/21 72/23 72/24 73/19 74/2 74/4 151/6 192/25 202/13 217/1 226/14 247/6 248/14 259/5 259/19 274/2 330/8 open-source [4] 14/15 14/22 16/13 73/19 opened [3] 15/8 15/8 34/11 opening [7] 175/15 175/17 257/16 258/1 258/2 259/3 259/9 opens [1] 73/1 operate [2] 51/9 269/3 operated [1] 85/8 operates [1] 51/23 operating [3] 146/11 275/21 291/6 operation [1] 51/10 operational [1] 55/24 **operations [5]** 67/15 67/24 71/23 267/5 267/23 operative [1] 212/2 opinion [8] 38/16 49/12 72/1 139/9 139/22 149/25 151/17 286/17 opinions [1] 106/4 opportunities [5] 8/4 103/19 103/20 188/21 351/6 opportunity [27] 13/2 21/2 59/18 84/21 85/12

92/12 99/3 99/16 99/17

99/25 102/20 116/25

125/18 145/8 167/18 173/16 175/18 197/3 206/4 207/7 211/3 239/4 302/8 309/10 opposed [2] 146/13 266/12 optical [11] 118/6 118/7 118/11 126/24 136/21 146/14 149/3 158/18 214/24 321/17 321/20 option [17] 108/8 108/9 108/15 126/18 127/2 139/1 139/2 186/18 194/12 201/19 213/12 223/16 244/4 271/24 272/7 280/15 318/24 options [15] 20/16 94/6 167/6 220/7 220/14 220/17 226/3 237/24 248/20 253/9 261/7 261/8 271/19 305/24 341/25 or [282] 2/6 10/11 11/17 15/1 15/4 15/21 15/25 16/12 24/18 25/17 26/1 27/11 27/24 28/11 28/16 29/10 29/13 31/9 32/12 34/3 34/18 35/5 35/13 36/10 37/10 39/8 40/17 40/19 42/12 44/14 44/17 46/24 46/25 58/25 60/3 60/7 61/2 61/8 63/16 63/21 63/22 64/2 67/2 67/9 68/17 73/16 73/22 74/16 77/24 80/24 84/9 84/10 86/4 86/14 89/9 89/10 90/2 90/21 91/13 91/17 92/16 93/9 93/18 94/9 94/13 94/14 94/14 94/23 94/25 95/5 95/9 96/4 96/6 98/3 98/8 98/14 99/7 99/16 99/25 101/2 101/2 101/8 101/25 105/4 107/1 107/11 111/6 111/10 112/12 112/17 113/12 114/12 115/1 115/3 115/5 115/6 115/19 115/22 117/11 121/18 125/17 126/19 126/24 126/24 126/25 127/6 127/10 127/12 128/24 129/21 129/22 129/23 131/1 131/15 132/19 134/1 135/5 135/11 136/1 137/8 137/12 139/18 141/8 141/15 142/4 143/3 147/7

118/22 125/3 125/12

147/11 147/18 153/25 154/24 158/15 158/19 161/1 161/22 162/20 162/20 162/21 163/17 164/8 165/6 166/21 167/5 169/4 171/16 172/10 175/4 177/1 177/14 180/8 181/25 183/14 183/21 185/18 186/9 186/9 186/9 186/13 189/5 189/8 193/17 195/23 196/23 197/19 200/4 202/4 202/4 204/9 205/6 210/7 211/11 213/21 214/16 215/24 216/14 216/24 217/16 217/17 219/2 222/17 225/6 225/17 226/16 226/21 228/15 231/10 232/8 239/2 239/25 240/24 243/15 243/15 245/13 246/7 246/8 246/9 246/12 247/15 247/16 248/6 248/12 249/11 250/20 252/18 254/19 256/22 259/10 260/2 260/12 260/20 260/22 261/7 261/9 263/1 267/18 270/25 272/20 272/21 272/25 275/24 278/2 282/25 283/4 283/7 283/14 283/16 284/2 285/5 285/16 285/21 286/8 286/9 286/15 291/9 293/1 293/21 298/11 299/7 299/22 300/12 300/13 300/19 301/2 301/6 301/18 302/6 302/14 303/3 306/7 306/19 310/12 310/25 316/2 317/14 317/18 317/18 317/19 318/15 318/24 319/8 319/9 325/13 325/21 326/9 326/18 326/19 329/25 333/18 335/10 337/2 342/25 343/3 343/20 343/21 347/16 348/8 348/11 349/4 350/8 350/21 353/9 353/12 order [10] 15/2 15/7 59/14 105/15 113/21 147/14 176/20 326/7 329/17 340/19 ordinary [1] 339/2 organization [7] 51/5 57/19 57/20 146/18 147/2 345/7 346/3 organizations [4] 50/16 79/25 103/16

O organizations... [1] 342/20 organize [4] 151/23 151/24 153/19 157/11 **orientation [3]** 177/20 237/11 247/1 original [6] 60/10 132/11 194/4 211/21 321/23 330/5 originally [2] 23/18 28/12 Orleans [1] 155/11 other [69] 4/25 9/10 9/14 12/8 15/4 29/12 36/17 37/8 52/16 60/8 63/16 63/16 67/18 69/12 73/17 80/19 87/6 87/23 90/7 91/9 93/22 94/6 95/24 99/16 100/8 103/15 104/2 104/3 104/3 112/18 115/14 116/25 126/20 131/9 131/25 133/9 139/2 143/13 157/4 162/9 178/9 181/7 195/19 196/3 198/1 200/4 212/16 212/17 212/21 219/25 226/2 233/9 242/2 251/6 255/13 256/22 261/12 271/13 275/24 280/21 282/16 299/16 312/6 312/12 312/19 331/24 335/7 342/19 348/9 others [6] 3/16 5/3 29/13 78/14 237/4 319/19 otherwise [4] 32/13 36/10 60/8 98/14 ought [1] 322/12 our [366] ourselves [3] 55/7 70/6 146/13 out [164] 14/3 23/15 25/11 26/4 26/14 27/4 29/9 30/12 31/5 33/1 33/6 34/12 35/5 37/21 39/9 43/14 45/20 47/6 58/5 60/11 62/21 66/22 67/25 73/2 76/18 79/1 79/9 79/21 79/24 82/12 82/14 84/5 88/21 91/2 96/8 101/9 103/3 103/11 103/14 103/19 104/17 105/10 112/24 113/5 113/12 113/18 113/18 115/21 120/10

128/22 128/25 128/25

131/7 131/22 132/12

133/1 133/18 134/23

135/4 135/15 135/23 146/1 147/13 150/18 152/24 154/21 156/4 158/11 158/13 160/12 160/24 163/25 167/6 167/17 169/19 169/21 169/23 169/24 169/25 175/15 176/20 177/10 180/2 180/10 182/6 186/1 189/11 189/25 192/18 194/3 195/20 197/2 200/9 200/15 200/22 201/1 209/7 212/14 218/4 218/10 218/12 218/14 219/16 221/17 221/20 222/17 224/10 224/12 228/3 228/14 235/23 239/16 241/21 243/3 247/12 249/18 254/18 258/13 259/13 259/23 261/18 262/14 265/9 267/6 267/15 270/12 270/15 270/21 271/14 271/25 276/4 276/15 277/12 277/25 283/23 285/2 285/7 285/9 288/12 291/9 298/2 298/23 304/5 309/23 310/21 311/9 319/1 322/14 322/18 327/17 327/20 331/8 332/25 335/16 336/25 337/18 339/6 342/6 342/10 342/15 343/9 348/25 350/15 350/19 outreach [2] 103/1 213/19 outright [1] 302/5 outside [6] 9/13 24/22 213/22 234/20 303/1 339/14 outvote [1] 177/16 oval [1] 156/20 ovals [1] 301/18 ovations [1] 236/21 over [89] 7/1 7/25 8/22 9/22 10/7 23/7 29/10 31/19 40/4 50/7 50/8 50/18 51/3 54/1 64/6 65/11 66/10 78/1 78/4 96/22 121/17 122/1 128/2 132/9 133/14 139/18 146/7 146/7 148/22 153/22 154/21 158/25 159/25 168/6 168/16 173/14 187/21

187/22 189/20 190/10

193/8 204/1 205/2

205/23 206/8 208/2

208/20 209/9 210/1

215/11 216/22 218/21

219/3 224/18 230/14 235/3 235/20 237/17 240/7 240/13 243/20 247/1 252/15 255/12 264/5 265/15 265/22 278/10 280/15 280/19 283/9 284/13 285/4 286/13 291/19 294/7 294/24 295/16 297/1 297/3 298/12 306/13 308/3 313/2 321/13 330/9 331/8 333/9 348/3 overall [4] 34/15 43/18 127/15 267/11 overarching [1] 24/10 overconfidence [1] 67/22 overcounting [1] 335/3 overhaul [1] 81/9 overlook [1] 64/11 overly [1] 129/11 overseas [1] 192/15 overseeing [1] 304/8 overturn [2] 114/6 166/15 overview [2] 98/12 296/18 overvote [18] 39/4 39/11 137/6 137/11 165/25 166/1 167/16 171/14 178/23 179/19 179/23 180/9 223/13 244/9 250/8 250/24 289/23 306/3 overvoted [10] 237/13 238/18 239/2 250/17 250/21 251/4 251/14 252/9 261/8 289/17 overvotes [15] 39/3 62/16 62/18 62/23 154/17 154/21 154/23 154/25 163/20 164/1 165/9 165/12 171/6 171/7 289/22 overvoting [5] 13/21 36/9 37/17 136/15 308/21 own [13] 30/9 49/12 69/18 112/19 126/15 130/14 187/18 220/15 301/9 307/8 325/6 337/13 345/11 owned [1] 295/8 owner [1] 82/23 **p.m [2]** 258/6 352/7 pack [2] 93/23 205/15

package [2] 141/9

pad [1] 219/14

166/21

paddles [1] 308/8 padlock [1] 188/21 page [6] 2/10 96/18 161/14 223/8 309/13 343/21 pages [2] 161/9 218/21 paid [4] 128/2 168/1 330/11 333/18 pales [1] 135/15 **Pam [3]** 119/13 119/20 121/6 panel [48] 4/9 6/1 6/5 6/9 6/13 8/25 9/3 9/19 11/1 11/11 16/19 17/23 21/6 23/17 28/24 38/25 40/25 46/11 46/20 47/12 47/15 47/19 48/2 48/4 62/15 74/4 79/3 84/17 84/22 94/9 94/13 94/13 116/4 124/12 125/14 136/23 142/19 143/23 144/11 149/11 159/25 194/20 341/22 343/10 343/11 343/12 343/14 343/18 panelist [1] 129/18 panelists [17] 10/18 11/19 11/24 46/10 47/23 49/17 57/11 64/14 84/15 84/24 85/14 85/23 86/3 88/8 107/9 108/18 116/1 panels [6] 2/10 5/18 8/12 116/25 117/3 167/14 paper [198] 13/12 13/15 14/2 15/1 15/11 16/10 19/21 20/17 37/2 37/9 37/22 37/23 38/5 39/4 39/8 39/12 43/23 59/17 60/16 60/17 60/20 60/23 61/23 62/21 63/20 64/10 68/18 68/18 69/6 70/8 70/12 90/13 91/16 111/24 123/1 126/23 133/24 135/20 137/15 143/14 143/20 149/10 149/18 149/24 150/2 159/21 160/10 160/12 160/14 160/19 160/22 160/24 161/3 161/5 161/6 161/10 161/20 162/1 168/5 169/9 172/13 172/13 172/16 172/16 178/17 178/18 178/18 178/20 179/25 192/16 193/6 195/21 195/21 201/22 209/21 209/23 210/4 221/2 225/4 225/19 226/2

paddle [1] 308/7

226/3 226/5 226/23 227/16 227/24 228/15 228/21 228/22 231/24 232/21 237/7 238/6 239/13 239/25 240/4 240/23 241/2 246/11 247/18 247/19 247/20 247/24 248/1 248/2 248/5 248/6 248/7 250/6 250/11 250/23 252/17 254/18 254/21 264/17 266/19 266/20 268/16 268/20 268/20 269/20 270/24 271/16 271/20 272/10 272/16 272/19 272/22 275/6 278/13 279/4 279/6 279/21 279/25 280/23 281/2 282/10 282/11 283/12 283/16 283/16 283/19 283/20 283/24 284/3 287/25 288/3 288/5 288/8 292/7 292/23 293/5 299/1 299/17 299/23 300/7 309/8 309/15 309/20 310/2 310/18 310/20 313/14 313/17 313/25 314/2 314/16 315/15 315/23 316/2 318/8 321/3 321/6 322/16 326/8 327/18 328/2 329/9 329/14 329/15 329/16 332/2 333/13 334/2 334/3 334/4 341/19 344/22 345/18 346/5 346/20 347/16 347/16 347/22 348/12 348/14 348/17 349/4 paper-ballot [1] 37/9 paper-ballots [1] 346/20 **paper-based [3]** 15/1 282/11 314/16 paper-copy [1] 143/14 paper-ready [1] 221/2 paper-scanning-based **[1]** 227/16 **paperclip** [1] 180/8 paperwork [1] 139/17 parameters [1] 85/1 paramount [1] 149/9 parishes [2] 297/12 297/16 part [38] 28/5 29/1 29/2 29/3 30/19 48/8 48/10

77/1 77/22 78/13 96/20 113/22 119/4 121/5 150/10 151/19 160/8 160/15 163/17 166/23 (34) organizations... - part

48/14 50/5 51/14 58/18

62/3 66/3 72/10 72/18

P 277/5 277/15 277/16 277/17 part... [10] 187/19 past [8] 14/5 16/21 197/12 201/25 214/13 77/13 215/18 215/25 214/22 256/21 257/8 227/8 303/5 308/13 258/2 288/6 331/23 path [1] 209/15 partial [1] 315/21 patience [1] 39/10 participants [1] 9/2 patrol [1] 143/3 participate [4] 13/7 **Paulding [3]** 167/12 16/16 18/6 18/8 167/21 255/25 participated [1] 324/18 pause [6] 4/3 173/7 participation [3] 13/9 205/19 233/24 264/1 92/13 116/1 294/18 particular [38] 16/8 pay [4] 24/21 168/3 17/23 18/24 23/5 24/4 168/10 169/4 27/15 39/23 42/11 46/1 paying [5] 24/20 24/20 48/11 58/22 58/25 117/13 133/18 323/5 63/13 63/13 100/14 PDF [1] 222/17 124/5 124/7 126/7 **PDR** [1] 325/2 153/23 154/10 164/20 peach [1] 333/16 166/4 180/20 181/23 Peggy [3] 193/17 182/21 184/3 198/15 193/19 193/23 213/5 237/20 240/3 pen [5] 37/22 43/23 247/21 251/5 252/9 237/8 301/18 329/25 252/10 272/3 287/6 pen-and-paper [1] 287/18 327/15 43/23 particularity [1] 99/21 penalize [1] 144/21 particularly [3] 18/22 penalized [1] 179/21 90/12 133/10 pencil [2] 188/3 329/25 parties [3] 212/16 pencils [1] 329/23 212/17 353/12 pending [2] 133/22 partisan [4] 92/7 325/5 159/14 325/13 325/15 pendulum [1] 270/22 **Partly [1]** 14/9 **penetration** [1] 303/24 partner [5] 21/9 275/9 pens [1] 329/23 294/2 296/25 304/14 people [135] 4/25 5/9 partnered [1] 312/2 10/3 22/23 24/11 25/13 partnering [2] 294/5 28/7 32/8 32/25 33/5 294/7 34/12 34/16 34/19 partners [1] 140/15 35/14 36/18 37/10 partnership [9] 1/10 37/12 38/17 39/6 39/10 52/6 52/8 133/5 133/17 44/20 45/15 45/22 63/8 304/19 304/25 305/7 63/22 64/9 65/16 67/9 326/24 71/15 71/16 71/18 partnerships [1] 65/16 72/25 73/2 73/14 79/10 parts [8] 44/13 48/8 79/14 79/15 80/15 58/9 72/9 72/22 214/5 80/15 80/17 82/9 83/20 275/1 312/5 85/6 88/12 89/3 89/14 party [8] 21/18 92/6 89/21 92/11 92/14 181/24 231/6 307/9 92/17 92/19 93/2 94/2 324/18 328/23 336/24 95/7 95/15 95/18 95/20 pass [11] 28/4 78/8 96/22 96/25 97/2 97/4 122/4 125/24 156/22 97/23 98/19 100/15 184/18 220/13 231/22 100/17 101/1 101/13 245/23 330/19 345/4 102/1 102/2 102/7 passage [1] 18/19 102/10 103/16 105/17 passed [4] 98/22 98/22 105/21 106/2 107/7 135/4 156/20 109/3 109/5 110/25 passing [1] 114/24 117/9 127/11 130/25 passion [1] 66/9 131/4 131/7 131/20 passionately [1] 75/18 147/7 147/8 148/15 **password** [5] 188/15 151/16 152/19 164/1

164/3 168/8 168/19 171/8 172/14 184/4 192/13 195/1 198/15 199/6 201/20 201/23 203/14 212/24 213/13 215/14 224/16 227/12 267/17 270/1 270/10 273/10 275/2 275/4 275/7 275/11 277/12 283/16 283/20 293/1 304/12 321/9 321/13 329/3 329/22 335/16 337/11 339/1 339/3 339/9 340/9 340/18 342/18 351/23 people's [1] 47/3 per [9] 168/3 169/3 169/4 170/1 198/22 199/1 199/11 315/19 347/12 percent [12] 41/6 45/19 45/21 96/5 120/7 120/8 161/5 189/6 191/5 247/24 267/11 267/13 percentage [1] 191/4 perception [3] 335/9 335/13 335/14 **Perdue [2]** 25/25 26/3 perfect [9] 74/16 76/11 108/23 122/5 123/15 140/5 181/19 191/6 280/24 perfected [1] 74/17 perfection [3] 76/9 76/17 117/1 perfectly [2] 172/10 329/22 **perform [2]** 65/19 218/16 performance [1] 227/8 **performed** [1] 277/16 performing [1] 79/7 perhaps [7] 15/13 29/22 55/9 55/9 58/10 63/9 212/21 **period** [7] 34/11 35/7 89/17 139/18 139/21 265/3 270/4 permanent [1] 105/18 permanently [1] 105/8 **permission [3]** 65/13 277/7 277/19 person [29] 8/24 22/25 44/14 60/25 64/8 80/5 89/9 89/11 95/4 96/17 97/13 98/2 104/19 104/22 105/3 109/6 109/7 117/19 193/14 196/16 213/9 214/23 215/1 291/5 299/10

339/23 personal [4] 22/16 243/14 252/25 345/6 personally [2] 75/18 342/8 persons [1] 87/22 perspective [20] 11/5 53/5 54/5 54/9 55/13 56/8 81/20 117/6 117/6 117/7 119/15 119/17 120/23 126/17 134/2 136/20 137/25 146/21 150/20 167/2 Pete [1] 267/5 phase [1] 77/9 phased [1] 262/2 phased-in [1] 262/2 phasing [1] 77/9 PhD [2] 49/23 57/24 **Phil [2]** 267/6 267/8 Philippines [2] 207/9 210/2 **Phillip [4]** 323/19 323/19 323/21 323/23 Phillips [2] 264/20 273/5 Phillips-head [1] 273/5 philosophically [1] 23/9 **phishing [1]** 80/12 **phone [4]** 30/13 101/8 308/13 308/15 phonetic [3] 2/3 164/4 169/20 photocopying [1] 353/9 physical [13] 83/25 87/16 94/25 105/22 150/4 155/8 201/16 274/6 295/6 313/16 325/15 326/13 326/21 **physically [4]** 106/2 143/12 239/20 293/6 pick [7] 25/16 42/24 42/24 143/3 193/9 265/17 265/18 picked [2] 143/1 219/1 **picture [5]** 150/8 152/10 190/15 190/16 273/1 piece [29] 18/24 111/24 131/25 150/14 178/19 193/6 195/20 195/21 210/12 227/21 228/22 247/20 248/1 248/5 248/6 250/22 269/2 269/3 269/21 271/12 272/10 272/22 274/13 274/19 278/13 279/4 279/21 279/25 296/15 299/11 317/13 337/12 pieces [7] 201/22

209/1 209/16 210/12 269/11 269/13 279/3 piggyback [2] 113/7 262/12 **PII [1]** 66/7 pilot [4] 101/5 101/11 103/24 230/9 pin [3] 84/1 305/15 307/1 place [67] 11/16 27/25 28/9 29/16 34/18 35/13 35/13 35/15 47/8 62/24 67/5 72/13 73/21 73/24 74/24 77/25 79/15 80/1 80/8 80/20 83/11 83/14 83/18 84/13 91/9 92/20 95/20 97/9 97/23 98/25 99/7 99/8 102/15 102/16 102/17 104/15 108/23 109/1 109/4 109/10 109/11 109/14 136/13 136/16 151/24 161/7 175/19 180/9 203/20 209/4 211/5 253/6 253/17 255/8 260/17 260/22 260/25 264/3 269/17 275/12 280/20 281/18 281/23 281/25 282/4 284/9 329/19 placed [1] 281/11 places [16] 15/14 16/3 16/13 89/5 115/14 143/16 153/8 163/24 196/1 261/3 282/23 331/10 339/10 339/20 339/20 342/24 plain [5] 110/20 114/15 223/4 223/7 223/9 plaintiffs [2] 24/23 24/23 plan [7] 67/15 262/4 273/3 273/4 343/1 346/20 347/12 **planning [5]** 118/16 124/9 140/11 261/25 342/25 plans [2] 55/19 56/1 **platform [25]** 151/9 174/25 210/10 210/11 216/4 216/5 216/12 217/5 217/21 264/16 265/14 268/3 268/17 268/22 270/2 270/3 270/6 270/8 270/8 270/25 271/20 283/25 284/6 284/12 298/13 play [2] 5/21 154/17 playbook [1] 79/20 played [3] 147/3 149/7 187/15 players [1] 79/20

P playing [1] 180/18 please [22] 4/17 4/20 5/2 8/22 56/14 130/12 133/3 144/11 185/11 189/11 230/16 247/2 264/5 313/5 319/3 328/7 328/16 330/18 345/25 346/25 347/8 351/20 pleased [1] 138/5 pleasure [5] 10/17 16/19 21/7 49/11 213/5 pledge [3] 3/12 4/1 4/2 plenty [4] 57/13 170/1 188/20 329/16 plug [3] 173/22 174/14 175/16 plugs [1] 174/7 plus [3] 131/1 210/1 297/2 pocket [1] 128/25 podium [2] 317/9 317/10 point [**52**] 9/7 10/17 22/16 30/23 37/21 38/10 53/25 56/15 60/22 71/6 74/2 74/17 76/14 92/22 114/25 125/4 125/17 133/4 138/10 140/5 142/18 143/9 151/15 159/10 163/19 186/2 186/11 195/11 202/17 208/19 221/17 224/11 231/23 242/7 245/4 245/25 246/4 255/3 265/8 268/5 268/11 276/18 286/4 291/2 306/6 309/11 313/1 314/14 337/21 342/7 342/15 347/24 pointed [4] 152/24 156/4 212/14 311/9 points [2] 53/16 325/9 policies [6] 80/9 106/5 106/9 109/1 286/7 303/14 policy [7] 12/19 53/1 53/3 57/18 58/1 95/19 212/25 political [5] 57/25 58/2 78/6 78/11 212/17 politics [1] 58/1 poll [126] 14/5 19/12 28/1 28/2 28/3 29/14 31/1 31/15 31/21 46/21 56/10 57/4 90/2 90/3 91/11 93/10 95/7 95/20 97/4 100/25 104/6

104/9 104/12 104/18

108/1 108/8 109/1 136/1 136/17 142/5 153/7 169/14 169/15 173/18 173/19 173/21 173/25 174/1 174/3 174/7 175/4 175/16 175/19 175/21 175/22 177/23 179/10 180/15 180/19 180/25 181/3 181/10 181/14 187/9 187/10 187/24 188/9 188/12 188/14 188/25 197/2 197/18 197/21 200/9 200/9 203/10 203/13 209/2 209/3 213/16 213/17 219/7 219/10 219/25 227/23 235/9 236/16 236/17 236/20 237/2 237/17 239/8 239/12 239/15 239/17 239/19 239/23 240/1 240/6 242/5 242/16 243/1 248/7 248/10 248/12 252/7 257/25 258/8 259/20 259/21 259/22 260/5 281/2 281/8 282/14 283/14 284/24 285/2 285/8 290/22 291/7 293/15 293/20 293/22 294/1 303/16 305/12 305/14 306/23 306/24 307/8 307/9 307/12 307/15 310/14 337/15 poll-based [2] 91/11 108/8 poll-book [1] 142/5 poll-worker [7] 153/7 173/18 177/23 188/9 219/10 281/8 303/16 polling [55] 15/13 16/3 16/12 20/10 27/23 30/19 30/21 30/25 32/9 34/18 35/12 35/13 35/15 37/25 72/13 88/17 88/19 88/20 88/22 89/1 92/17 98/25 99/7 102/15 102/16 102/17 106/15 109/14 153/8 161/7 162/22 196/1 198/3 209/4 211/5 218/7 219/17 220/10 260/12 260/17 260/22 260/25 261/3 269/16 278/22 282/18 282/19 282/22 292/15 293/2 299/8 329/19 337/18 339/10 339/20 polling-place [1] 211/5 **polls [21]** 15/15 20/3 25/10 25/17 27/20

38/18 44/15 92/8 95/6

95/6 101/2 102/11 104/9 105/18 111/7 150/3 152/18 238/5 309/25 335/16 345/5 poorly [1] 63/21 popular [3] 14/17 33/6 43/18 populated [2] 147/21 199/19 population [14] 41/7 94/4 96/1 98/7 100/11 101/21 102/10 106/9 120/5 120/6 120/7 120/9 129/22 211/1 populations [5] 13/5 97/19 98/6 100/15 271/7 port [1] 274/16 portal [1] 211/10 portion [6] 8/19 9/4 130/23 144/15 144/23 317/5 portions [1] 8/13 posed [1] 118/11 position [7] 39/21 117/24 118/1 174/16 174/18 176/16 270/12 positions [4] 19/2 50/1 174/17 295/22 positively [1] 55/4 **possibility [4]** 138/17 343/2 343/4 343/8 possible [13] 22/13 38/14 105/16 107/18 108/4 113/16 114/5 129/8 141/8 141/10 164/14 238/25 282/3 possibly [6] 58/24 109/18 260/11 260/16 336/22 339/10 post [12] 21/21 59/21 74/23 163/17 189/7 190/18 211/8 251/11 251/13 252/4 256/11 341/20 post-audit [1] 251/13 post-auditing [1] 74/23 Post-conviction [1] 21/21 post-election [8] 163/17 189/7 190/18 211/8 251/11 252/4 256/11 341/20 post-selection [1] 59/21 postelection [1] 256/20 potential [7] 32/10 55/8 55/14 73/5 134/16 200/8 342/17 potentially [4] 63/24

125/10 145/24 225/21 pounds [1] 269/8 power [10] 236/8 236/9 predict [1] 271/9 247/12 259/5 259/13 259/20 328/8 340/21 345/10 345/12 powerful [1] 298/22 **PowerPoint [1]** 104/16 powers [1] 273/8 practice [9] 21/10 23/10 82/17 82/18 87/12 103/20 103/25 208/12 275/10 practiced [1] 79/22 practices [19] 19/5 50/15 50/17 51/17 52/18 52/21 53/7 53/15 80/2 104/3 104/4 104/24 105/3 106/10 107/11 277/17 303/14 303/23 325/7 pre [1] 247/25 pre-print [1] 247/25 precinct [83] 23/5 26/24 27/23 28/17 73/12 74/12 149/3 154/20 156/23 158/20 159/1 160/24 162/21 162/22 162/25 167/4 168/5 169/22 170/15 171/4 171/5 175/21 175/25 178/19 179/8 186/7 190/23 190/25 193/9 196/20 197/18 199/2 199/11 203/12 203/14 209/24 209/25 219/4 229/3 236/12 240/11 242/3 257/21 257/25 258/7 258/18 258/21 258/25 259/2 259/11 260/12 263/11 271/23 271/25 272/4 278/21 278/22 278/25 285/17 287/2 287/3 287/6 288/9 288/22 288/24 289/2 289/7 290/10 291/15 299/22 301/6 302/6 302/13 305/23 305/23 305/25 306/13 306/15 307/7 310/11 310/24 316/18 347/20 precinct's [1] 46/2 precinct-based [1] 306/13 precincts [16] 28/14 149/5 158/22 158/23 167/24 218/4 260/23 269/25 282/18 282/19 282/22 299/4 299/6 299/8 300/13 318/20 precious [2] 325/1

325/3 preclearance [1] 23/23 predisposed [1] 321/3 predominantly [1] 231/12 prefer [1] 167/10 preliminary [1] 346/4 preparation [1] 351/16 preparations [2] 41/23 205/11 prepare [2] 110/25 126/5 prepared [2] 20/11 129/11 preparing [3] 261/23 319/20 336/22 preprint [1] 161/1 preprinted [6] 162/4 271/21 272/5 282/24 284/3 293/1 preprinting [2] 271/22 283/13 prescriptive [1] 20/12 presence [1] 63/24 present [6] 151/25 152/2 155/2 162/20 164/12 223/20 presentation [21] 148/5 151/20 157/21 170/5 173/10 204/21 205/15 205/22 226/10 233/17 234/1 263/21 266/16 294/15 294/17 294/21 300/17 316/25 350/14 351/5 351/18 presentations [5] 6/23 319/17 341/24 350/20 350/22 presented [6] 64/2 157/9 221/24 239/3 302/7 344/20 presenter [2] 195/3 263/23 presenting [1] 154/14 presents [1] 72/21 preserve [3] 44/2 72/19 324/25 **preserves** [1] 43/17 president [13] 16/22 16/25 17/2 17/3 17/5 21/18 176/4 185/19 191/14 193/15 234/16 234/18 297/20 presidential [3] 59/6 137/2 347/11 presort [1] 290/7 press [4] 8/8 182/23 245/7 339/25 pressure [1] 347/15 pretty [15] 13/17 54/22 79/4 127/17 131/8

P pretty... [10] 154/22 222/11 222/23 229/23 263/5 265/9 267/7 284/9 297/4 308/9 prevent [3] 200/7 292/1 346/14 prevention [1] 52/1 prevents [1] 308/20 preview [2] 148/2 171/10 previous [4] 67/14 96/8 135/4 218/3 previously [3] 119/8 119/10 297/20 **price [4]** 169/3 195/11 227/9 270/18 prides [1] 195/17 primarily [4] 41/7 85/3 90/7 226/23 primary [6] 61/15 97/14 121/7 194/7 230/12 285/19 Prime [1] 113/4 Princeton [2] 223/3 331/11 principal [1] 31/14 principally [1] 146/4 principle [4] 49/13 62/5 62/6 71/13 principles [4] 19/23 59/2 91/24 146/18 print [44] 90/7 91/13 93/20 106/13 106/19 106/20 106/24 107/1 112/24 147/9 160/23 160/25 167/22 169/19 169/20 169/23 169/24 171/11 175/18 185/25 188/11 200/14 201/1 215/6 219/16 224/10 225/4 225/15 232/24 236/19 239/9 245/15 247/25 258/11 271/25 272/3 280/16 280/17 285/7 293/24 309/7 309/13 314/5 315/22 **printed [22]** 162/3 171/12 177/12 178/17 182/6 187/9 194/3 195/20 211/11 211/12 231/17 231/19 232/8 243/5 254/25 288/12 293/2 310/1 314/17 316/21 321/16 350/19 printed-out [1] 288/12 printer [16] 175/2 182/5 182/5 227/22 243/2 243/4 248/11 300/7 300/7 301/10 301/11 306/20 310/22

311/9 311/17 315/16 printers [10] 150/23 247/18 248/8 311/14 311/18 348/18 348/22 348/23 349/1 349/1 printing [15] 169/12 169/21 175/15 239/25 258/2 259/6 265/1 282/14 283/13 289/4 301/5 301/9 310/18 326/15 348/25 printout [5] 195/23 200/14 204/15 321/11 349/4 prints [8] 188/15 225/11 225/18 228/22 228/23 285/9 300/18 310/19 prior [9] 12/10 87/1 110/21 111/1 127/14 134/12 176/17 225/18 264/10 **prioritize** [3] 54/12 54/18 342/12 **prioritized** [1] 53/16 priority [2] 54/24 128/14 Priscilla [5] 338/14 338/15 338/17 338/20 341/1 privacy [7] 6/4 20/2 48/23 62/1 91/24 174/11 225/22 private [12] 48/12 65/23 65/25 66/12 66/14 66/14 66/20 72/15 72/16 92/10 210/4 333/23 privately [10] 90/10 91/18 99/4 99/9 99/11 108/11 108/12 110/3 112/22 166/19 privilege [3] 22/17 27/20 118/5 **pro [1]** 12/16 pro-bono [1] 12/16 **probable [2]** 279/8 282/3 probably [34] 24/22 28/14 61/11 62/13 63/17 73/24 74/16 82/4 82/5 98/5 104/7 116/21 125/8 125/22 125/25 130/13 151/16 158/11 158/20 166/25 173/25 208/13 214/20 218/19 276/20 281/10 281/13 282/16 283/18 284/9 317/12 318/20 318/21 339/14

probate [1] 110/13

problem [29] 9/9 13/24

23/15 23/16 25/18 26/10 26/10 26/11 33/6 43/23 44/25 58/12 63/10 64/4 66/19 76/15 88/25 89/4 93/17 95/6 97/3 109/13 109/15 132/1 221/15 281/4 281/8 301/22 310/6 problems [14] 26/8 28/18 30/12 42/22 46/7 68/12 69/3 88/15 321/1 321/1 322/6 326/19 335/7 348/2 procedural [1] 233/10 procedure [2] 14/21 15/2 procedures [10] 20/25 95/20 139/18 255/8 257/17 275/2 275/5 275/11 286/7 303/14 proceed [1] 74/22 proceeding [1] 10/13 proceedings [1] 10/2 process [87] 5/9 9/3 26/9 32/3 38/2 51/21 67/9 70/21 70/21 84/23 85/15 86/20 96/20 98/3 98/8 98/19 99/23 106/13 113/11 113/18 113/23 115/10 120/19 123/13 124/10 124/17 124/25 125/19 130/18 135/6 135/13 139/6 139/17 140/21 140/21 140/24 141/15 147/19 148/21 161/20 162/18 163/17 164/12 165/9 172/20 180/5 182/4 190/18 191/20 192/24 194/6 197/13 205/5 217/3 219/18 222/15 223/21 223/23 241/22 242/1 242/10 242/13 242/23 243/8 243/23 246/5 246/11 250/13 251/1 252/7 257/3 258/1 258/2 258/9 258/16 259/3 259/10 259/12 260/5 268/14 286/4 298/5 302/23 307/6 326/7 326/16 330/7 **processes [5]** 80/9 91/8 115/12 212/24 326/21 processing [3] 160/8 225/6 252/16 procurement [2] 148/21 229/8 produce [1] 350/7 **produced** [2] 64/4 149/21

produces [2] 143/1 162/1 product [10] 145/21 148/12 237/21 295/15 296/13 296/19 297/18 300/16 303/15 350/8 products [4] 297/24 298/5 304/10 331/24 professional [1] 49/15 Professionally [1] 17/9 professionals [4] 66/21 295/13 296/24 342/9 **professor [1]** 48/20 professor's [1] 71/5 proficient [1] 222/11 profile [1] 342/8 profit [1] 87/8 profoundly [1] 93/12 program [10] 17/16 77/22 80/1 82/21 101/6 130/23 287/5 299/2 307/11 307/15 programmed [1] 287/1 programming [2] 210/20 299/20 programs [2] 297/11 297/12 progress [3] 4/14 308/6 350/25 Progressives [1] 324/24 prohibiting [1] 85/9 project [2] 52/14 206/10 projected [1] 208/18 **projects [2]** 295/19 298/20 promising [1] 104/4 **promote [2]** 110/25 111/11 promulgated [1] 211/22 **pronounce** [6] 173/11 320/6 328/16 334/19 336/3 341/2 pronounced [1] 332/13 pronouncing [3] 88/1 320/5 349/13 proof [1] 157/12 proofed [1] 147/11 proofing [4] 210/19 216/24 217/2 218/9 **proper [5]** 47/7 70/7 271/6 332/5 332/5 properly [3] 43/16 114/8 114/22 property [1] 62/13 proponent [1] 33/18 proponents [1] 216/9 proposal [2] 326/11

344/21 **proposing [1]** 326/2 proprietary [3] 14/22 72/24 300/4 **prosecutor** [1] 17/13 protect [3] 17/6 47/3 328/7 **protected** [2] 269/12 325/4 protecting [6] 20/3 20/4 20/23 20/23 21/1 340/1 protections [1] 85/6 protects [2] 184/10 184/11 protest [1] 306/8 protocol [1] 303/24 protocols [2] 20/25 275/14 **proud [7]** 37/18 52/7 187/2 187/20 192/11 236/7 338/10 prove [1] 146/22 proven [3] 240/10 266/21 351/6 provide [33] 9/1 11/1 41/10 41/14 43/19 53/11 60/18 60/23 62/4 67/5 75/16 103/20 117/17 119/5 119/7 123/11 125/11 137/11 152/12 153/1 166/24 195/18 211/7 222/16 232/21 238/24 250/15 251/15 255/4 294/1 305/14 306/21 312/3 provided [8] 99/3 99/5 100/1 110/19 111/7 124/7 318/15 318/18 provides [6] 61/20 70/12 73/17 85/5 87/21 211/9 **providing [2]** 19/25 98/12 **proving [2]** 55/12 326/4 provision [3] 23/23 41/18 111/4 **provisional** [16] 31/3 31/10 31/12 31/19 32/14 32/16 32/19 33/19 33/23 34/5 34/6 35/20 38/14 115/15 115/18 255/9 provisional-ballot [1] 31/19 **provisions** [3] 85/16 85/23 99/20 psychosocial [1] 88/4 **public [23]** 2/23 3/20 8/20 8/23 9/3 9/5 10/15 14/23 17/17 58/1 67/25 P public... [12] 72/14 85/8 93/25 114/11 118/24 123/3 128/16 296/9 303/2 317/5 344/18 351/23 publicly [5] 7/22 72/5 72/6 109/12 109/12 publish [1] 276/6 published [4] 12/18 52/11 86/22 339/22 Puerto [1] 41/16 puff [2] 220/15 308/7 pull [11] 86/6 135/22 153/17 153/23 154/2 155/14 156/12 192/18 239/16 290/3 290/13 pulled [2] 148/3 165/12 pulling [1] 281/24 pulls [3] 243/17 243/24 293/23 **pulp [1]** 68/18 punch [6] 37/11 37/11 279/22 285/12 291/24 292/4 punishment [2] 345/17 345/19 purchase [9] 90/16 121/9 126/15 137/22 158/3 160/18 270/21 275/18 350/6 purchased [3] 132/19 132/20 159/12 **purchasing [2]** 90/18 271/14 pure [4] 282/10 282/11 347/16 348/16 **Purportedly [1]** 270/20 purpose [5] 11/1 23/12 24/10 117/16 314/12 purposes [4] 105/8 182/19 194/5 256/5 purview [3] 29/20 67/25 339/15 pushing [1] 140/25 put [49] 41/9 50/18 70/19 77/24 83/2 83/11 83/13 83/17 84/13 111/24 133/1 134/23 146/19 152/13 158/13 159/21 167/15 168/11 168/15 171/12 179/11 188/5 189/13 190/14 210/4 216/20 217/17 217/24 219/19 237/11 248/9 257/15 257/17 267/6 268/2 272/6 272/23 290/9 290/12 291/23 291/25 292/16

303/15 306/17 307/17

312/14 313/18 325/4

334/5 putting [9] 32/11 54/25 80/8 82/18 82/25 114/15 127/21 138/2 232/5

QR [27] 182/7 182/7 182/10 225/5 228/24 230/17 230/18 230/20 230/24 231/10 231/12 231/15 231/19 272/16 278/12 287/18 287/19 287/23 288/7 288/12 288/14 288/21 289/1 289/1 293/21 316/14 331/23

qualifying [1] 21/13 quality [1] 151/21 quantify [1] 263/18 quantitative [1] 58/1 quasi [1] 66/10 quasi-elections [1] 66/10

question [107] 10/21 34/8 39/25 40/4 40/22 41/2 41/3 41/20 42/3 55/7 64/15 64/20 65/22 66/11 67/13 67/14 68/3 68/7 69/1 71/5 71/6 71/9 71/10 76/22 77/23 111/17 114/8 114/9 114/12 114/15 130/20 131/9 131/14 133/21 137/16 137/19 138/7 138/20 138/21 138/24 140/18 150/6 152/6 152/7 155/15 157/25 158/8 160/21 160/22 162/7 162/16 162/17 164/23 166/17 167/13 167/20 169/2 170/4 170/8 170/17 171/22 186/15 186/16 195/20 196/19 197/16 197/23 199/15 200/14 203/8 204/15 205/4 205/12 226/20 228/13 250/5 250/15 252/21 253/17 254/4 254/8 254/15 254/22 254/23 255/13 256/21 260/10 260/16 261/12 262/10 263/17 283/10 285/18 285/25 286/20 287/7 288/6 288/23 289/8 290/17 292/4 292/20 292/21 292/24 293/9 293/12 311/4

questions [51] 8/15 10/25 11/8 11/23 12/1 23/1 48/6 48/7 48/17

57/13 57/14 60/19 74/3 74/5 86/5 88/9 110/11 115/25 120/18 133/13 136/10 142/18 143/24 144/19 145/22 147/7 156/3 157/16 159/24 161/16 167/13 194/12 194/20 195/2 196/10 203/9 226/15 247/7 248/15 249/25 252/14 254/16 255/22 262/12 280/8 281/15 284/15 313/4 313/8 318/13 344/19 quick [28] 26/21 33/17

83/9 134/12 136/9 144/2 146/24 148/5 149/2 157/16 171/22 178/7 195/19 198/19 203/8 204/6 204/15 205/3 217/4 221/18 223/24 225/25 231/1 247/9 257/16 264/18 293/11 325/9

quicker [1] 217/3 quickly [13] 29/8 154/21 166/13 178/2 191/25 224/6 224/10 231/5 275/13 278/17 290/19 322/6 335/4 quite [6] 63/17 70/1 118/9 135/21 215/15 282/3

quote [4] 90/19 278/1 325/20 325/21 quote/unquote [1] 278/1

Quoted [1] 2/7 quotes [1] 116/24

race [16] 69/12 92/6

164/20 184/10 185/5

185/13 185/17 243/24

R6 [1] 132/11

244/2 244/15 244/18 244/20 244/22 244/25 245/21 245/21 races [6] 185/4 244/9 244/13 245/19 246/19 263/11 racial [1] 12/17 radically [1] 78/9 Radio [1] 274/22 raise [4] 10/21 156/24 196/12 202/7 raised [6] 92/22 97/22 98/1 98/9 98/16 99/19 raking [1] 330/9 rampant [1] 13/24 Randolph [2] 337/17 339/23

range [9] 56/25 120/3 133/18 135/23 227/11 227/12 227/17 248/21 312/8 ranked [1] 326/3 ranking [1] 176/19 rapid [2] 70/11 225/6 rapidly [3] 69/24 69/25 297/5 rarely [1] 62/2 rate [5] 13/15 36/12 37/16 41/8 267/11 rated [1] 267/19 rates [2] 32/15 63/15 rather [3] 108/8 141/5 169/21 ray [2] 202/12 202/13 razor [1] 57/22 razor-focused [1] 57/22 re [3] 321/6 321/7 322/2 re-creation [1] 322/2 re-creations [2] 321/6 321/7 reach [5] 103/3 103/11 103/19 104/17 317/23 reached [1] 184/25 reaching [1] 41/22 reaction [1] 165/14 read [17] 93/14 94/1 105/7 106/22 107/2 107/4 107/8 184/17 222/6 225/8 246/13 272/18 277/23 287/24 287/25 331/16 331/21 readable [7] 214/21 215/1 255/19 277/20 278/9 313/24 314/2

reader [6] 112/17

46/11 51/12 173/6

239/9 246/24 262/5

90/12 91/21 136/9

154/8 160/5 176/12

224/6 224/10 247/8

real-life [1] 154/8

realities [1] 107/20

326/20

204/6 211/4 217/4

187/6 279/4

288/4

341/18 342/1 342/5 343/13 350/25 351/3 reason [17] 13/10 19/19 30/25 31/14 76/12 111/6 178/25 181/2 182/20 183/7 188/13 240/18 311/19 321/24 335/11 339/13 339/19 reasons [7] 50/22 112/20 149/4 175/12 61/16 93/18 95/18 146/15 332/24 350/12 reading [3] 2/6 96/17 recast [1] 15/15 receipt [3] 219/16 ready [17] 38/20 38/25 254/18 328/3 receipts [4] 321/25 175/25 178/6 187/22 326/13 326/15 326/21 187/23 221/2 236/20 receive [6] 51/8 51/18 111/20 111/23 119/4 279/12 317/14 318/25 241/22 real [25] 26/21 33/17 received [9] 17/10 55/4 61/3 75/23 83/9 21/23 123/4 142/18 180/4 243/10 292/8 295/10 348/15 receives [2] 219/5 221/18 223/24 224/2 243/19 receiving [1] 243/9 257/16 290/19 318/10 recent [3] 206/10 303/10 326/5 recently [4] 18/22 176/10 263/8 295/10 real-time [1] 326/20 receptacle [2] 225/19

reality [2] 167/24

realize [5] 29/18 29/19

really [82] 11/16 14/12

23/23 24/2 29/4 29/25

32/2 32/8 35/19 39/11

70/14 71/2 71/8 81/12

86/7 89/8 91/12 93/21

62/24 68/22 69/22

93/21 96/10 96/13

98/18 103/1 104/7

104/12 107/12 108/5

130/16 132/23 151/18

154/16 164/10 179/14

200/24 203/23 215/22

188/22 196/25 200/7

235/7 239/11 261/7

261/23 263/15 286/2

288/21 305/7 312/13

321/19 321/19 322/8

322/10 323/11 331/5

335/1 335/6 338/24

339/3 339/3 341/18

318/22 319/12 319/16

110/6 113/19 123/3

153/1 153/3 153/10

39/18 39/22 53/4 54/23

222/7 236/22 339/14

realized [2] 165/15

335/15

268/10

R redesigning [1] 30/1 regularly [1] 54/15 repairs [3] 266/14 redirect [1] 203/24 regulations [1] 124/3 273/21 273/22 receptacle... [1] 229/1 redistricting [1] 21/12 rehabilitation [2] 85/5 repeat [4] 14/11 40/1 receptive [1] 128/18 reduce [2] 31/21 263/6 46/4 170/18 recertification [1] reduced [1] 353/5 reinsert [5] 246/14 replace [8] 43/10 135/8 reduction [1] 275/15 246/16 254/20 254/24 127/16 132/1 135/5 recess [3] 233/23 reductions [1] 326/4 175/6 243/12 329/4 255/1 263/25 294/16 reel [2] 225/21 225/21 333/1 reinterpretations [1] recognition [2] 76/25 reel-to-reel [1] 225/21 149/20 replaced [2] 329/5 214/25 Reeves [3] 327/3 327/5 reissue [1] 255/11 333/11 recognize [11] 10/22 327/9 reiterate [2] 332/1 replacement [6] 5/22 28/21 184/12 184/22 reference [2] 85/17 346/19 121/10 121/19 122/2 184/23 193/8 212/13 251/9 reject [5] 63/2 63/11 133/11 133/14 212/23 215/14 239/1 referenda [1] 298/25 replacing [6] 57/4 57/4 137/5 196/24 197/1 340/7 **referendum [2]** 114/12 100/7 128/2 128/6 **rejected [3]** 137/6 recommend [10] 15/25 119/25 178/16 180/6 175/7 51/6 58/25 105/5 125/2 related [9] 21/11 24/3 referendums [2] report [8] 109/11 175/20 180/7 182/16 110/17 113/9 45/10 59/2 67/13 175/17 188/18 194/2 190/20 232/3 referring [2] 77/2 252/1 123/25 126/1 307/21 194/3 309/19 310/1 recommendation [7] refine [1] 78/1 316/18 326/19 11/6 14/14 14/16 15/10 reported [3] 189/5 reflect [1] 335/10 relates [1] 203/10 37/1 124/14 260/21 reflected [4] 191/16 relations [3] 234/19 189/6 300/25 recommendations [9] 191/23 194/1 201/6 295/20 295/24 reporter [6] 1/8 9/25 13/11 53/1 53/3 119/7 reflecting [1] 191/24 relationship [5] 85/1 10/4 10/7 10/9 353/18 123/17 124/12 125/13 Reform [1] 324/24 88/13 98/15 99/18 reporting [7] 56/9 126/1 126/8 refresh [1] 155/24 187/3 210/22 210/24 210/25 recommends [1] 16/9 264/12 298/7 300/23 refreshable [1] 93/16 relationships [1] reconcile [1] 68/1 regard [2] 127/24 216/22 reports [2] 175/15 reconciliation [1] 149/2 300/24 relative [2] 73/17 182/19 regarding [3] 11/4 353/11 represent [4] 121/3 record [31] 3/5 10/15 40/11 40/16 **relatively [1]** 97/13 331/19 340/6 346/1 27/17 109/14 147/17 regardless [4] 96/23 relay [1] 97/12 representation [3] 150/4 225/4 228/2 102/24 163/9 214/15 relevant [3] 11/15 71/2 316/17 325/2 325/17 238/12 245/23 246/1 regime [3] 77/2 77/10 222/21 Representative [8] 246/7 250/11 250/12 77/19 relied [1] 61/14 3/18 5/23 5/24 7/2 251/23 254/25 255/6 **Region [1]** 64/25 Relief [1] 21/22 67/12 117/15 204/24 256/13 256/18 280/17 regional [5] 234/16 relies [1] 61/5 234/8 302/17 302/20 309/7 234/25 235/12 264/23 relitigate [1] 154/13 310/2 310/18 314/16 295/22 rely [4] 49/13 66/17 255/18 315/25 316/21 325/10 regions [3] 266/11 122/9 293/14 representing [3] 5/4 333/24 353/7 266/11 273/13 remade [1] 147/12 49/21 257/12 recorded [2] 131/6 remain [4] 30/17 96/24 registar [1] 318/5 represents [2] 119/14 346/10 register [4] 32/9 105/7 139/9 326/21 120/22 recording [5] 68/20 250/9 321/9 remaining [1] 64/14 **Republic [1]** 188/21 147/3 149/7 187/15 registered [17] 27/22 remains [1] 109/19 Republican [5] 21/18 301/2 27/24 28/17 32/2 47/8 190/22 285/21 286/8 remake [1] 147/14 records [3] 303/5 64/7 123/8 132/7 remarks [3] 11/22 42/5 286/15 310/3 315/19 156/22 158/24 158/25 Republicans [1] recount [10] 26/11 169/22 240/10 261/2 175/23 remember [12] 8/9 44/17 60/13 69/25 91/1 266/24 270/5 298/13 25/23 38/11 47/4 89/20 request [5] 124/1 164/19 202/6 231/10 106/19 131/3 131/15 registrar [4] 32/1 124/4 125/20 213/10 322/8 324/19 122/24 317/22 318/7 197/7 283/20 334/4 214/12 recountable [5] 19/18 336/12 requested [2] 350/13 registrars [1] 4/24 20/14 69/7 70/15 350/8 remind [5] 10/11 57/10 registration [22] 6/12 350/16 recounting [4] 68/21 12/8 18/20 25/6 25/7 68/13 69/5 230/19 requesting [1] 350/17 69/17 70/11 70/12 25/9 29/19 30/3 30/6 remote [1] 300/15 requests [1] 123/21 recounts [3] 60/21 30/17 51/20 56/9 56/22 removable [1] 274/11 require [8] 38/6 134/19 164/24 322/10 105/18 116/5 117/23 remove [4] 60/20 134/19 174/19 185/16 red [10] 156/24 180/21 142/5 169/13 325/19 219/13 219/15 232/22 174/12 190/2 258/13 185/14 185/14 193/1 reopen [1] 259/15 325/22 325/23 347/4 required [4] 41/14 210/6 254/9 254/9 regular [4] 84/2 148/16 120/13 143/18 340/13 reorient [1] 181/6 254/13 285/13

154/25 252/17

repair [1] 211/7

requirements [12] 12/7 85/10 120/15 140/2 177/17 207/16 212/10 212/11 227/5 298/1 343/15 351/7 requires [9] 14/1 35/5 58/16 92/11 98/14 98/23 99/2 217/14 228/9 rescan [3] 165/17 238/20 306/21 research [3] 49/2 321/14 321/14 researching [1] 34/25 reselect [1] 183/7 reset [1] 315/7 resident [1] 296/4 resides [1] 298/21 residual [3] 35/25 36/3 36/6 resilience [4] 59/3 60/18 60/23 146/5 resiliency [6] 82/5 82/6 82/8 82/10 82/20 83/4 resilient [2] 59/8 83/7 resolution [2] 26/6 308/16 resolve [4] 15/9 23/16 25/2 238/19 resolved [1] 336/18 resolving [1] 30/12 resource [1] 53/20 **resourced** [1] 43/16 resources [8] 43/12 43/13 54/25 83/3 83/17 83/19 273/12 342/20 represented [2] 255/15 respect [4] 23/10 23/25 40/18 72/24 respond [2] 29/13 139/23 responded [2] 248/19 312/15 response [7] 55/18 56/1 231/1 234/11 240/20 252/22 253/10 responses [1] 81/17 responsibility [1] 80/4 responsible [3] 86/17 273/19 295/5 rest [4] 7/3 69/14 179/20 300/4 restore [1] 335/19 restroom [2] 9/12 9/15 result [3] 32/14 44/21 148/14 results [43] 19/24 20/8 44/19 56/23 60/14 75/16 114/7 143/4 146/22 147/24 150/6 151/20 152/19 188/11 requirement [3] 221/13 188/15 188/17 188/19

223/5 348/24

R results... [26] 189/20 190/8 190/9 192/2 192/8 194/2 210/15 210/20 210/21 238/5 258/12 258/17 259/22 278/6 298/7 298/8 299/22 300/22 301/24 309/11 309/20 310/1 310/3 310/22 326/8 350/8 retain [2] 107/12 188/2 rethink [1] 151/12 return [4] 237/25 250/20 261/9 306/6 reveals [1] 272/24 revert [1] 36/21 review [36] 12/20 22/2 136/23 185/1 185/19 185/25 186/2 198/24 199/5 209/18 209/19 210/5 215/7 218/15 218/16 224/25 226/6 226/7 244/11 244/12 244/24 245/1 245/4 245/10 245/18 246/5 246/18 254/24 255/4 302/25 306/10 306/11 306/22 308/25 309/6 313/23 reviewed [3] 245/6 245/11 246/24 reviewing [3] 185/2 293/7 304/13 revolutionizing [1] 236/10 **RFI [7]** 125/12 234/12 240/21 248/20 252/23 312/15 341/25 **RFP [4]** 158/13 195/4 227/5 227/7 rhetorical [1] 152/7 **Richard [1]** 347/3 **Richmond [10]** 74/8 88/18 137/18 253/18 324/17 332/20 333/5 333/10 339/7 339/22 Rick [4] 344/1 346/24 346/24 346/25 Rico [1] 41/17 ride [1] 133/8 right [199] 4/6 8/22 9/13 9/18 9/20 11/13 12/2 18/5 25/11 27/25 28/9 29/16 33/2 33/9 36/20 39/14 39/17 40/14 40/14 41/12 42/6 45/9 46/22 46/23 47/5 47/8 54/6 54/13 57/8 23/20 24/2 24/6 41/19

65/16 65/17 68/9 68/9

69/1 71/11 79/14 79/15

82/13 82/19 83/21 86/9 87/5 87/6 91/22 94/14 106/3 109/9 109/24 109/25 110/2 114/9 114/15 116/11 117/16 117/16 118/15 119/13 121/23 122/12 123/8 124/17 128/11 129/21 129/23 130/9 132/24 138/11 142/17 143/22 144/10 152/16 157/13 157/21 158/12 160/3 160/7 161/12 162/16 164/16 170/25 173/8 173/11 174/10 178/13 185/5 185/25 186/20 187/12 191/5 191/8 191/11 191/13 191/14 193/9 193/14 193/25 195/9 199/3 200/1 201/16 201/17 201/22 202/1 203/22 205/3 205/3 205/20 207/21 207/23 209/15 211/17 217/13 218/22 220/5 221/3 221/5 222/24 227/19 233/19 234/5 234/20 235/11 235/25 238/19 239/1 240/13 246/18 247/10 248/22 250/9 254/15 254/19 262/9 262/10 263/14 264/2 270/15 270/23 271/3 275/4 275/4 275/5 278/3 278/21 279/1 279/3 279/9 279/19 281/1 281/12 281/18 281/22 283/10 283/24 286/15 286/16 287/10 287/11 291/10 291/22 292/6 293/16 294/14 294/19 298/22 301/17 305/19 306/24 307/2 307/4 312/25 314/20 314/23 315/6 316/24 317/2 317/9 317/9 318/11 320/11 320/13 322/10 322/11 322/15 324/2 324/7 325/1 325/1 325/3 325/11 328/4 328/7 328/14 330/3 332/13 334/24 336/4 336/20 337/9 right-hand [1] 209/15 rights [30] 5/19 6/1 11/3 12/16 13/3 15/4 17/23 18/1 18/22 18/25 20/3 20/23 21/12 23/18

42/7 42/9 42/15 43/6

45/2 45/10 47/3 85/18

86/19 98/14 109/2 325/8 rights' [1] 11/5 rigorous [2] 77/10 77/18 rise [2] 3/25 26/12 risk [40] 19/22 39/4 51/17 54/15 54/18 58/3 74/10 74/18 75/5 75/13 75/15 76/23 77/1 77/5 77/10 77/19 77/21 78/12 79/12 79/13 79/13 81/6 81/19 84/13 142/14 189/10 191/17 197/4 197/6 197/12 225/15 303/7 321/21 322/5 325/4 332/5 342/8 342/11 342/12 342/13 risk-limited [4] 189/10 191/17 197/12 321/21 risk-limiting [16] 19/22 58/3 74/10 74/18 75/5 76/23 77/1 77/5 77/10 77/19 77/21 197/4 197/6 225/15 303/7 332/5 riskiest [1] 56/7 risks [10] 54/11 54/12 54/13 54/16 54/19 54/24 55/1 56/20 82/22 134/17 **RLAs [1]** 164/4 road [2] 151/5 271/9 roaming [1] 273/14 robust [3] 300/22 301/11 303/18 Rockdale [1] 141/23 **Rogers [2]** 234/18 324/8 role [9] 55/25 64/20 65/8 65/18 180/18 277/6 295/4 297/18 297/21 role-based [1] 277/6 role-playing [1] 180/18 roles [4] 16/24 48/12 65/23 295/25 roll [3] 235/23 315/20 316/2 roll-out [1] 235/23 rolled [3] 248/6 249/18 262/14 rolling [3] 141/22 218/21 261/18 rolls [4] 105/16 239/24 248/7 258/6 room [14] 15/6 28/19 42/19 117/14 141/15 161/16 161/17 178/5

227/13 249/20 252/14

270/10 287/16 296/8

Roswell [1] 349/22 roughly [2] 267/14 282/10 route [2] 226/2 228/21 routine [2] 59/20 60/13 routinely [1] 59/18 Roy [2] 26/1 26/2 rule [2] 136/13 320/16 rules [5] 124/2 136/16 163/23 198/11 211/12 run [14] 14/2 29/9 101/10 205/2 207/8 207/20 207/21 210/12 237/10 266/7 296/15 296/19 326/2 340/15 run-off [1] 326/2 running [7] 37/2 153/13 247/10 268/7 336/23 337/5 340/2 runs [1] 348/5 rural [11] 16/7 88/21 88/24 100/17 101/24 102/7 129/14 129/25 130/8 339/5 340/16 Rutledge [1] 327/9 safe [10] 1/6 3/4 3/21 66/24 145/7 206/3

334/14 334/14 339/15 339/19 **safeguard [1]** 14/13 safety [4] 3/20 34/7 118/24 128/16 said [62] 2/2 8/1 10/5 10/10 10/16 24/7 26/1 26/2 26/22 29/5 36/2 46/22 54/20 58/9 59/8 60/1 63/1 76/21 77/25 78/9 83/5 83/21 90/4 96/12 114/23 115/1 115/3 115/16 115/17 117/2 117/12 117/15 131/10 139/25 148/22 155/12 155/14 159/9 166/8 166/11 174/4 218/13 223/17 234/24 239/8 240/4 248/24 250/7 260/11 260/14 268/8 286/1 288/25 289/1 296/12 320/11 320/12 329/3 332/2 336/15 339/19 340/10 sake [2] 20/16 38/17 salary [1] 128/17 **sale [1]** 125/10 sales [5] 96/5 145/11 234/17 235/13 264/23 salesperson [1] 234/25 same [84] 12/8 31/9 33/12 36/18 37/10

37/12 39/6 39/20 77/20 89/24 90/24 90/25 92/8 92/12 97/5 97/7 97/8 99/3 99/15 99/17 99/25 102/1 107/17 107/22 107/23 108/3 109/7 109/8 110/5 121/24 129/20 137/9 138/14 140/24 141/3 141/6 150/8 179/4 179/22 180/5 194/21 196/7 196/8 213/25 214/5 214/7 215/3 216/10 216/10 216/11 216/13 228/2 231/7 233/2 243/8 243/12 245/17 249/5 249/10 249/12 250/2 252/18 255/7 258/21 259/11 262/3 268/25 276/21 280/18 284/10 298/9 298/13 298/13 298/14 299/19 299/20 301/23 305/4 307/19 310/2 325/22 326/16 334/13 350/11 same-day [2] 12/8 325/22 sample [1] 207/2

Sara [3] 196/12 196/13 198/18 **satisfied [4]** 186/4

245/6 245/11 246/23 Savannah [1] 234/20 save [3] 155/20 194/12 329/17

savings [2] 148/25 148/25

saw [10] 148/2 166/13 173/20 210/2 234/20 254/20 283/15 283/16 319/22 350/22 sav [75] 4/4 11/21 13/16 14/7 22/16 24/14 33/18 34/20 39/9 40/1 42/6 45/18 46/3 47/22 51/3 55/2 67/22 68/4 78/15 82/15 89/25 96/5

98/7 102/23 106/9 109/20 114/5 124/20 128/17 128/23 129/14 138/23 144/3 155/3 162/10 174/7 178/22 178/23 187/5 195/11 195/11 196/23 196/24 197/9 201/20 202/7 207/13 212/15 222/3 226/10 228/19 252/8 255/6 257/20 258/21 261/21 263/2 265/2 266/25 271/2 276/21 283/21 286/10 296/16 323/10 324/14 327/6

S say... [8] 334/22 337/6 337/8 337/22 337/23 338/10 344/10 345/9 saying [18] 32/6 35/3 59/11 68/8 76/9 80/23 83/1 83/6 115/8 185/15 200/7 205/5 218/19 223/7 277/11 302/4 306/5 337/11 says [18] 23/3 29/15 66/11 79/20 82/22 178/5 179/14 191/8 191/9 193/2 223/16 237/20 245/12 245/24 254/19 259/20 259/21 280/25 scalable [1] 301/7 scalpel [1] 202/12 scan [43] 118/6 118/7 118/11 126/24 136/21 146/13 146/14 149/3 160/9 162/24 162/25 163/7 172/2 181/11 181/13 187/11 189/16 189/17 189/18 192/23 195/8 195/12 198/24 203/21 209/6 209/24 209/25 231/9 237/12 250/7 252/19 253/16 261/4 261/5 261/6 280/25 285/8 288/20 292/23 293/22 302/20 303/22 313/21 scanned [10] 28/22 160/13 162/19 170/13 237/1 256/9 299/21 300/21 302/19 311/1 scanner [57] 14/2 62/9 156/23 171/1 173/21 177/19 178/16 180/13 186/10 186/23 188/6 192/23 196/7 196/8 197/10 199/3 199/11 209/6 210/1 226/3 236/12 236/25 237/10 237/16 240/12 252/23 260/24 261/10 261/13 269/4 269/22 271/1 271/23 272/6 272/23 278/6 278/25 280/20 280/20 281/8 281/10 281/17 282/24 284/2 285/6 285/7 286/3 288/3 291/17 291/24 293/4 293/18 293/19 299/22 302/13 302/18 310/24

scanners [14] 150/21 172/2 174/24 198/21 198/25 253/4 253/20

259/1 260/11 260/22 284/5 321/18 321/21 329/18

scanning [13] 37/3 158/18 158/19 200/23 227/16 227/24 247/2 256/8 300/4 301/14 302/13 305/24 332/4 scans [3] 39/7 226/6 301/23

scare [1] 47/14 scary [1] 63/23 scenario [4] 179/23 180/6 191/13 247/21

scenes [2] 141/16 141/20

schedules [1] 15/21 scholarly [1] 86/22 school [5] 12/21 17/16 17/17 193/4 200/10 science [4] 48/20 57/17 57/25 66/6

scientists [2] 57/21 350/9 scope [1] 40/8 Scott [1] 295/20 scrambled [1] 274/21 scratch [1] 180/2 screen [61] 63/19 106/23 106/25 112/17 112/17 112/20 112/20 142/21 175/12 179/16 180/19 180/20 181/5 181/23 182/23 183/9

183/13 183/18 183/21 184/3 184/6 184/24 185/2 186/18 187/6 187/13 188/13 189/25 191/10 191/11 196/21 196/24 204/8 204/13 209/18 210/5 218/9 220/17 221/10 224/25

226/6 236/18 239/9 243/25 244/3 244/6 244/8 244/12 244/12

244/24 245/2 246/18 246/21 250/16 280/6 280/7 280/10 280/24

280/25 308/12 308/14

screen-reader [2] 175/12 187/6

screens [4] 220/3 220/4 280/4 280/10 **screwdriver** [2] 273/1

273/5 scroll [1] 153/22

scrutiny [1] 337/9 seal [3] 190/1 202/2 274/15

sealed [3] 202/5 309/22 316/6 seals [5] 188/22

188/25 189/3 274/8 278/10

seamlessly [1] 210/12 Sean [18] 12/2 12/3 12/20 12/22 16/18 26/15 26/22 27/12 30/22 32/18 34/5 35/22 38/24 40/22 43/2 45/3 264/20 287/10 season [1] 325/25 seat [2] 32/20 294/20 seated [1] 4/7 **Seattle [1]** 148/18

second [22] 3/4 8/1 14/14 28/4 33/10 46/18 48/10 90/20 152/14 167/20 173/24 176/23 179/12 179/13 186/25 241/16 250/5 282/24 288/6 292/19 303/9

second-generation [1] 90/20

342/3

secondary [2] 147/11 159/16

secondly [1] 287/1 seconds [9] 163/8 174/21 190/7 192/3 237/12 238/3 261/6 279/11 351/14

secret [5] 14/23 43/24 71/22 90/11 110/4 **secretary [35]** 7/9 7/10 8/1 24/24 30/11 59/4 66/4 68/5 110/23 121/20 123/22 124/8 125/11 140/4 141/13 143/2 143/6 143/16 143/25 145/7 206/2

217/7 217/10 324/18 327/15 337/1 337/4 340/2 341/13 343/17 345/5 345/15 346/7

350/5 350/10 section [4] 23/21 23/22 184/19 200/18

sector [4] 66/12 66/14 66/14 66/20

sectors [2] 48/12 65/23 **secure [21]** 1/1 3/9 19/18 20/13 52/19 62/11 64/21 69/4 70/22 71/13 125/13 150/10 201/15 215/10 228/25 239/22 276/24 300/17 303/23 305/15 326/8 secured [2] 276/12

309/21 securely [1] 327/24 **securing [2]** 30/16 57/22

security [118] 5/19 6/4

6/5 6/5 48/1 48/23 48/25 49/2 49/3 49/10 49/14 49/16 49/21 49/25 50/2 50/3 50/6 50/8 50/10 50/16 51/10 51/12 51/15 51/17 51/25 52/8 52/11 52/12 52/16 52/20 52/22 53/5 53/23 53/23 54/4 54/5 54/8 55/15 55/15 56/7 56/20 57/1 58/13 58/14 59/3 64/18 64/24 64/25 65/7 65/8 65/11 65/24 65/25 66/9 67/9 71/12 79/7 80/1 80/4 80/18 93/18 101/14 101/15 101/19 127/17 138/10 140/22 141/1 141/5 141/6 142/4 142/11 150/1 150/3 182/8 188/22 190/1 202/2 202/5 211/16 212/10 212/21 213/1 213/2 215/20 215/24 216/16 243/15 259/5 259/15 259/19 273/24 274/1 274/5 275/14 277/5 295/3 295/6 295/6

295/6 295/7 303/11 303/12 304/1 304/2

304/3 304/8 304/11 304/13 310/6 310/7 316/20 321/1 322/3 327/17 331/10 340/23

351/15 security-seal [1] 202/2 see [123] 3/8 6/14 8/6 8/8 8/21 14/11 20/22 25/4 33/23 46/16 47/17 49/4 49/6 62/12 63/22 65/8 70/18 71/25 84/2 94/3 94/21 107/2 112/19 116/12 117/4

125/8 125/19 125/23 126/3 126/4 128/16 129/12 135/14 153/6 153/24 154/9 154/15 154/19 154/22 155/17

118/14 120/5 120/10

166/4 170/12 170/21 171/1 174/10 178/2 178/4 182/4 182/25 185/14 186/20 191/23 193/2 193/15 195/22

155/25 156/16 164/9

198/16 200/16 201/7 206/14 209/12 211/18 212/22 213/24 214/20 218/10 220/24 221/2

222/12 222/19 223/5 223/8 223/10 223/12 224/6 224/20 225/5

235/6 237/4 244/15 244/18 246/6 246/8 252/24 255/7 263/15 269/11 272/7 272/12 272/14 272/16 274/2 274/9 274/13 277/13 278/14 278/14 279/2 279/10 279/24 280/4 280/9 284/15 285/13 287/25 288/1 288/8 296/8 298/2 298/10 302/21 304/22 319/13 332/14 335/8 341/16 341/24 350/25

seeing [6] 79/1 126/1 150/9 220/5 246/20 262/20

seek [1] 56/18 seem [1] 322/4 seemed [1] 160/11 seems [4] 15/2 101/15 138/8 177/25

seen [21] 104/2 172/12 175/5 179/25 183/10 184/13 184/16 226/5 226/21 227/1 238/14 238/15 256/23 265/2 280/22 284/25 292/25 316/3 321/6 340/17 351/4

sees [1] 225/17 segment [1] 78/23 segregating [1] 140/23 select [7] 94/10 183/3 185/13 188/14 191/5 219/25 325/1

selected [2] 184/14 205/6

selecting [2] 102/24 212/7

selection [14] 59/21 179/21 185/15 223/18 244/22 244/25 245/21 245/24 246/13 308/18 308/21 309/1 309/3 309/5

selections [37] 64/3 184/20 185/2 186/3 186/17 188/2 191/12 191/21 191/23 209/18 209/19 209/20 210/6 215/6 223/19 224/7 225/1 228/24 238/7 238/8 244/1 244/8 244/13 245/7 245/10 245/10 245/20 246/1 246/19 246/24 255/15 257/13 306/20 308/23 309/16 315/18 316/17 **selects** [1] 181/10 self [2] 55/11 209/13

self-branding [1]

S session [8] 5/17 6/18 sheets [1] 8/21 8/24 9/1 13/20 76/24 **Sheila [3]** 162/16 self-branding... [1] 121/18 225/9 228/13 262/10 55/11 set [28] 7/18 7/21 28/7 shelf [9] 150/14 150/21 self-contained [1] 37/23 53/6 67/4 74/21 175/3 229/11 300/3 209/13 77/14 104/10 104/11 300/5 310/21 311/11 sell [2] 125/7 304/20 114/13 135/4 139/12 311/21 senate [6] 66/6 69/10 144/16 146/1 153/2 Shelly [2] 206/1 212/14 125/1 125/25 177/1 158/21 173/5 174/21 **sheriff [3]** 7/20 178/23 328/23 176/1 186/7 189/16 185/16 Senator [9] 65/21 205/17 233/22 240/5 shield [2] 174/11 67/14 72/12 76/21 318/2 318/21 319/5 174/12 77/25 80/23 117/2 set-up [4] 158/21 240/5 Shiloh [1] 87/20 193/17 198/20 318/21 319/5 **shine [1]** 153/10 send [7] 137/12 169/25 sets [2] 263/24 281/23 shocked [1] 342/24 177/9 177/15 192/15 setting [3] 69/17 **shook [1]** 166/10 273/22 279/3 104/20 352/5 **shooting [1]** 76/18 senior [5] 50/1 57/17 settled [2] 3/3 125/4 **short [13]** 15/16 58/23 87/22 89/25 234/18 setup [4] 145/13 168/2 78/16 134/18 135/2 seniors [1] 88/16 173/18 269/17 136/4 136/6 138/11 sense [3] 62/2 140/23 **Setzler [2]** 67/12 139/18 139/21 270/4 332/3 117/15 294/11 318/12 sensitive [1] 214/19 seven [5] 135/12 short-handed [1] sensor [1] 51/23 146/10 295/22 318/20 294/11 sensors [2] 51/24 337/18 shortening [1] 41/6 315/24 Seventh [1] 12/12 **shorter [1]** 261/19 sent [1] 307/16 seventy [1] 270/17 shot [1] 80/24 **sentence** [1] 2/5 several [18] 3/19 51/4 **should [41]** 11/4 14/18 separate [3] 149/14 60/14 82/4 87/12 14/21 14/23 33/20 160/16 290/12 33/21 40/15 44/19 127/13 129/21 202/23 separated [1] 291/9 216/22 216/25 229/17 51/10 52/19 53/4 56/14 **separately [1]** 166/22 231/4 235/25 236/3 62/6 62/13 64/8 71/13 **September [4]** 123/16 256/1 298/12 307/9 71/14 74/2 78/19 79/2 123/19 230/8 353/15 307/21 96/19 101/1 102/14 September 1 [1] **Shack [1]** 274/23 105/4 109/11 123/5 123/16 shape [1] 128/7 123/9 151/1 151/13 September 4th [1] shapes [2] 94/13 94/20 152/9 155/5 175/23 123/19 **shaping [1]** 107/6 178/22 178/23 195/7 series [2] 187/16 209/9 203/20 220/4 221/25 **share [2]** 217/22 serious [2] 214/3 319/14 271/18 321/17 331/4 254/15 **sharing [6]** 19/6 50/11 should've [1] 96/16 seriously [1] 342/16 50/13 50/13 50/21 shouldn't [2] 14/22 serve [6] 19/12 22/19 65/14 33/20 66/5 90/19 104/18 **she [30]** 11/17 16/22 **shout [1]** 58/5 119/23 17/10 17/12 17/13 **shout-out** [1] 58/5 served [12] 12/14 21/14 21/17 21/23 22/1 **show [48]** 8/17 25/14 16/24 17/13 21/14 44/14 59/5 59/8 86/10 25/14 31/15 32/9 45/23 49/25 86/13 122/23 87/3 87/6 87/11 87/13 99/6 104/9 145/20 131/8 176/17 176/25 146/24 152/1 152/23 87/14 87/19 88/3 177/2 265/22 119/13 119/16 133/3 152/25 154/8 156/2 serves [3] 17/12 209/2 234/21 280/15 280/16 156/8 157/7 166/12 209/3 281/3 324/21 337/6 168/8 171/2 175/14 service [7] 97/12 99/25 344/5 176/21 180/14 180/18 195/16 195/18 267/12 she'll [1] 280/19 181/8 181/17 188/6 275/15 338/24 she's [13] 22/20 86/12 189/15 192/10 192/12 **services [15]** 51/19 86/22 88/5 279/15 196/5 196/21 198/9 65/17 86/17 87/22 280/5 280/14 280/20 201/3 207/11 207/15 87/24 145/12 158/14 281/14 324/22 333/9 217/4 217/6 222/9 176/5 206/9 208/21 337/2 344/4 224/19 228/9 242/15 208/24 226/13 267/2 246/18 252/3 256/14 **sheet [5]** 126/24 267/19 297/25

268/16 268/19 268/20

310/20

serving [1] 4/9

313/13 313/15 319/18

Show-Me [1] 201/3

showed [9] 150/13 166/10 192/20 192/24 196/14 259/24 280/18 313/14 323/8 showing [8] 34/14 152/16 163/1 178/24 200/11 203/1 236/7 243/14 shown [1] 62/20 shows [12] 11/17 27/19 44/15 79/18 97/10 153/12 154/3 170/13 170/14 244/12 251/15 308/25 shredder [2] 168/11 168/16 shuffles [1] 225/24 shut [3] 239/16 277/1 339/21 sic [3] 2/2 339/7 343/24 side [30] 9/14 67/21 71/21 121/15 139/24 142/5 142/5 168/24 181/4 181/7 191/10 191/11 196/11 209/15 209/17 219/10 219/11 219/11 227/13 230/15 231/22 252/15 256/13 256/14 280/5 280/9 284/14 288/13 289/6 289/14 sides [3] 24/21 219/9 349/24 sidewalk [1] 182/21 sign [12] 8/21 8/22 97/5 106/1 106/2 115/11 125/3 126/5 175/20 175/21 175/23 184/4 sign-up [1] 8/21 signature [5] 114/25 115/21 181/5 181/16 219/14 **signatures [2]** 219/13 339/8 signed [4] 181/21 303/18 317/7 351/24 significant [2] 141/21 151/2 significantly [1] 20/15 **signing [2]** 51/20 316/20 signs [1] 125/9 silver [2] 43/14 58/11 silver-bullet [1] 58/11 similar [15] 51/24 113/2 262/21 262/23 263/15 266/11 268/25 280/21 282/12 284/25 297/10 297/16 306/15 312/12 312/20

similarly [1] 201/21 simple [10] 96/24 109/18 147/5 236/17 236/23 239/7 240/5 281/24 298/8 298/8 simpler [1] 332/2 **simplicity [2]** 331/25 332/7 **simplified [2]** 256/25 257/4 simplifying [1] 260/4 simply [37] 20/6 20/16 38/16 54/19 55/9 173/21 174/7 174/15 175/6 175/16 177/13 177/18 179/9 180/10 182/9 186/5 188/1 188/9 189/24 193/12 194/4 243/16 244/1 244/24 246/14 255/3 259/5 259/14 278/5 306/2 306/8 308/18 308/22 309/4 309/13 309/17 326/12 since [17] 17/15 18/3 19/15 40/7 48/24 59/11 86/12 112/5 118/10 159/7 202/8 212/6 264/25 296/4 328/25 330/4 350/15 sincerely [1] 318/1 single [12] 54/9 217/21 238/9 241/17 241/19 259/10 280/7 298/15 298/17 298/21 301/20 310/14 sip [2] 220/15 308/7 sip-and-puff [2] 220/15 308/7 sir [11] 47/21 157/22 157/24 170/6 173/12 176/24 224/1 293/17 294/13 311/12 338/3 sister [1] 22/18 sisters [1] 168/13 sit [6] 22/4 27/23 33/25 198/13 276/25 317/14 site [5] 30/25 89/8 89/16 295/17 348/23 sites [10] 88/17 88/19 88/20 88/22 89/1 89/6 89/7 106/15 342/7 347/25 sits [1] 275/9 sitting [6] 46/15 64/17 76/7 80/3 190/22 279/9 **situation** [5] 155/1 164/24 250/21 290/1 340/10 situational [1] 82/24 **situations** [2] 172/3 199/10

S six [10] 34/13 53/2 121/18 124/10 175/22 296/25 318/6 327/21 336/13 336/16 sixty [2] 131/21 203/3 size [15] 90/22 123/7 129/19 237/7 240/4 247/19 253/9 263/4 263/14 272/14 280/11 307/24 308/17 309/14 314/5 sizes [1] 253/5 sizzle [1] 185/20 Skadden [1] 12/14 **skill [1]** 325/13 skip [2] 174/5 309/1 **skipping [1]** 174/6 slate [2] 12/14 298/24 **slates [1]** 93/16 **slide [7]** 163/2 163/3 180/12 188/9 220/6 230/22 247/1 **slides [1]** 208/3 sliding [1] 178/2 slip [7] 178/17 178/18 180/8 182/6 187/9 321/9 321/16 slips [1] 321/7 slot [2] 186/6 210/5 **slowly [1]** 139/20 small [21] 24/5 24/6 32/12 53/2 63/4 65/3 158/20 165/6 191/4 195/20 196/1 196/2 200/14 201/22 222/8 224/12 240/8 253/2 253/12 267/1 301/8 smaller [8] 26/11 129/25 130/9 189/19 195/12 195/23 270/21 282/20 smallest [2] 120/11 266/23 smart [8] 22/3 54/21 54/21 146/13 146/20 150/16 209/7 230/20 **smarter [1]** 81/18 Smartmatic [6] 6/21 205/16 205/22 206/1 206/7 206/13 Smith [9] 153/16 156/1 171/2 171/3 206/9 208/20 208/23 338/14 338/20 Smith's [1] 73/16 smoothly [1] 103/22 **Smythe [4]** 338/15 341/2 341/4 343/24 so [739]

So in [1] 62/2

soapbox [2] 45/17 192/4 social [4] 80/13 96/7 182/8 243/15 Society [1] 21/20 socioeconomic [1] 42/14 soda [4] 177/22 178/1 186/6 186/13 software [32] 6/22 14/15 16/13 49/3 61/18 66/8 83/12 84/1 112/21 141/17 170/2 191/1 191/12 193/9 202/14 210/13 216/18 229/21 233/20 233/22 234/1 234/11 235/13 235/16 238/10 256/12 256/15 264/19 290/2 295/16 298/14 303/13 software's [1] 190/23 Software..... **.233 [1]** 2/20 sold [1] 126/7 sole [2] 51/15 213/12 solely [4] 54/2 55/11 55/22 56/16 solid [1] 323/14 solitaire [1] 275/24 solution [12] 58/12 216/2 227/25 229/10 232/20 234/13 235/8 299/11 301/5 305/21 323/13 337/8 solutions [4] 2/18 6/21 75/19 301/14 **solve [6]** 58/12 66/19 68/12 69/2 93/17 134/15 solved [1] 109/15 some [134] 7/2 7/24 9/10 9/11 11/19 11/22 16/24 25/23 28/18 31/13 33/21 37/3 37/8 40/4 42/24 48/16 52/15 54/3 54/3 55/10 56/11 56/12 59/1 59/12 59/19 62/2 62/16 63/8 71/22 72/21 74/23 76/12 77/13 89/1 89/14 92/1 92/25 93/3 93/4 95/1 96/3 96/5 96/11 96/12 96/22 97/23 100/23 104/24 105/2 106/1 115/1 115/3 116/22 116/24 117/17 120/12 120/14 120/18 123/25 123/25 127/25 128/3 130/25 131/4 131/7 131/24 132/10 132/14 132/15 134/21 135/9 146/14 149/5 151/4

156/3 164/3 182/20 188/12 204/1 206/19 207/2 207/13 208/2 210/3 212/15 214/3 215/13 215/15 218/12 220/7 224/10 224/15 224/17 230/5 230/20 231/8 233/14 250/10 261/1 262/1 262/2 262/16 263/10 264/13 264/15 266/14 267/17 268/5 270/20 273/11 273/21 282/20 283/12 283/19 283/20 294/6 301/13 311/16 311/19 312/14 316/19 316/20 318/23 319/4 319/17 321/6 321/9 321/12 321/14 323/6 325/20 329/8 345/16 349/3 **somebody [26]** 10/8 24/21 46/24 46/25 47/2 95/9 95/11 95/16 95/19 95/21 97/6 97/10 105/23 112/16 115/16 115/17 115/18 115/20 149/13 156/4 180/3 183/4 197/20 200/8 247/22 334/7 somebody's [4] 47/7 115/15 197/19 333/3 somehow [4] 42/13 138/21 277/25 278/4 someone [17] 32/11 36/9 93/12 98/8 104/22 114/25 115/2 159/4 177/10 183/6 183/19 223/24 232/5 265/18 276/24 277/14 291/22 something [74] 23/2 26/12 26/21 27/8 27/9 27/18 31/2 33/5 35/5 37/17 40/13 40/15 40/20 42/23 44/16 56/2 60/15 63/6 63/18 68/18 68/20 77/25 78/8 81/4 81/8 81/21 82/10 82/14 83/13 96/6 98/2 102/22 114/19 115/3 115/5 115/7 115/13 115/22 136/5 136/13 138/25 139/8 141/1 143/13 154/24 155/3 155/5 156/5 166/20 192/11 222/17 222/17 233/5 242/21 246/6 247/8 252/24 255/25 261/25 277/3 277/4 283/2 292/22 293/6 304/20 306/25 307/1 311/8 319/8 340/7 340/11 340/22 342/15 343/21

somethings [2] 96/14 96/15 sometime [1] 205/6 sometimes [14] 32/25 139/25 141/21 156/6 156/6 156/15 161/8 172/23 178/9 183/8 201/19 261/20 271/7 274/7 somewhat [1] 63/14 somewhere [4] 248/21 282/15 312/17 312/24 son [1] 324/13 **Sonny [2]** 25/25 26/3 soon [3] 41/22 276/6 278/1 sophistication [1] 70/2 sorry [10] 78/20 128/20 133/19 135/24 177/6 200/6 204/25 251/22 268/8 286/23 sort [16] 26/3 28/18 28/25 70/17 72/24 88/10 89/6 91/11 92/1 134/17 240/24 242/8 290/10 302/25 308/10 349/3 sorts [1] 133/9 207/23 323/14 sounds [4] 52/21 103/25 272/1 343/16 soup [1] 266/7 source [12] 14/15 14/20 14/22 16/13 71/16 72/3 72/4 72/8 72/22 72/23 72/25 73/19 south [6] 65/1 119/11 171/25 235/1 236/1 248/25 Southern [1] 12/13 **span [2]** 92/5 139/18 Spanish [8] 41/14 41/17 41/25 97/19 97/19 98/6 221/14 221/14 Spanish-language [3] 41/14 41/17 41/25 Spanish-speaking [2] 97/19 98/6 spare [2] 214/4 311/20 **spawn [1]** 298/19 speak [15] 3/14 8/3 10/19 13/2 40/10 71/7 75/2 90/6 96/2 101/19 121/23 126/20 130/6 132/5 174/5 speaker [1] 222/11 speakers [1] 350/2 speaking [15] 23/20 41/8 97/19 97/22 98/2

98/6 98/9 102/5 121/13 133/18 135/23 213/6 293/3 324/11 339/14 speaks [2] 38/24 97/7 special [4] 21/15 241/23 243/17 318/24 special-option [1] 318/24 specialist [1] 296/3 specialize [1] 49/3 **specialty [1]** 342/14 **specific [1]** 34/2 specifically [3] 42/7 164/3 315/2 **specifics** [1] 85/22 **specify [1]** 64/8 speech [2] 2/4 2/5 **speed [6]** 224/5 252/19 253/8 253/20 254/3 255/24 spelling [1] 2/3 **spend [9]** 34/25 83/16 138/8 236/5 240/17 270/16 271/18 273/17 329/24 spending [2] 27/7 132/4 **spends [1]** 267/23 sound [4] 66/24 135/25 spent [3] 215/21 322/23 323/10 **spit [1]** 14/3 **spite [1]** 339/18 spits [1] 39/8 spoil [8] 37/5 37/10 171/15 179/10 237/25 250/22 286/5 286/12 spoiled [2] 179/11 255/10 spoiled-ballot [1] 179/11 spoiling [1] 255/8 **spoke [2]** 342/11 350/2 **spoken [2]** 2/7 168/19 **sponsored** [1] 342/18 **sports [1]** 184/19 **spot [4]** 25/21 154/12 273/8 310/8 **square [1]** 192/2 **Squillion [1]** 297/21 **St [1]** 174/3 **Stacey [1]** 340/11 staff [2] 87/6 348/4 **staffing [1]** 136/1 staffs [1] 26/23 stage [1] 158/8 stamp [3] 105/25 106/1 115/3 **stamped [1]** 326/17 **stance [1]** 77/5 stand [9] 4/17 4/20 4/21 5/2 157/4 201/8 231/1 233/22 352/6

S standard [10] 19/5 40/11 54/4 63/2 274/18 308/9 310/19 311/17 341/20 342/1 standards [5] 50/4 211/22 212/3 212/9 278/8 standers [1] 62/12 **standing [5]** 89/10 199/6 236/21 260/18 294/16 standpoint [2] 135/25 140/19 stands [2] 149/16 325/6 staple [2] 180/8 194/4 start [37] 4/1 9/23 27/12 38/24 48/19 68/8 88/14 101/4 126/1 158/1 159/24 159/25 173/5 173/24 182/24 194/20 196/10 216/3 227/13 236/13 242/22 243/23 275/22 284/13 286/12 287/21 289/19 298/17 305/11 311/4 313/1 316/1 317/20 318/23 318/24 319/20 343/21 started [18] 23/17 34/10 49/7 90/3 98/11 101/6 119/22 131/18 144/10 148/20 173/9 205/18 205/21 212/8 236/24 243/3 300/2 339/24 starting [5] 134/1 144/20 175/24 209/1 268/11 starts [2] 147/6 275/22 state [136] 1/2 1/8 5/5 12/25 15/24 16/1 16/25 17/10 20/21 20/22 21/16 21/20 21/25 22/1 24/22 24/25 27/7 31/13 33/7 41/13 50/24 51/4 51/22 52/13 60/24 66/4 67/10 74/15 76/4 76/16 77/24 83/14 85/1 85/10 85/25 87/11 100/16 103/8 103/12 103/15 103/25 107/21 110/19 116/8 116/16 116/19 116/21 117/6 117/8 117/9 118/14 123/22 124/8 125/11 126/11 127/19 127/21 127/22 128/1 129/1 129/3 129/18 129/20 130/25 133/6 133/23 135/10

135/22 140/3 142/1 143/3 145/24 165/13 168/14 194/23 201/3 202/18 202/19 205/8 206/2 209/14 209/23 211/1 211/12 212/7 214/6 217/19 226/1 228/9 234/13 240/21 242/17 243/10 245/8 248/17 253/1 253/12 254/11 255/7 263/9 264/11 266/4 266/8 271/17 273/13 273/15 273/17 275/11 277/8 277/11 282/6 295/11 297/11 301/2 312/8 317/17 318/15 319/7 322/17 327/16 327/19 329/16 329/18 337/1 337/5 340/2 341/14 342/2 342/18 344/20 344/24 345/20 345/25 347/1 350/5 353/2 state's [16] 30/11 110/24 121/20 143/2 143/6 143/16 145/7 163/22 206/3 217/7 217/10 343/17 345/6 345/15 350/6 350/10 **state-level [1]** 16/1 state-sponsored [1] 342/18 state-wide [1] 77/24 **stated [2]** 59/4 128/10 **statement [4]** 105/20 153/12 155/24 300/25 states [34] 42/18 64/21 69/10 86/16 90/15 100/8 104/2 104/3 146/10 154/19 206/12 207/6 207/17 208/21 235/21 235/25 262/1 262/2 262/13 263/19 265/16 265/20 265/22 266/3 266/18 266/18 266/19 266/20 267/8 269/25 283/12 294/8 297/6 312/19 states' [1] 79/8 statewide [20] 69/12 69/13 123/13 203/5 203/6 209/3 235/22 235/23 235/24 236/4 249/4 249/18 261/18 266/1 295/9 297/6 298/16 303/6 303/9 346/4 static [1] 55/21 station [5] 92/17 100/22 219/17 220/10 307/14 stations [6] 15/12

15/13 16/2 16/12 166/19 292/2 statistical [2] 19/23 119/9 status [1] 132/2 **statute [2]** 77/14 77/23 **statutory** [1] 77/14 stay [2] 105/15 151/11 steady [1] 78/16 steak [1] 185/21 steal [1] 46/25 step [9] 77/17 78/3 78/3 78/16 246/25 284/17 286/24 290/22 309/6 **step-by-step [1]** 78/3 steps [7] 56/21 78/16 174/5 174/6 204/3 243/19 290/20 stick [2] 138/9 277/22 sticker [2] 333/16 333/19 sticking [1] 135/19 sticks [1] 309/23 stigma [1] 95/13 still [25] 37/2 42/23 44/25 61/16 62/3 62/10 122/22 130/14 132/16 160/18 162/20 168/13 231/25 232/1 245/21 246/4 246/5 246/10 284/11 288/19 289/9 314/15 323/21 335/25 stock [1] 172/21 stockholders [1] 67/2 **stop [1]** 339/11 store [3] 82/15 214/11 321/9 **stored [3]** 274/13 299/23 309/21 stories [2] 61/11 69/9 straight [4] 10/14 240/23 244/6 318/2 straighten [1] 31/5 **strapped** [1] 16/8 strategist [1] 50/2 strategy [3] 295/15 296/13 297/18 streamlining [1] 217/2 strength [2] 275/16 275/19 strengthen [1] 57/1 stressing [1] 335/14 stretch [1] 22/9 Strickland [1] 21/8 strictly [1] 272/22 strikes [1] 20/17 **strong** [1] 335/8 strongly [6] 15/24 51/5 53/8 55/20 107/19 108/5

structure [1] 48/3 stuck [4] 70/25 115/15 132/23 312/16 student [2] 49/1 341/11 students [1] 48/25 studies [2] 262/16 262/25 **study [8]** 73/10 200/16 200/21 201/12 201/22 263/3 331/11 343/15 stuff [3] 212/19 305/9 319/2 style [15] 169/17 182/10 193/11 243/6 272/3 279/19 285/4 285/10 286/25 292/1 292/8 293/16 293/23 316/19 347/19 styles [8] 148/19 214/11 214/17 218/13 287/2 287/5 299/5 299/7 styling [1] 298/25 subject [2] 6/16 214/19 **subjected** [1] 330/4 submit [4] 123/17 123/20 124/1 171/16 submits [1] 124/14 **submitted [2]** 149/22 171/14 subsequent [1] 121/10 subsets [1] 303/3 substantial [1] 51/1 **substitutes** [1] 329/25 **successful [3]** 75/21 101/9 207/1 successfully [1] 64/10 such [15] 3/8 14/1 14/8 20/19 53/17 63/11 74/11 91/19 121/17 134/12 135/2 136/4 201/1 312/9 345/19 suck [1] 322/11 **sudden [1]** 319/1 suggest [4] 39/13 104/25 111/25 285/6 **suitcase [2]** 269/12 269/13 suite [2] 298/4 303/15 **sum [1]** 16/9 **summary [2]** 110/19 263/6 **summer [2]** 123/24 172/11 super [1] 282/22 superintendent [2] 110/14 119/23 superintendent's [1] 143/17 superintendents [2] 4/24 121/22

superior [2] 143/19 267/20 supervisor [3] 141/24 167/12 315/7 **supplies [2]** 188/9 201/19 supply [2] 214/5 261/22 **support [26]** 19/3 19/19 19/22 19/24 20/19 51/16 65/9 65/13 65/14 65/15 80/10 83/20 97/23 158/15 195/17 207/12 207/15 211/7 226/12 227/25 266/10 271/19 295/11 295/18 296/3 308/7 supported [7] 18/21 19/15 206/16 206/17 206/20 206/22 210/10 **supporting [2]** 207/10 207/17 supports [3] 19/17 20/20 30/5 **suppose [4]** 58/11 58/15 138/13 250/25 supposed [4] 25/12 47/4 79/24 340/14 sure [100] 3/21 8/10 9/25 10/24 12/24 22/13 24/10 25/11 26/23 28/6 29/14 32/8 35/4 38/12 42/25 43/16 46/13 47/16 47/18 61/17 63/17 71/6 71/8 73/13 74/12 74/23 75/25 80/8 81/9 83/4 86/6 90/6 92/19 92/20 96/15 99/22 102/7 103/15 104/15 104/21 105/21 106/21 107/6 107/12 108/20 110/16 111/3 113/16 119/3 130/12 136/12 136/17 136/18 138/21 140/12 159/1 160/2 160/6 160/20 162/6 165/12 165/18 169/16 170/17 172/19 177/16 180/23 185/12 188/16 189/23 195/14 199/6 199/8 203/12 205/25 205/25 225/20 230/18 249/25 257/11 260/8 271/5 276/5 279/17 284/9 286/19 286/21 287/14 288/3 292/3 311/5 324/16 328/8 328/17 334/13 339/8 343/7 347/8 347/10 348/4 surfaced [1] 91/23 **surprise** [1] 56/14

S surprised [2] 24/14 44/20 surrogate [1] 102/14 survey [3] 11/12 265/10 265/11 surveyed [1] 32/5 Susan [8] 330/15 330/16 330/17 330/18 330/19 330/24 331/2 332/10 suspect [1] 205/9 suspension [1] 196/23 Swainsboro [1] 235/1 swap [1] 316/7 sweating [1] 335/1 sweep [1] 298/4 swings [1] 270/23 swipes [1] 187/16 switch [5] 9/22 15/11 93/23 152/14 308/7 switches [1] 93/23 switching [1] 134/17 sync [2] 197/19 197/22 system [349] 5/22 11/6 13/13 13/15 13/17 13/25 14/6 14/19 14/25 15/11 15/18 16/10 16/11 19/9 19/14 19/15 19/17 19/20 19/24 20/6 20/11 20/13 20/15 20/20 22/21 24/7 25/5 25/5 25/7 25/9 25/20 26/7 26/13 26/17 26/23 27/1 27/2 27/4 28/5 29/1 29/3 29/4 29/15 29/19 29/21 30/2 30/2 30/4 30/6 30/17 30/20 31/9 31/17 33/14 35/18 36/5 36/13 37/11 37/13 38/9 39/7 42/17 42/21 42/24 43/10 43/10 43/11 43/15 44/3 44/12 44/13 44/24 45/5 45/8 45/16 46/4 48/10 49/3 49/7 49/16 52/2 57/3 61/5 61/13 61/22 62/4 64/7 64/9 69/4 69/21 70/14 70/16 70/19 71/14 71/15 71/19 71/19 72/4 72/19 73/3 73/10 73/19 73/23 74/16 75/7 77/9 78/1 78/2 78/5 78/10 79/10 80/7 80/10 80/18 81/9 82/9 83/6 83/18 93/1 96/3 96/23 96/23 98/8 98/10 99/8 100/3 100/7

100/8 100/9 100/24

101/1 101/4 102/24

107/6 107/11 107/15

107/17 107/17 109/18 110/7 112/4 112/6 113/3 116/10 116/13 116/18 124/2 126/10 126/13 128/19 130/24 131/2 131/7 141/3 141/4 141/5 141/7 141/14 141/22 141/25 142/2 142/2 142/20 143/6 143/13 145/16 145/18 146/3 146/4 146/12 146/12 146/13 146/14 147/1 147/4 147/10 147/16 147/22 148/1 148/3 148/7 148/8 148/9 149/9 149/14 149/19 149/22 150/10 151/10 151/12 151/19 151/23 152/17 152/22 153/4 154/18 155/6 157/9 158/3 158/17 158/18 158/19 159/4 159/5 159/7 159/12 159/15 159/16 159/19 160/8 160/11 160/15 161/24 162/2 162/3 162/5 162/11 164/19 165/2 165/12 166/23 167/21 169/9 169/10 169/19 170/23 171/9 172/7 172/8 173/10 173/19 177/11 184/6 184/9 184/10 184/12 185/16 185/21 185/24 187/20 192/1 194/2 194/24 199/21 202/19 202/20 202/25 204/9 205/8 208/25 210/15 210/16 210/18 210/18 210/21 211/13 211/18 211/21 212/5 212/8 214/2 216/14 216/20 217/13 217/20 219/7 221/9 223/11 225/5 231/6 231/7 233/15 234/12 236/6 236/7 236/9 236/15 236/23 237/6 238/12 238/23 239/1 239/10 240/6 240/10 240/23 240/24 241/8 241/17 242/6 247/15 247/17 247/24 248/18 249/10 250/1 256/22 260/24 261/4 261/15 262/19 264/12 270/13 270/14 271/11 275/21 275/22 276/8 276/18 276/25 277/1 277/18 282/11 282/25 283/5 289/16 296/2 298/9 300/10 302/10 303/1 303/6

304/3 304/17 305/1 310/9 312/9 312/10 314/16 315/14 326/12 327/20 327/25 328/1 329/2 330/5 331/7 331/9 331/16 333/22 334/14 334/14 335/19 339/18 340/5 347/7 347/17 347/21 348/17 system's [1] 153/19 systems [74] 2/20 6/21 13/3 14/18 18/13 30/19 37/8 42/11 43/13 48/13 53/23 56/11 56/25 58/23 58/25 59/8 59/16 59/24 63/13 63/16 64/22 67/17 67/20 79/6 79/8 83/11 91/19 92/16 92/18 92/19 92/20 92/23 94/16 102/8 102/12 102/25 103/2 104/1 108/15 108/23 109/4 112/11 113/1 127/19 135/8 138/13 139/2 148/17 158/16 170/3 212/22 216/13 226/18 233/20 233/22 234/1 234/10 235/13 235/16 235/24 238/15 247/11 252/2 256/22 257/5 276/10 280/21 295/4 296/6 296/14 297/21 301/19 333/21 350/23 systemwide [1] 45/4

T-e-n-e-x [1] 180/16 table [16] 8/5 139/9 157/15 159/24 162/15 164/16 168/19 181/4 181/8 189/16 231/22 284/15 298/3 299/14 313/1 314/7 tables [1] 62/1 tablet [15] 174/16 174/17 174/20 175/2 175/5 175/6 175/9 181/2 183/17 188/4 200/15 204/8 227/18 229/3 273/8 tablet's [1] 311/22 tablets [7] 269/12 300/6 308/15 311/10 312/1 312/1 312/6 tabulate [12] 69/25 142/24 147/15 214/18 228/3 229/2 231/7 232/11 233/7 242/12 259/4 335/4

tabulated [7] 90/24

141/17 168/23 170/24

225/10 311/2 335/18 tabulates [2] 142/25 228/20 tabulating [6] 214/25 215/2 231/5 256/7 298/7 299/2 tabulation [19] 56/11 59/21 75/12 75/14 143/20 148/1 150/20 151/20 152/4 157/9 157/10 159/16 160/14 162/10 166/13 241/4 257/9 259/7 309/24 tabulation-and-results **[1]** 151/20 tabulations [1] 143/15 tabulator [11] 90/24 147/23 147/25 149/3 149/23 150/13 159/1 163/1 167/16 171/13 291/2 tabulators [3] 154/20 297/13 299/3 **TAC [1]** 145/17 tactile [1] 306/18 tad [1] 144/20 tag [2] 46/15 270/18 **Tai [1]** 87/25 take [68] 8/23 10/5 11/16 11/19 33/14 43/11 52/19 52/24 65/11 77/5 78/16 80/24 83/23 83/24 83/25 103/12 103/14 109/17 118/17 119/18 145/2 151/21 151/22 156/3 157/16 163/6 177/13 179/9 192/3 197/2 198/23 198/23 200/20 202/11 205/7 212/20 219/16 229/2 231/15 232/9 232/25 238/3 245/17 246/15 246/17 252/7 256/2 257/1 257/2 257/24 258/21 264/13 270/7 272/5 274/22 278/2 278/6 289/22 290/8 292/19 303/11 309/5 309/23 314/13 333/17 336/16 342/16 347/14 takeaway [1] 81/13 taken [12] 10/13 91/2 143/9 180/9 186/23 190/15 190/17 212/18 268/1 274/23 345/6 353/5 takes [13] 70/1 104/15 108/20 174/21 190/6 236/25 237/11 238/2

257/2 262/21 262/22

263/13 336/16

taking [14] 10/1 10/9 43/21 54/13 70/9 70/10 76/20 159/24 214/21 256/8 260/18 272/9 302/15 344/18 talk [61] 10/3 10/7 24/5 28/3 33/4 33/9 58/5 68/10 89/19 89/24 91/25 92/24 98/17 98/21 100/7 116/15 116/23 132/2 138/25 140/20 142/3 142/6 142/6 142/11 146/15 150/1 160/4 164/24 186/24 192/13 197/25 209/21 211/16 215/17 219/4 221/18 227/12 235/5 235/15 240/14 241/6 257/11 257/15 264/14 264/16 264/17 266/2 266/15 267/21 268/24 271/16 272/18 273/2 273/23 276/16 278/11 307/6 329/8 334/2 341/21 342/3 talked [16] 35/24 44/11 93/3 97/17 97/25 100/2 100/6 100/12 131/17 134/21 136/14 203/11 237/6 242/8 270/10 273/10 talking [45] 6/15 23/17 23/18 23/23 26/15 27/12 28/23 28/24 29/23 30/1 30/7 37/22 68/24 83/11 88/16 132/3 142/11 147/1 148/20 172/6 180/11 192/14 198/5 198/8 223/14 228/6 236/6 236/13 240/20 260/4 262/19 267/24 268/12 270/24 271/21 280/22 282/10 282/10 282/12 289/19 317/20 321/17 335/15 342/11 342/17 talking usually [1] 262/19 talks [2] 117/5 267/8 tallying [2] 300/23 309/24

Tampa [1] 172/4 tamper [3] 274/8 274/15 278/9 tampered [2] 202/8 276/15 tampering [1] 127/18 tangent [1] 201/24 tape [9] 132/15 214/22 214/25 215/7 231/20 236/20 239/9 258/12 259/22 (45) surprised - tape

Т tapes [7] 258/3 258/3 258/14 259/6 259/16 260/1 316/6 taps [1] 187/16 target [2] 61/21 62/8 targeted [1] 337/15 targeting [1] 80/6 task [2] 68/9 135/16 tax [3] 96/5 318/24 329/20 taxpayers [3] 121/8 323/10 325/24 teach [2] 22/12 48/24 teacher [1] 113/13 team [8] 79/17 87/13 146/25 176/10 234/14 262/5 295/13 296/23 teammate [1] 193/14 tech [4] 6/3 48/21 48/24 226/19 technical [11] 65/15 86/15 93/18 128/4 139/24 207/19 223/11 233/14 305/16 307/3 325/13 technically [1] 141/8 technicians [3] 214/6 266/13 273/14 technologies [5] 69/2 70/8 70/9 213/21 301/13 technology [49] 20/12 38/4 38/14 38/16 44/1 50/5 57/18 66/7 68/9 68/10 68/12 68/15 68/22 68/23 68/25 69/6 69/16 69/21 70/18 70/25 71/2 86/18 95/1 101/16 102/4 106/18 108/23 109/2 112/20 117/16 118/9 126/20 139/19 140/19 140/20 140/25 146/4 147/19 175/9 187/19 212/24 215/8 227/8 227/16 228/18 252/11 261/4 268/15 295/7 telecommunications **[1]** 97/12 tell [52] 12/22 27/24 28/8 31/1 36/4 39/18 39/19 48/3 52/22 72/2 73/14 73/20 75/17 88/11 98/13 100/22 116/14 127/4 127/9 158/18 164/18 164/23 167/22 172/14 198/14

203/14 206/6 258/19

271/17 275/3 276/14

283/18 283/18 316/13

317/12 317/17 318/3 320/5 320/18 324/14 327/5 327/6 328/18 330/20 332/17 334/18 334/19 338/17 341/5 344/11 347/1 349/20 tells [3] 222/20 224/22 336/7 template [1] 298/18 templates [1] 138/14 ten [14] 71/1 151/15 165/23 166/7 186/9 268/6 268/9 268/12 270/19 270/25 283/15 283/17 284/7 337/15 tend [2] 131/6 138/9 tendency [1] 183/8 tender [1] 333/16 tends [1] 55/5 Tenex [4] 180/16 285/1 294/6 307/10 **Tennessee [1]** 65/3 tension [5] 71/11 71/25 72/3 72/23 73/4 tenure [1] 17/4 term [6] 15/17 65/4 82/4 189/9 223/5 276/3 terminal [1] 279/12 terms [11] 34/22 69/23 99/15 100/10 110/20 124/20 126/6 140/5 164/19 223/11 250/17 terrible [1] 45/20 terribly [1] 16/7 terrific [1] 58/19 terrified [1] 59/22 terrifying [1] 59/13 Terry [5] 327/3 327/4 327/5 327/5 327/9 test [3] 169/19 257/7 257/10 tested [1] 240/7 testified [1] 131/16 testimony [2] 58/19 346/1 testing [5] 172/20 256/24 257/4 297/15 303/25 tests [2] 84/1 321/12 Texas [8] 69/13 264/21 265/23 265/24 265/25 266/22 266/24 348/12 text [16] 184/22 184/24 203/25 206/15 222/6 222/7 224/12 224/15 225/7 231/16 255/19 302/17 307/24 309/8 313/20 313/22 than [50] 13/21 15/22 18/8 20/6 20/9 36/9 39/20 50/23 53/10 61/9 74/25 81/14 82/20

108/8 109/25 120/8 130/1 131/19 169/21 176/1 194/10 195/11 195/12 197/18 199/10 199/12 207/5 208/14 212/21 226/2 228/11 231/2 240/9 245/8 254/13 256/25 261/20 275/7 280/12 282/20 290/6 296/24 318/18 321/10 327/21 335/12 342/20 thank [166] 3/7 3/15 3/23 4/6 4/8 4/14 4/18 5/2 5/11 5/15 5/23 7/4 7/8 7/23 7/25 9/17 12/25 16/18 17/21 17/21 21/2 21/4 22/14 22/15 22/17 22/19 27/10 43/2 43/4 43/5 44/7 44/9 46/9 47/23 49/19 57/9 57/10 64/11 64/23 65/20 66/2 66/4 67/11 68/2 68/4 71/4 74/1 75/1 78/18 78/21 84/15 88/8 111/13 111/14 115/24 115/25 119/12 119/19 120/25 122/13 122/18 122/18 138/6 144/11 144/12 145/3 145/6 145/12 162/8 164/17 170/6 171/18 171/20 172/24 173/1 173/2 173/3 173/15 201/14 204/11 204/21 205/13 205/14 206/2 208/22 224/5 230/13 230/16 233/11 233/18 234/8 235/10 235/11 247/3 251/8 252/16 252/22 254/5 254/6 260/7 262/8 262/11 263/21 263/22 264/7 287/14 287/17 289/15 294/9 294/12 294/13 314/19 316/8 316/12 316/25 317/1 317/19 319/11 320/2 320/3 323/15 323/17 324/16 326/25 327/1 327/8 327/12 327/12 328/10 328/12 328/21 330/12 330/14 331/3 332/9 332/10 332/21 332/23 334/15 334/16 335/20 335/21 336/9 338/12 338/13 338/19 338/23 338/23 340/24 340/25 341/8 341/10 341/15 343/7 343/10 343/23 344/9 344/16

95/15 101/16 104/21

344/17 346/21 346/22 349/6 349/19 351/21 352/3 352/6 thankful [1] 84/21 **thanks [5]** 4/10 240/16 283/10 296/7 352/4 that [1635] that mobile [1] 102/14 that Nancy [1] 116/4 that'll [1] 72/18 that's [199] 8/6 9/8 10/5 11/13 13/16 14/6 14/20 27/22 29/1 30/20 31/11 33/7 35/12 37/14 41/7 41/19 42/18 42/20 43/20 45/8 45/20 54/19 59/10 60/11 60/15 61/9 62/19 63/10 64/3 64/4 66/8 66/11 66/15 66/20 67/4 68/20 70/21 72/22 73/24 78/5 78/9 79/1 80/5 80/11 81/12 81/16 83/8 84/4 84/11 84/16 89/14 91/11 91/12 92/23 93/8 96/18 99/25 104/7 108/7 109/19 110/4 110/6 115/5 115/13 117/14 119/15 127/2 127/17 129/16 132/8 133/22 134/15 136/7 137/25 138/20 138/24 139/8 139/22 141/7 147/21 148/13 149/8 150/18 152/5 153/3 153/10 154/1 155/19 155/20 157/14 162/6 164/22 166/23 168/12 168/17 169/5 169/7 174/8 177/24 178/24 180/25 181/8 183/7 185/19 185/20 187/9 188/5 191/24 192/5 192/16 193/8 194/19 195/18 196/22 197/23 198/6 199/5 201/8 208/9 212/17 217/2 219/2 225/20 227/11 227/20 228/22 230/24 233/16 236/10 239/25 241/10 241/20 243/13 248/5 248/11 250/17 252/3 254/22 254/23 255/1 256/9 259/6 259/7 259/16 260/18 260/24 265/16 267/9 267/10 268/4 271/2 272/1 274/12 274/23 275/6 276/15 277/10 279/16 279/25 281/4 281/6 281/7 283/3 287/7 291/6 296/15 297/22 300/1

300/17 301/8 301/10 301/11 302/5 302/13 303/7 304/20 305/9 308/3 310/6 313/20 314/17 315/4 316/13 320/12 321/14 321/15 322/5 322/22 323/14 324/7 331/8 333/16 333/23 333/25 336/15 337/19 340/13 351/16 351/16 the cost [1] 128/24 their [136] 4/8 6/23 8/17 11/18 14/2 19/4 24/11 24/24 30/9 42/1 43/24 52/20 61/6 61/24 62/10 62/25 67/2 67/7 85/7 86/24 88/13 89/7 89/12 89/22 90/17 90/17 92/9 94/5 94/11 97/14 100/20 106/2 111/1 122/8 123/17 123/18 123/20 124/23 126/15 127/1 129/7 130/14 130/16 131/5 147/2 148/23 149/6 152/20 159/20 162/23 165/9 165/10 167/4 170/12 170/24 171/2 171/10 181/15 181/16 183/9 183/11 183/11 184/5 186/3 186/4 186/5 187/18 187/18 192/15 199/7 201/6 201/21 207/8 207/10 207/15 209/6 209/18 209/19 209/20 210/7 211/10 212/9 212/10 214/16 215/6 215/7 218/25 219/6 219/17 220/15 232/7 232/8 238/20 239/12 241/25 242/2 243/19 255/12 260/15 260/19 261/3 263/7 264/3 265/17 266/5 266/6 266/13 266/14 267/25 268/1 272/2 272/3 277/15 279/9 285/3 285/10 285/20 286/13 286/25 290/10 293/5 293/23 294/20 294/20 301/9 307/12 307/17 307/23 310/22 313/18 314/9 330/11 339/10 345/10 345/11 352/5 them [101] 28/8 31/20 31/22 31/23 36/7 40/5 51/2 54/17 56/13 62/11 63/3 74/15 85/24 86/24 88/9 89/1 96/12 100/5 103/19 103/20 106/5

Т them... [80] 106/10 109/5 113/5 120/14 120/15 122/9 123/24 127/1 127/24 128/7 129/9 130/6 132/1 132/10 132/11 132/12 132/14 132/14 132/15 133/15 133/16 135/6 136/5 136/18 137/12 142/24 142/25 148/21 148/22 152/2 152/21 153/1 153/19 154/14 154/15 161/1 166/10 166/12 170/13 179/16 181/17 189/2 191/3 198/14 200/10 201/7 216/9 223/14 226/5 229/7 229/12 229/21 229/25 233/21 234/15 236/23 247/16 248/2 248/3 249/11 249/12 257/2 266/10 277/24 278/1 289/23 290/9 291/6 294/7 309/11 309/23 312/3 316/6 316/22 319/3 319/21 321/20 333/1 345/18 350/12 **themselves [8]** 38/19 64/14 117/20 163/4 312/5 312/6 326/19 326/23 8/7 9/22 11/24 14/4 108/9 110/2 111/24 117/7 117/19 128/6

then [136] 4/23 6/10 24/23 25/13 26/9 29/2 29/8 31/4 33/9 34/11 35/2 35/6 35/20 37/5 39/9 42/13 48/5 54/22 57/12 62/25 65/22 69/8 79/13 80/7 80/18 84/13 87/18 89/17 90/10 91/5 93/22 98/17 99/1 100/6 111/25 112/24 115/22 133/1 137/7 139/4 139/13 147/24 147/25 148/3 151/18 151/22 151/25 154/1 155/23 156/2 156/11 158/24 159/20 159/21 162/24 169/23 171/15 177/4 178/8 180/24 183/6 188/10 193/10 197/20 200/23 201/18 206/8 209/19 211/24 219/11 223/8 226/23 228/25 230/17 232/9 232/12 235/6 237/23 239/4 239/17 242/12 242/20

246/24 250/19 251/1 256/15 258/11 258/12 258/15 259/24 261/7 261/9 261/10 261/12 263/15 272/6 286/6 287/1 288/24 289/13 291/13 296/20 297/13 297/25 298/19 300/9 301/4 302/11 302/24 305/1 306/18 306/22 307/16 308/24 310/7 310/22 312/5 315/8 316/7 316/19 317/20 326/10 329/7 332/7 335/24 336/1 there [251] 8/3 8/13

8/19 9/3 9/12 9/13 9/14

9/22 10/22 13/17 14/3 14/7 15/14 18/7 22/14 25/17 26/4 26/6 26/10 27/4 27/23 28/7 28/17 29/6 32/23 33/21 33/25 34/2 35/16 37/1 37/25 38/3 38/15 39/19 39/20 40/11 42/9 43/14 43/14 44/16 45/9 47/6 47/14 51/11 51/18 54/6 54/7 54/9 54/9 60/18 62/7 63/12 68/14 75/11 75/13 76/18 79/1 80/23 81/2 81/12 85/2 85/13 86/5 88/18 88/19 88/22 88/22 89/4 91/19 92/25 93/10 94/6 95/11 95/24 96/4 97/9 98/23 99/7 99/8 99/22 100/9 101/1 101/5 101/20 103/7 103/15 105/2 105/20 107/10 108/15 108/18 108/19 108/24 109/3 109/5 109/10 110/10 110/19 111/4 113/5 113/19 115/12 120/1 120/11 120/14 120/16 133/8 133/14 134/23 134/23 135/9 135/11 137/14 140/2 140/22 141/1 142/8 142/14 142/15 143/6 143/12 143/14 143/19 144/25 147/13 148/2 149/23 150/6 151/4 153/25 154/1 154/5 155/15 156/3 156/3 156/16 157/3 158/5 160/5 160/11 160/15 161/6 164/5 164/9 165/3 165/4 165/15 166/3 166/5 166/5 166/14 166/14 166/24 167/6 167/14 167/16 168/1 168/7 169/2 181/25

182/5 183/1 184/12 184/22 186/20 187/14 187/25 188/13 191/5 191/8 191/15 193/21 193/25 199/7 201/8 204/16 207/21 208/2 211/21 214/8 222/7 222/12 225/5 226/22 226/24 227/2 229/9 234/21 241/19 243/25 244/15 245/22 246/7 246/8 247/2 248/20 251/10 251/13 252/17 255/14 259/7 259/19 260/18 260/21 263/9 267/6 267/12 267/14 268/20 270/1 272/4 272/20 273/7 276/4 276/16 282/8 283/20 283/23 285/2 287/23 288/12 288/14 291/16 291/24 292/20 292/21 293/15 297/9 301/19 304/5 305/2 306/3 307/21 313/20 315/4 316/16 316/17 318/8 318/9 319/2 320/10 321/12 322/13 324/9 327/20 328/3 339/1 339/21 340/9 344/7 349/23

there's [105] 5/14 10/24 26/3 27/18 31/24 32/6 35/15 36/8 37/4 41/4 42/13 46/21 51/19 60/11 67/23 69/7 71/15 71/24 73/14 76/24 88/23 91/1 101/14 113/1 113/5 120/18 122/7 128/5 133/21 134/14 139/14 153/25 160/22 161/3 162/10 167/6 168/3 175/19 178/3 181/2 182/5 183/13 184/22 184/23 190/1 190/2 192/25 204/1 208/15 212/6 214/8 216/23 218/19 218/24 230/5 232/16 233/9 239/23 239/24 247/13 247/15 247/17 247/20 248/3 248/6 248/8 248/11 259/6 259/16 259/17 265/1 270/7 271/24 272/23 273/7 273/9 276/19 277/4 280/24 281/2 281/21 284/15 292/22 293/3 306/20 309/2 315/1 316/15 316/19 319/21 321/23 323/13 329/1 329/16 331/7

335/2 337/9 337/11 341/21 343/2 343/3 343/13 343/14 348/8 349/23

therefore [3] 76/11 179/12 326/1 thereof [2] 299/7 300/14

thermal [5] 228/22 247/18 247/20 248/10 272/11

these [77] 9/13 9/15 9/20 10/2 16/14 34/13 50/14 51/18 54/1 55/14 58/21 81/10 81/16 90/20 107/20 109/4 113/17 131/5 132/22 153/14 153/22 154/12 154/21 154/22 159/21 165/15 166/20 188/16 199/4 199/4 201/22 202/8 205/16 209/11 210/2 212/9 213/2 213/8 214/10 216/8 216/13 217/1 217/9 220/4 220/8 220/13 220/17 222/1 222/25 226/18 239/13 247/11 247/11 247/25 249/9 257/5 261/18 266/3 266/18 269/23 275/13 276/10 279/2 284/5 284/11 308/15 311/10 312/3 312/9 331/23 335/1 335/7 341/25 343/2 343/14 345/22 350/11

they [326] 7/17 9/20 11/8 14/6 22/12 24/12 25/13 25/14 25/15 27/20 29/15 31/1 31/12 31/21 31/24 34/1 34/3 34/17 37/5 38/18 41/9 41/24 46/16 51/11 53/16 56/18 59/10 59/22 61/14 61/15 61/16 61/18 62/4 63/9 65/17 66/18 67/1 67/15 67/19 69/24 69/25 71/23 74/19 75/9 79/22 81/25 86/1 89/2 89/6 89/17 89/22 89/22 89/25 92/5 92/8 92/8 92/9 93/14 94/5 94/17 94/20 95/17 96/8 96/10 96/12 96/12 96/13 96/15 96/19 98/10 100/19 101/6 102/10 102/11 102/11 103/8 103/13 104/9 104/10 105/24 106/3 106/3 106/4 106/4 106/5

106/9 107/20 110/18 111/7 111/23 111/24 112/5 113/21 114/7 114/20 117/4 117/12 119/4 122/9 123/4 126/19 127/1 128/6 128/20 129/1 129/4 129/5 129/14 130/5 130/9 132/16 132/21 133/1 135/6 135/7 136/6 136/12 137/7 143/3 147/14 148/22 148/23 155/12 155/13 156/6 156/14 159/12 159/15 159/16 159/18 159/21 159/22 162/23 162/24 162/24 163/1 163/2 165/2 165/8 165/10 165/10 165/11 165/13 165/25 166/2 166/10 166/11 166/13 166/14 168/22 170/13 171/11 171/16 171/16 174/4 174/8 175/6 175/16 178/10 178/11 178/12 178/13 180/4 183/10 185/23 185/23 186/4 188/9 192/5 192/15 197/18 197/24 197/25 198/5 198/8 200/10 200/17 201/5 201/7 201/8 203/14 205/15 209/18 209/19 211/12 211/25 212/1 213/24 215/4 215/4 215/5 215/6 219/13 219/14 219/16 220/9 220/15 221/5 221/7 221/8 223/22 223/22 228/15 228/20 229/1 229/10 231/24 232/6 232/20 232/21 232/22 232/24 233/4 236/22 237/17 237/19 237/24 238/1 238/1 238/18 241/23 241/25 249/11 250/23 251/17 252/6 252/7 256/7 258/3 259/21 259/24 260/14 260/15 261/3 261/8 261/9 261/10 263/24 265/2 266/10 266/10 266/12 267/20 267/25 271/6 272/5 272/11 272/11 276/12 276/12 276/13 276/22 277/16 279/7 279/19 280/8 280/9 282/2 283/21 284/24 285/3 285/5 285/8 285/11 285/12 285/20 285/22 286/1 286/2 286/6 286/10

Т they... [55] 286/13 289/23 290/4 290/10 290/12 290/20 290/21 290/22 290/25 291/2 291/13 291/16 291/18 292/4 292/7 292/16 292/17 292/22 292/23 293/4 293/21 293/22 297/9 303/9 307/10 307/14 307/16 309/12 309/12 311/24 311/24 312/3 313/18 313/19 314/10 314/13 316/1 316/2 316/4 316/7 321/17 321/24 322/7 329/22 331/6 334/8 335/17 337/22 337/23 339/4 340/10 340/19 343/1 345/17 350/7 **They'd [1]** 191/12 they'll [3] 82/1 209/9 220/23 they're [76] 8/16 19/5 27/22 28/8 31/20 31/23 34/13 34/17 34/18 40/3 45/23 55/22 60/21 61/17 62/7 66/19 69/22 69/22 77/6 79/23 79/23 80/3 80/14 90/18 90/24 101/10 104/17 111/9 113/12 121/16 128/7 134/10 136/12 139/4 156/7 159/11 159/19 162/5 162/5 186/3 186/5 198/1 199/7 202/5 203/13 208/13 213/25 220/11 237/17 242/18 242/19 242/20 251/4 258/10 258/11 258/12 258/14 266/18 268/24 268/25 269/2 276/14 288/2 288/2 293/6 293/7 307/17 307/18 309/12 313/21 321/19 330/10 331/19 337/2 337/24 345/10 thev've [9] 79/21 79/22 171/12 171/13 276/14 291/16 293/5 321/10 326/5 thing [46] 27/16 33/12

37/10 42/3 42/16 46/22 47/7 76/6 77/24 81/21 84/7 92/4 92/8 108/19 114/23 131/12 134/24 162/9 169/1 175/1 189/14 197/7 201/9 217/5 221/16 222/19 224/18 225/18 228/19 251/10 257/7 270/7

271/16 274/5 297/9 305/4 308/20 313/6 321/5 321/11 322/24 323/8 323/12 333/6 333/13 342/3 thing's [1] 333/6 things [68] 10/15 28/13 33/15 35/19 35/19 40/4 54/13 56/10 63/23 65/12 68/23 79/9 80/11 81/16 82/18 83/10 93/23 105/6 106/6 106/7 107/5 107/24 108/2 109/8 109/9 113/15 113/17 117/4 131/5 140/1 140/3 140/23 145/18 146/6 147/13 148/6 148/11 148/15 149/8 151/13 152/24 153/7 154/16 154/19 166/25 167/6 172/17 173/17 174/3 187/2 192/12 211/5 212/25 217/4 237/3 248/9 257/11 276/15 292/14 295/7 303/16 308/11 308/12 308/13 335/2 341/17 348/9 351/8

think [229] 5/6 9/7 9/24 10/8 15/6 15/11 19/7 23/2 23/8 23/10 23/25 24/7 24/17 24/18 25/4 25/20 26/6 26/22 27/6 27/8 27/12 27/13 28/25 29/18 29/22 29/25 31/17 33/12 33/19 34/6 34/16 34/19 35/7 35/14 36/2 38/15 39/3 39/10 39/22 42/10 42/19 44/11 44/13 44/20 45/1 45/5 45/11 46/12 47/11 48/8 48/14 57/3 57/6 57/7 58/21 64/15 65/23 66/12 66/13 66/23 67/4 68/7 68/10 68/13 70/5 70/12 70/17 70/24 71/10 71/12 72/10 73/5 73/5 73/6 73/9 73/18 73/20 73/25 74/1 74/2 74/4 74/20 75/23 76/3 76/24 77/7 77/17 77/20 78/19 79/3 79/9 80/10 82/9 84/16 89/14 94/1 95/12 97/2 100/13 102/6 102/17 102/18 104/7 105/3 106/11 106/17 107/14 109/22 109/22 110/6 110/7 113/19 113/20 113/24 115/2 116/7 116/12 116/13 117/5 117/17

119/24 120/18 121/17 122/2 127/2 127/17 127/25 128/5 128/9 129/2 130/16 130/22 132/11 132/18 134/14 134/23 134/24 135/11 137/15 138/4 138/23 138/24 139/3 139/8 139/19 139/20 140/4 140/9 140/10 141/24 143/22 145/17 149/16 150/15 151/15 152/6 152/8 153/3 153/10 156/25 157/14 158/10 158/12 159/8 162/6 164/11 166/24 167/7 168/13 172/13 178/25 183/7 193/18 195/2 196/4 207/14 208/2 208/14 210/17 212/4 222/5 226/21 226/24 229/5 229/8 229/13 229/19 234/12 247/22 251/10 255/6 264/14 265/1 266/3 266/12 273/12 273/19 273/25 276/17 278/10 278/11 282/23 283/2 283/3 284/8 285/25 286/3 287/9 288/22 292/20 292/24 294/6 305/17 311/9 311/10 312/20 317/8 321/9 322/22 331/25 332/4 332/13 333/13 335/10 341/21 348/1 348/3 348/6 350/18 think the [1] 73/20 thinking [4] 27/7 70/25 76/10 81/19 thinks [1] 151/13 third [4] 48/13 143/18 231/6 307/9 third-party [2] 231/6 307/9 thirty [5] 132/8 257/23 257/24 323/6 323/7 Thirty-million [1] 323/6 this [510] **Thompson [8]** 65/21 66/5 67/14 72/12 76/21 77/25 80/23 117/2 those [161] 3/15 4/14 9/2 11/20 13/18 28/10 30/13 33/15 35/19 37/24 43/21 50/17 50/24 54/10 54/12 54/12 54/16 54/25 55/1 55/24 57/2 57/5 58/6

59/19 62/1 63/2 64/11

67/2 67/3 68/1 70/13

70/24 73/13 74/14

74/18 83/1 85/22 86/1 88/20 89/6 90/23 91/1 91/4 91/10 91/21 93/11 94/11 94/15 94/16 94/22 102/8 103/11 103/18 104/24 106/5 107/5 110/20 111/1 113/9 113/9 113/10 114/2 114/18 120/7 120/8 121/10 121/25 125/10 126/7 130/17 132/12 135/12 136/16 140/23 141/12 142/23 146/6 147/10 147/20 152/2 152/25 156/21 157/2 158/9 160/23 161/1 164/7 165/17 167/5 167/24 168/8 170/3 172/2 175/2 178/12 179/24 182/18 182/18 185/3 185/4 194/1 197/22 198/25 201/23 202/5 204/17 207/13 211/23 212/2 212/25 217/22 217/23 218/22 227/1 231/13 231/18 232/23 241/5 244/13 245/6 246/19 249/4 249/8 251/14 252/19 253/16 256/3 258/6 258/14 258/14 260/13 260/20 264/24 265/21 267/2 267/15 267/18 276/2 276/5 276/7 282/23 283/23 284/5 290/9 290/11 298/10 299/3 299/5 299/6 303/4 304/13 306/12 309/11 309/23 310/2 316/7 322/4 330/19 339/20 339/20 346/1 though [7] 90/23 128/1 137/7 251/17 272/15 318/19 343/1 thought [3] 28/25 46/19 123/3 thoughts [2] 33/16 127/15 thousand [12] 120/9 123/9 131/20 131/21 132/8 135/14 135/15 199/4 256/2 297/3

298/11 319/8

thousands [1] 329/24

58/10 69/7 80/6 81/13

threatened [1] 345/16

threats [12] 51/9 55/2

thracker's [1] 80/12

threat [9] 52/3 56/3

212/4 275/14 304/4

163/8 165/5 165/6 165/16 165/16 166/8 174/22 175/22 175/23 184/8 184/9 190/7 198/2 210/22 221/21 223/20 231/18 241/5 248/20 258/11 259/22 269/13 292/2 315/19 322/14 325/9 326/6 341/16 348/8 three-year [1] 135/5 threshold [5] 41/9 41/22 42/2 301/15 301/25 threw [3] 177/5 182/21 336/25 throat [1] 237/16 **Throop [2]** 332/13 334/21 through [101] 5/8 10/20 10/23 11/19 13/24 14/2 30/14 33/1 37/3 38/1 44/10 48/6 50/4 52/5 56/22 60/8 71/14 92/16 94/10 97/11 114/11 118/11 120/19 122/25 125/24 125/25 138/18 138/19 139/6 143/10 143/11 145/17 145/20 147/25 148/20 148/21 149/21 149/23 152/21 156/17 156/20 156/23 161/7 162/25 163/2 163/4 165/22 167/1 167/16 171/13 172/20 176/6 180/13 184/18 186/22 188/10 190/14 192/23 196/7 197/10 197/20 198/6 198/8 199/21 201/23 202/13 202/21 220/3 222/22 223/21 225/3 233/14 233/17 238/23 241/15 242/1 242/7 242/9 244/7 245/9 246/10 251/12 258/1 258/9 258/16 264/18 267/25 268/23 275/13 277/19 278/17 290/20 296/1 296/19 297/14 302/10 307/12 308/6 310/9 313/19 333/7 throughout [18] 18/15 81/10 83/2 83/6 138/12 18/15 20/21 42/17

212/15 212/19 276/4

three [44] 13/11 31/5

105/15 113/4 115/19

117/3 135/5 143/15

35/11 35/19 40/7 44/13

276/5 276/7 304/16

46/10 48/7 66/10

Т throughout... [14] 59/14 92/13 123/24 124/25 205/8 222/1 239/25 240/5 258/5 265/6 273/15 297/1 303/15 308/23 throw [4] 77/16 78/7 80/24 81/2 throwing [2] 131/1 158/11 thrown [1] 115/21 throws [1] 79/20 thumb [10] 152/20 189/21 190/3 190/3 190/6 190/11 190/12 190/13 239/21 239/22 Thursday [1] 189/7 ticket [2] 179/6 336/24 tie [1] 119/25 ties [2] 272/20 278/13 time [114] 10/24 11/16 11/17 23/22 27/9 28/12 29/9 32/25 33/5 48/17 50/7 50/22 57/13 59/13 64/12 75/5 77/20 78/19 83/3 83/8 89/12 89/17 92/16 108/17 123/16 123/20 125/21 127/16 127/22 128/10 129/5 130/9 133/2 134/18 135/2 135/5 135/9 136/4 136/23 138/9 139/21 141/4 144/22 148/25 155/23 164/25 165/2 169/9 170/1 173/2 173/4 178/20 179/4 185/3 185/14 186/20 187/8 190/14 194/12 194/17 196/11 196/20 198/13 198/24 202/10 208/13 211/5 215/15 215/21 216/10 221/20 230/7 235/7 236/5 240/17 244/23 249/10 249/12 258/7 260/19 261/14 261/15 261/19 261/21 262/3 262/6 262/15 262/21 262/22 263/16 264/13 265/4 268/5 270/4 283/4 290/15 302/21 308/17 310/16 318/11 319/14 322/23 323/3 326/17 326/20 326/25 328/10 336/17 345/5 347/23 348/13 350/17 352/1 352/3 time-stamped [1]

326/17 timeline [1] 265/6 319/15

158/5

toggle [1] 307/24

tolerant [1] 172/9

told [3] 10/6 113/13

timelines [1] 262/5 timely [1] 51/8 times [15] 44/20 51/12 80/23 81/2 82/4 105/22 128/4 183/10 185/7 211/6 223/22 262/20 273/25 292/25 320/14 timing [1] 177/7 tiny [1] 339/22 title [4] 98/20 99/2 99/14 296/2 Titus [2] 335/23 335/25 to our [1] 172/25 today [112] 3/22 4/13 6/17 7/4 7/18 8/2 8/3 8/19 8/24 9/1 9/4 9/8 9/18 10/16 11/11 22/6 22/16 22/19 23/24 46/10 68/10 81/14 108/21 116/1 122/17 135/17 142/2 145/15 145/19 145/20 146/7 152/21 152/24 173/17 174/6 175/14 176/3 203/1 206/5 208/24 211/14 211/18 213/4 213/7 234/11 236/5 236/8 236/11 242/14 243/10 243/21 244/5 244/7 245/8 252/2 252/5 255/8 257/19 257/20 258/23 262/24 263/15 263/22 264/6 264/9 264/13 265/2 266/4 268/4 272/8 274/14 280/22 283/3 286/1 287/13 290/7 294/11 295/12 316/25 319/22 321/3 321/7 322/3 322/23 323/8 323/16 324/22 327/2 328/24 329/8 330/13 331/22 332/11 334/17 335/22 337/4 337/23 340/17 341/1 341/9 341/24 344/8 346/23 347/6 349/8 349/19 350/18 350/22 351/20 351/22 352/1 352/2 today's [2] 7/22 350/20 **Todd [5]** 5/14 120/22 120/22 121/1 134/2 toes [1] 47/17 together [13] 29/4 67/8 70/13 76/17 83/1 116/9 122/5 127/23 142/23 213/1 231/18 319/14

tomorrow [1] 82/1 tomorrow's [1] 83/5 tone [1] 93/23 toner [1] 248/9 too [16] 20/11 22/21 58/6 75/9 101/18 130/17 132/24 138/11 162/10 208/6 214/21 230/20 247/9 310/7 328/2 332/4 took [9] 5/6 74/15 148/22 229/11 268/16 268/19 268/21 305/1 319/17 tool [3] 110/24 112/5 147/6 tools [1] 164/13 top [21] 80/16 84/9 84/10 167/8 173/20 184/15 191/8 191/15 193/1 193/2 221/22 243/5 247/2 266/18 266/20 269/6 281/11 288/8 322/20 334/5 345/3 top-down [3] 80/16 266/18 266/20 topics [1] 125/22 total [7] 69/13 124/11 132/9 135/12 155/25 229/8 291/15 totally [4] 102/5 251/4 293/14 319/23 Totenberg [2] 336/25 346/6 31/5 38/18 65/17 131/4 142/21 183/24 185/4 185/22 185/24 202/16 209/17 245/1 245/12 245/15 259/21 269/18 283/2 touched [1] 35/22 touching [5] 27/21 239/20 244/2 244/24 245/14 touchscreen [22] 33/11 93/15 93/20 118/12 126/19 147/22 161/24 171/10 174/9 174/25 182/11 183/5 187/12 232/2 237/5 237/14 250/9 299/1 299/12 306/19 308/9 308/20 touchscreens [3] 257/21 258/23 258/24 toward [1] 10/23 towards [4] 8/24 55/1 77/8 321/3 tower [1] 304/19

traceable [1] 302/19 track [2] 177/5 185/8 trade [1] 14/23 traditional [2] 108/8 232/17 traditionally [2] 102/3 210/17 trail [20] 209/21 269/20 299/18 299/24 300/7 309/9 309/15 309/20 310/2 310/19 313/14 313/17 313/25 326/8 328/3 328/3 328/9 329/9 329/15 334/2 trails [1] 333/13 train [5] 134/21 266/13 269/1 273/14 273/20 Traina [3] 324/9 324/17 349/9 trained [4] 10/7 10/9 79/22 214/7 trainer [1] 295/23 training [22] 26/5 49/13 49/24 80/9 80/16 82/24 86/15 92/18 104/6 104/12 104/15 104/15 108/1 120/17 121/10 133/10 153/7 174/4 177/23 213/17 226/13 236/22 trainings [1] 20/25 trains [1] 80/3 transcript [3] 2/1 353/6 10/24 36/18 103/14 353/10 transcription [1] 30/9 touch [19] 27/16 30/24 transition [7] 16/4 16/10 123/1 123/5 137/20 151/1 163/25 Transitioning [1] 13/14 translate [2] 97/8 98/18 transmitted [1] 274/19 Transmitting [1] 143/4 transparency [8] 14/15 Tucker [1] 295/20 55/16 72/8 76/5 146/5 152/7 330/6 332/7 transparent [6] 15/1 16/13 19/19 20/14 33/22 343/12 transportation [9] 88/20 88/23 88/24 100/18 100/19 100/21 100/24 111/6 325/14 transportation's [1] 105/13 trap [1] 56/17 treat [3] 79/25 232/17 233/7 treating [1] 141/6 treats [1] 19/24 town [2] 35/5 177/10

268/13 tremendously [1] 69/16 trends [1] 153/8 trepidations [1] 131/6 **Trey [1]** 7/15 Trial [1] 17/16 trickles [1] 79/14 **tried [7]** 75/8 143/13 209/11 263/3 276/25 347/10 347/14 tried-and-true [1] 209/11 tries [2] 197/22 222/15 trouble [2] 105/22 310/5 troubleshoot [1] 25/21 truck [1] 127/7 trucks [1] 128/16 true [11] 42/6 51/11 62/17 63/7 63/15 75/7 90/13 117/14 205/9 209/11 353/6 truly [1] 6/15 **Trump [3]** 73/16 178/11 179/15 trust [6] 212/16 326/7 331/18 335/19 340/14 340/16 trusted [3] 50/3 268/18 333/11 try [19] 10/14 10/22 114/18 120/19 122/12 129/7 136/3 136/5 144/8 144/9 200/11 223/13 271/4 285/16 285/17 319/15 trying [16] 10/5 27/3 60/5 76/2 81/8 83/10 114/11 142/19 200/3 200/6 200/7 213/25 239/6 263/6 339/6 345/9 **Tuesday [1]** 35/6 turn [32] 7/1 8/8 45/19 46/18 60/11 163/14 173/13 173/22 174/14 174/14 175/17 182/10 187/11 199/17 205/23 206/8 208/20 211/11 215/11 234/2 235/3 236/19 240/13 249/22 251/20 259/15 264/5 278/23 294/24 297/25 313/11 315/8 turnaround [1] 134/12 turned [1] 305/12 turning [1] 333/19 turnout [7] 3/8 34/15 tremendous [2] 221/20 43/18 45/19 45/20 61/9

Т	124
	ulti
turnout [1] 247/25 turns [2] 174/8 285/13	76/ 143
twenty [2] 132/20	unb
186/9	unc
twice [5] 47/2 190/9 280/16 323/24 349/12	166
twist [1] 200/4	unc
Twitter [2] 214/20	unc
343/20	und
two [82] 8/23 9/13 10/2	43/
35/9 35/19 36/18 37/9 37/11 39/6 45/25 48/21	124
51/20 59/2 91/23 95/9	182
101/6 114/18 114/20	248
123/5 129/4 131/24	353
135/5 140/23 160/15	und 335
165/14 165/20 167/13	und
169/11 194/7 198/2 203/9 215/25 217/4	56/
219/9 223/8 226/5	und
229/12 232/12 237/12	21/
237/22 237/22 237/24	und
238/3 240/25 244/19	und
253/21 259/1 259/10 259/19 260/2 260/12	57/
260/20 260/22 261/1	und
261/6 261/8 266/18	unc
273/7 277/3 279/2	und
280/12 283/4 298/11	26/
300/4 303/17 305/17 305/18 305/23 306/24	75/
308/7 308/7 315/19	92/
317/16 319/9 325/24	98/
332/24 333/2 337/23	118 158
341/17 348/8 349/23	177
350/2 two-factor [3] 277/3	217
303/17 306/24	233
two-minute [1] 51/20	269
two-page [1] 223/8 type [13] 74/23 89/2	292 339
type [13] 74/23 89/2	unc
96/5 96/23 97/23 102/6 106/20 115/1 115/3	30/
125/12 243/15 252/18	160
262/18	und
typed [1] 2/7 types [8] 87/15 158/14	99/ und
	und
172/15 253/4 298/24 298/24 342/18 342/19	170
typewriting [1] 353/5	und
typical [3] 177/9 231/3	und
275/17	39/ 156
typically [6] 91/15	224
94/12 94/16 94/20 94/22 245/9	289
	und
U	244
UBS [1] 247/15	und 62/
UGA [1] 254/10	163

ultimate [2] 124/15

124/21 mately [7] 45/15 /2 76/13 125/18 3/2 215/6 232/4 peatable [1] 70/4 captured [2] 164/9 6/3 changed [1] 326/22 clear [1] 251/22 common [1] 169/8 der [16] 41/8 41/18 /9 60/23 95/7 120/7 4/17 126/18 158/23 2/13 182/14 223/12 8/22 274/14 342/19 3/5 dercounting [1] derestimate [1] dergraduate [1] derlaying [1] 210/9 derlying [1] 61/18 dermine [2] 55/10 dermining [1] 340/4 derneath [1] 62/12 derscores [1] 55/16 derstand [38] 10/4 /16 36/7 44/2 61/17 /24 81/24 92/18 19 95/8 96/11 97/15 /16 111/1 114/20 8/10 136/18 144/20 8/9 160/3 160/20 7/25 194/22 211/5 7/8 227/10 227/15 3/16 246/12 250/14 9/3 273/11 276/17 2/4 325/5 325/24 9/15 351/4 derstanding [4] /20 74/13 96/19 0/7 derstands [4] 30/1 /20 110/16 286/3 derstated [1] 13/17 derstood [4] 71/8 0/18 196/4 339/9 dertaking [1] 208/17 dervote [11] 39/12 /18 39/22 156/8 6/9 156/19 185/10 4/21 224/22 246/9 9/25 dervoted [3] 63/14 4/20 250/18 dervotes [8] 39/3 16 63/7 156/5 157/5 163/20 171/8 171/8 undervoting [1] 37/17

unequivocably [1] 55/2 unfair [2] 16/7 136/5 unfamiliar [1] 276/3 unfinished [1] 2/5 unfold [1] 180/24 unfortunate [1] 14/7 unfortunately [6] 45/17 84/3 84/12 93/10 264/20 281/7 unified [2] 310/12 315/2 uniform [9] 20/21 20/24 42/17 127/19 213/14 213/16 214/2 214/2 214/4 uniformity [1] 43/12 union [1] 95/5 unique [7] 100/10 101/20 118/10 120/6 157/15 241/11 326/18 Unisyn [4] 2/18 6/20 173/4 173/10 unit [11] 132/17 174/14 175/8 215/5 241/24 243/16 258/4 291/19 314/8 315/3 319/6 **United [8]** 69/10 86/16 206/12 207/17 208/20 265/15 283/11 294/8 units [22] 132/10 132/22 133/1 214/11 214/17 248/23 258/1 258/3 258/6 258/9 258/10 258/12 258/13 259/10 259/10 297/3 312/5 312/16 312/21 312/22 318/15 319/8 universal [5] 107/15 108/15 240/15 241/8 247/9 **University [8]** 12/21 17/12 21/24 21/25 223/3 331/11 331/12 350/5 unknown [1] 2/3 unless [4] 33/13 143/23 171/14 231/8 **unlimited [1]** 77/15 unlocks [1] 243/16 unmarked [1] 157/1 unofficial [2] 188/17 188/19 unprocessed [2] 191/8 191/9 unquote [1] 278/1 unsure [1] 260/14 untested [1] 64/6 until [11] 9/7 15/7 26/6 68/17 79/19 122/1 183/6 184/16 196/23 280/13 342/5

unusual [1] 212/15 unverifiable [2] 350/22 351/2 unverifying [1] 345/7 unvoted [1] 223/20 **UOCAVA [8]** 147/9 176/13 192/13 192/22 193/8 193/12 194/4 300/16 up [180] 4/21 7/18 7/21 8/21 8/22 10/22 11/17 11/23 15/9 22/5 23/2 24/3 25/2 25/14 25/14 26/13 27/19 28/7 31/15 32/9 34/11 34/14 36/1 36/7 38/4 38/21 43/25 44/15 45/17 45/23 46/15 47/15 49/18 51/20 53/17 63/4 74/21 78/23 79/18 81/1 83/10 84/17 94/14 97/10 99/6 urging [1] 350/10 102/24 104/9 104/10 104/11 104/20 115/19 121/9 121/23 125/10 127/21 133/4 133/6 138/8 139/3 139/12 140/16 143/1 143/3 148/3 149/11 151/6 153/17 153/23 154/2 154/18 155/15 156/12 158/21 160/25 161/13 162/20 165/12 168/9 169/13 170/14 172/5 172/7 172/21 173/5 174/22 176/2 183/24 184/4 186/7 188/23 189/17 192/25 193/16 198/10 198/19 200/2 200/11 202/6 202/13 204/5 205/15 205/17 214/19 216/16 219/2 220/13 223/6 224/6 226/15 233/19 233/22 234/25 236/21 240/5 242/19 242/25 243/17 243/24 247/2 247/6 248/6 248/14 263/24 265/13 266/25 268/17 268/21 272/2 275/4 276/12 276/13 278/16 281/20 281/21 281/23 282/4 283/3 288/20 290/3 290/13 293/23 303/25 304/22 306/2 307/14 307/15 313/6 317/7 317/11 317/14 318/1 318/17 318/21 319/5 323/4 323/5 323/18 323/21 324/14 330/2 330/18 333/7

113/15

334/10 335/23 338/2 ununderstandable [1] 338/3 338/16 342/4 342/8 343/6 346/18 346/25 347/7 347/12 347/13 347/21 348/20 351/12 351/24 352/5 **up-front [5]** 15/9 53/17 121/9 133/6 138/8 updated [2] 211/23 212/1 upfit [1] 167/4 upgrades [1] 141/20 uploading [3] 258/17 260/1 260/2 upon [5] 20/7 57/7 140/10 347/8 353/9 upper [2] 226/24 302/2 **upside [1]** 181/20 **upward [1]** 139/14 upwards [1] 227/18 urge [4] 15/24 327/24 328/2 345/24 **us [142]** 4/1 4/10 6/17 7/11 7/18 7/19 8/17 10/1 11/19 12/11 12/12 12/22 16/16 20/17 22/6 26/14 27/12 36/4 37/19 38/24 40/24 41/16 43/5 44/3 44/10 44/16 44/18 44/24 48/15 51/14 57/7 67/4 68/8 68/13 69/5 69/23 69/24 69/25 70/13 70/17 75/25 76/15 77/15 78/7 88/9 88/11 88/14 91/20 92/1 98/13 111/25 113/25 116/6 117/3 122/19 123/12 127/4 129/5 131/3 131/8 135/17 135/19 137/11 145/9 148/11 148/23 152/9 157/15 164/18 168/25 169/6 173/16 173/20 179/24 192/16 196/14 203/1 203/14 206/4 207/4 207/7 208/24 212/20 230/19 230/21 234/3 235/17 235/18 235/21 236/21 240/7 240/12 242/11 244/16 245/18 246/13 246/17 246/18 248/25 255/4 257/2 260/24 261/21 261/22 262/7 267/11 291/22 294/17 295/8 296/22 297/4 312/3 313/14 317/17 318/3 318/22 319/11 319/25 320/18 322/23 324/15 327/5 327/6 327/7 328/18 330/18 331/6

U

us... [15] 332/17 334/19 336/7 337/7 338/17 340/1 340/6 341/5 341/11 344/11 344/11 347/1 347/1 349/20 352/6

US-based [2] 235/17 235/18

usability [3] 148/11 200/13 224/17 usable [2] 150/25

182/22 USB [2] 239/21 309/23 use [93] 31/14 32/21 32/24 43/13 53/8 59/16 59/25 60/25 61/23 64/5

65/4 67/15 68/19 68/23 69/22 70/7 79/16 80/25 82/11 94/10 94/16 94/18 102/8 102/12 105/25 106/18 106/19 107/22 107/22 109/5 112/12 126/18 126/20 126/23 138/18 139/21

148/14 150/21 150/22 159/15 161/9 167/3 172/16 173/19 178/18 182/10 183/2 183/15

183/16 184/16 187/1 187/6 189/25 202/10 208/1 208/5 210/5

217/13 223/7 228/15 231/5 231/10 231/12 232/21 237/2 237/7 240/3 241/14 248/2

248/3 252/5 253/15 255/7 261/1 261/3 266/20 275/20 276/9 276/9 285/5 285/12

285/15 285/17 288/21 288/25 291/23 293/1 303/17 306/18 308/5

321/21 326/19 329/18 used [33] 10/12 34/21 51/25 68/12 69/8 91/5 107/22 107/23 112/3

128/4 174/1 194/6 194/7 208/3 215/14 230/9 230/17 231/4 231/24 240/7 240/11

247/18 262/24 279/13 285/14 288/20 300/16 301/1 301/17 303/6

311/10 326/16 345/3 useful [2] 53/19 69/17 user [21] 94/8 106/22 155/22 159/10 200/16

200/16 200/22 201/2 201/12 201/21 202/19 202/19 215/9 216/10

225/9 231/6 248/5 249/7 250/2 250/8 275/6 285/6 305/20 344/23 345/10 usually [14] 36/8 60/9 123/16 125/2 125/6 125/21 126/3 127/9 129/16 164/23 192/16 233/1 245/12 262/19 utilizing [1] 140/24

216/11 218/24 218/24

220/18 268/24 287/18

uses [6] 107/17 112/17

using [29] 19/22 61/19

64/5 64/7 64/8 90/24

91/10 105/23 106/25

112/23 140/1 152/18

159/5 159/19 165/2

187/18 200/25 216/10

202/12 239/21 249/5

user-friendly [1]

287/19

106/22

287/18

VAC [1] 161/25 VAC-funded [1] 161/25 vacation [1] 177/11 vain [1] 80/19 validate [6] 77/20 152/3 233/1 242/16 242/20 242/25 valuable [2] 62/13 75/15 value [3] 77/21 79/12 151/2 values [1] 316/20 Vanderburg [1] 176/4 variations [1] 319/22 variety [6] 12/15 22/18 50/6 59/23 298/24 316/16 various [5] 69/3 70/7 295/25 298/25 308/5 vast [2] 253/11 296/3 vectors [1] 69/7 vendor [14] 2/16 139/3 144/15 158/15 167/1 235/24 265/18 267/17 267/20 268/4 282/17 296/24 304/20 305/8 vendors [15] 6/20 8/16 11/9 14/17 58/25 67/23 71/21 144/17 205/10 276/21 296/10 312/12 319/3 337/22 337/23 vendors' [1] 331/24 venture [1] 13/16

venue [1] 352/5

verifiability [1] 70/11

verifiable [7] 59/7

326/8 335/17 342/1 345/2 345/4 350/7 verification [4] 59/2 115/1 204/18 326/13 verified [24] 20/17 38/5 57/15 57/18 58/21 58/24 59/13 61/3 75/17 78/9 115/14 209/20 215/2 221/2 258/4 299/17 299/23 300/6 309/8 309/15 310/18 321/5 326/23 329/11 verify [15] 59/15 59/18 60/4 60/8 99/10 193/3 209/20 233/5 269/14 309/10 310/22 313/16 313/19 316/21 326/19 verifying [7] 19/20 Verity [10] 264/16

114/25 200/17 200/22 201/2 314/13 314/18 265/13 268/3 268/17 268/22 269/18 269/24 270/2 278/19 283/25

versa [1] 285/21 version [6] 31/13 150/7 154/7 284/2 289/9 307/20

versions [4] 122/2 167/9 305/18 312/9 versus [9] 34/9 73/8 114/15 227/17 250/11 277/4 288/11 289/3

vertical [1] 174/17 very [124] 5/7 14/17 22/25 27/18 31/24 33/22 35/24 36/3 37/18 37/18 40/9 43/18 44/9 48/4 51/19 52/13 52/22 53/5 53/19 57/12 58/18 58/23 59/12 59/23 62/13 62/22 63/4 63/4 68/20 69/21 71/4 75/18 77/12 78/13 84/16 89/16 89/24 91/2 91/8 93/24 106/12 106/16 107/1 107/7 110/20 110/24 112/10 118/7 120/6 120/25 122/8 132/13 132/18 138/24 140/12 141/19 144/12 145/3 145/18 147/5 166/13 173/1 173/15 183/13 187/2 187/20 188/2 189/3 191/15 192/11 200/23 205/14 206/25 207/6 207/6 209/12 212/15 219/19 227/7 229/19 233/18 235/14 237/3 237/4

239/7 240/4 240/6

241/20 254/7 262/21 262/23 263/21 266/17 267/9 269/6 270/11 270/14 275/13 283/16 295/9 297/10 297/16 300/22 301/7 301/10 306/14 312/11 316/25 320/25 325/21 327/8 327/12 328/11 328/12 329/23 336/9 338/19 338/23 340/24 342/10 346/21 347/15 347/22 348/4 vested [3] 104/23

221/19 340/3 vetted [2] 73/21 73/22 via [3] 101/7 211/11

246/21 viable [1] 81/5 vice [5] 176/4 234/16 234/18 285/21 297/20 video [7] 146/24 149/2 163/1 207/11 207/18 207/21 208/18

videos [2] 145/21 319/17 view [4] 38/10 138/10

218/11 303/3 violate [2] 15/4 225/22 violation [1] 42/15

Virginia [8] 101/6 135/1 135/3 136/10 236/3 249/2 261/2 265/20

virtual [1] 250/11 visibility [2] 73/23 157/6

visible [1] 225/13 vision [5] 90/7 93/9 93/21 107/3 107/7 visit [1] 173/16 visual [4] 145/12

175/11 187/17 307/25 visually [3] 94/2 154/11 197/13 vital [2] 5/21 326/7 **VIU [1]** 209/2

VIU-800 [1] 209/2 voice [2] 223/14 346/2 volume [2] 259/1 301/11

volunteered [2] 17/15 89/7

vote [204] 11/17 12/9 17/7 17/8 18/18 20/5 21/1 23/13 23/13 23/14 23/21 24/1 24/11 24/11 25/16 25/18 25/19 27/17 28/16 28/21 29/6 29/15 31/4 31/16 31/25 32/9 33/11 33/12 33/21 34/17 34/19 34/20

34/20 34/21 34/24 35/4 35/10 35/20 36/18 37/9 37/10 38/13 39/5 39/9 39/14 39/15 43/24 44/14 45/25 46/2 46/22 46/23 46/23 46/24 46/25 47/1 47/5 47/7 47/9 63/8 68/20 70/23 72/14 72/14 72/15 73/15 73/16 89/23 90/1 92/9 95/10 95/15 95/18 96/10 96/19 98/4 98/5 99/4 101/7 105/12 105/15 105/16 105/19 106/3 106/3 106/18 109/24 131/5 134/22 136/14 136/14 136/23 137/4 142/12 142/13 142/21 146/22 153/17

154/5 154/10 154/19 155/16 155/20 157/3 165/7 165/10 165/23 165/24 166/3 171/2 172/8 179/15 179/19 180/3 182/6 182/12 183/4 183/5 183/11 183/22 184/1 184/2 184/7 184/7 184/8

185/17 185/18 185/18

189/15 191/24 193/14

193/16 193/23 196/16

196/25 197/22 198/4

200/11 201/6 203/15

206/24 214/1 214/14 214/14 214/15 214/16 219/15 222/18 223/13 223/17 223/17 223/24 232/6 238/11 240/25 241/25 242/1 242/1 242/18 244/19 245/13

247/3 250/9 256/13

279/19 280/3 281/3 285/16 285/20 286/8 286/11 286/13 290/21 292/17 300/12 300/16 301/21 301/21 302/2

272/11 278/15 279/14

302/3 302/6 302/9 307/18 309/7 309/17 314/11 314/17 325/11 326/6 327/23 328/2 328/6 333/3 333/8

333/12 333/22 333/23 340/14 350/17 350/17 351/19 vote's [1] 274/12

vote-by-mail [5] 154/19 165/10 172/8 300/12 300/16 Votec [1] 307/10

voted [34] 25/25 26/1 26/1 26/2 33/23 73/14 V voted... [28] 96/12 96/12 96/13 96/16 136/25 137/7 149/13 168/22 170/13 178/12 191/14 197/20 198/15 200/10 222/5 224/8 230/8 244/19 270/2 279/5 280/21 281/14 286/2 291/16 331/22 333/16 333/24 338/20 voter [258] 6/11 11/17 12/6 13/16 13/21 16/4 16/11 18/14 18/20 20/4 20/17 20/23 23/12 25/7 25/8 27/19 28/17 29/19 30/3 30/5 30/8 30/16 31/21 32/2 34/15 38/1 38/3 38/5 39/7 43/18 44/5 56/8 56/22 60/2 63/3 90/8 91/6 91/17 93/9 93/9 93/11 94/9 94/16 99/2 99/16 108/10 109/24 109/25 114/12 117/23 136/3 136/24 137/4 137/9 137/12 138/15 139/12 140/24 141/18 142/5 142/12 147/17 147/17 149/10 149/15 149/24 150/2 155/4 155/9 156/9 157/5 157/6 158/25 160/23 160/25 161/7 161/9 162/19 163/3 167/18 168/21 169/13 170/12 171/2 171/5 171/10 175/4 177/13 178/20 179/9 179/12 179/14 179/17 179/20 179/23 180/1 180/2 181/9 181/14 181/20 181/21 182/1 182/20 184/11 184/23 185/8 187/4 187/5 187/8 189/13 193/12 200/8 200/20 209/4 209/5 209/6 209/17 209/20 210/3 211/10 212/19 213/18 219/5 219/11 219/22 219/23 220/2 220/9 220/11 220/23 221/2 221/5 221/6 223/14 223/21 225/9 225/10 225/13 225/17 225/17 225/22 226/7 228/24 232/25 237/14 237/16 237/18 237/24 238/16 238/17 238/19 238/20 238/24

239/3 239/3 242/2

242/8 242/14 242/17

242/25 243/1 243/3 243/9 243/11 243/12 243/13 243/19 243/22 245/25 250/8 250/16 250/19 251/3 251/14 251/16 251/23 252/8 254/18 254/20 255/11 260/14 260/18 261/8 262/15 263/13 272/2 272/21 272/24 278/13 279/5 279/16 279/16 279/18 279/20 279/20 279/24 280/7 281/1 284/19 284/22 284/23 285/3 285/15 285/20 285/25 289/21 290/14 290/20 291/11 291/13 291/19 291/25 292/13 299/17 299/19 299/24 300/6 300/11 302/7 302/8 302/9 302/10 303/5 303/16 306/1 306/4 306/18 306/22 307/7 307/11 307/13 307/16 307/23 308/1 308/2 309/2 309/8 309/10 309/15 310/18 310/22 313/15 313/21 314/9 314/18 315/19 316/1 316/17 321/5 324/17 324/23 327/20 332/3 335/10 336/11 340/23 345/21 345/23 voter's [7] 20/2 155/14 187/6 193/24 193/25 279/8 326/17 voter-activation [1] 243/3 voter-registration [1] 142/5 voter-verified [9] 20/17 38/5 209/20 221/2 299/17 309/8 309/15 310/18 321/5 VoterGA [1] 349/25 voters [136] 13/4 14/1 15/15 15/17 16/21 16/22 16/23 17/1 17/2 17/5 17/22 17/25 18/4 18/10 19/8 19/20 19/25 19/25 20/9 26/5 28/11 30/15 43/6 43/7 43/19 45/19 58/4 58/21 59/17 60/4 60/7 60/25 61/1

61/3 61/6 61/23 61/24

63/15 64/5 64/8 86/21

91/12 92/5 94/21 99/5

90/17 91/5 91/9 91/9

99/12 103/1 109/19

110/9 111/5 111/20

114/19 123/8 132/7

62/10 62/24 63/13

60/6 64/7 69/11 69/12 69/14 70/1 70/3 72/5 142/7 153/12 153/16 153/21 154/4 154/13 155/24 156/16 156/19 157/2 163/20 164/7 164/8 171/10 179/18 251/14 255/14 255/16 277/23 321/1 326/20 331/19 334/6 335/5 335/18 345/4 voting [249] 2/18 2/22 5/18 5/19 5/22 6/1 6/9 6/21 6/22 11/3 11/4 11/6 11/12 12/7 13/2 13/3 13/8 14/25 15/4 15/13 16/12 17/23 18/1 18/9 18/21 19/9 20/3 20/6 20/20 20/23 21/12 22/21 23/11 23/18 23/20 23/25 24/2 24/4 24/6 24/7 24/18 24/19 25/13 25/20 25/22 27/14 29/2 29/24 30/2 33/8 33/10 34/8 34/9 34/10 34/16 35/8 35/10 35/21 35/21 36/9 36/13 41/15 41/19 42/7 42/8 42/9 42/10 42/15 43/6 43/17 44/12 45/2 45/10 45/13 47/3 48/2 48/9 49/16 56/13 57/4 57/18

133/2 135/15 135/22

136/17 138/4 139/15

139/16 149/5 149/17

158/24 166/19 168/6

169/23 170/21 171/1

174/18 175/10 176/12

176/13 178/9 178/10

179/6 181/7 182/11

183/8 185/22 186/2

187/17 191/22 195/7

195/25 200/24 201/5

203/12 207/5 208/15

213/22 214/13 215/3

233/4 235/10 237/6

240/5 240/10 240/24

240/25 241/2 241/10

266/23 266/24 270/5

271/8 280/6 298/12

298/13 300/16 301/16

306/12 318/20 322/15

323/9 325/20 326/18

326/23 339/6 340/15

345/23 346/2 348/15

votes [48] 13/21 33/16

35/25 36/3 36/6 36/7

39/19 47/1 47/2 47/5

59/7 59/9 59/15 59/22

voters' [1] 238/8

252/9 258/5 261/2

241/14 241/20 247/23

68/24 69/21 70/10 70/16 75/7 75/17 78/9 84/18 84/23 85/15 85/18 85/19 86/18 86/20 88/13 91/15 92/1 95/17 95/17 96/5 96/22 98/14 98/18 98/24 99/15 100/22 101/2 101/23 102/6 102/14 102/25 103/13 103/20 104/1 105/9 106/17 107/8 107/13 108/15 111/1 112/4 116/13 118/8 118/12 118/13 121/19 126/19 127/8 127/16 128/19 130/24 132/10 132/17 133/2 133/25 136/22 137/3 139/13 142/8 145/16 146/11 147/22 148/17 149/11 149/17 149/22 151/4 151/6 151/7 151/9 151/12 151/22 153/4 159/7 159/12 161/24 161/25 162/11 162/24 163/15 165/11 167/4 171/9 173/10 192/1 198/22 199/1 207/25 208/25 211/21 212/5 213/11 213/13 213/15 213/21 220/14 221/16 221/18 223/23 235/23 236/6 236/23 241/17 241/24 241/24 243/23 247/3 247/9 247/13 258/6 262/15 264/16 265/13 265/17 268/3 270/13 270/14 271/20 279/12 280/5 283/25 286/25 288/19 294/17 295/4 296/6 296/13 296/22 298/6 299/3 299/11 305/10 307/6 313/13 322/16 322/21 326/3 326/3 327/18 329/1 329/11 331/4 333/5 335/19 339/18 340/5 340/9 347/9 347/17 347/17 347/20 347/23 348/7 348/11 348/11 348/15 348/23 349/5 350/6 350/23 351/2 voting-rights [2] 45/2 45/10 voting-system [1] 159/12 **VP [2]** 267/4 267/22 **VPAT [1]** 215/7 **VR [3]** 23/19 45/2

58/23 58/24 59/13

59/16 59/24 61/3 64/9

199/21
vulnerabilities [5] 48/9
52/3 69/19 84/3 331/9
vulnerability [4] 67/2
84/5 84/12 84/12
vulnerable [3] 13/5
15/5 16/15
VVPAT [7] 214/22
300/6 302/12 307/19
314/17 315/16 349/5
VVPATS [1] 316/5
VVSG [6] 211/20
211/20 211/25 212/2
303/25 314/3

Wagner [1] 176/14

wait [5] 15/7 15/22

211/6 247/2 292/25

293/4 294/21 306/23

waiting [5] 30/15 89/11

W

walk [14] 29/15 33/10 33/11 168/22 175/25 209/9 220/3 264/18 268/23 272/13 278/17 279/8 280/19 304/21 Walker [3] 64/17 64/24 78/23 walks [1] 30/24 wall [2] 274/4 333/7 walled [1] 275/14 walled-off [1] 275/14 Walmart [1] 274/22 want [186] 3/6 3/13 3/15 4/7 4/14 5/8 7/22 8/7 9/24 11/8 18/18 21/2 22/13 22/16 22/17 24/5 25/4 26/22 27/11 29/13 30/23 33/18 34/23 34/23 34/24 34/24 35/2 35/3 37/21 39/15 40/22 42/6 42/25 44/23 44/25 45/15 45/22 45/23 46/4 46/6 46/9 46/11 46/16 47/16 59/21 62/17 63/10 63/10 64/19 65/22 67/13 68/4 69/5 71/5 71/23 73/13 75/11 78/22 82/13 88/8 88/14 92/8 92/9 92/9 102/21 106/4 106/5 108/19 111/3 117/10 131/11 131/12 134/6 139/20 139/23 144/2 145/6 150/16 155/1 155/2 155/19 158/14 159/18 160/2 165/17 165/19 173/18 173/24 175/1 176/21 179/15 180/14 180/22 181/17 181/25 182/13 182/18 184/1

W

want... [88] 184/15 184/17 184/21 184/23 185/17 186/18 188/6 188/11 188/23 188/24 189/1 189/22 190/24 191/2 191/18 192/12 194/11 194/11 195/16 196/25 200/9 200/10 201/5 201/18 201/20 206/1 215/17 216/6 217/5 218/15 218/17 219/20 220/8 221/17 221/17 222/12 222/24 224/11 224/19 225/20 225/25 226/1 226/10 227/7 236/5 238/1 238/18 238/22 238/24 241/3 241/21 241/23 241/25 244/23 245/23 249/25 250/5 254/19 255/23 263/2 265/18 270/7 279/14 283/22 285/20 286/11 286/18 287/9 290/19 306/8 308/21 309/3 309/12 322/11 325/9 330/18 331/5 331/17 333/20 333/23 334/2 338/9 341/16 342/1 346/15 348/19 351/11 352/1 wanted [33] 26/21 31/18 34/2 39/2 47/18 47/22 60/22 61/4 71/25 84/24 85/24 99/11 113/7 121/23 137/4 153/15 155/6 156/7 162/9 186/15 193/14 193/16 196/5 196/20 199/12 224/3 231/9 240/17 246/12 260/14 329/20 342/3 343/10 wants [12] 15/7 92/7 116/12 128/25 183/4 184/1 251/3 254/11 273/17 280/17 286/5 340/12 warehouse [1] 159/20 warehousing [1] 229/21 wares [1] 8/17

wares [1] 8/17 warned [1] 350/4 was [206] 1/7 7/11 12/10 13/24 14/5 14/9 14/10 17/3 17/25 18/19 19/8 19/10 19/15 22/1 22/3 23/4 23/4 25/25 26/15 28/16 28/16 31/11 33/23 33/24 35/23 36/2 36/25 40/10 43/14 45/21 47/8 49/9

51/2 58/4 60/10 63/19 64/1 64/2 68/14 68/15 69/10 69/13 72/6 75/6 76/22 76/24 77/2 77/13 80/24 83/5 85/19 91/6 98/8 98/22 101/5 101/5 101/8 101/10 102/23 105/20 105/21 109/15 113/14 114/1 114/8 114/22 114/24 115/9 118/2 122/1 122/3 123/2 123/2 131/4 131/17 132/19 133/12 134/25 135/7 136/12 136/13 137/6 137/10 137/10 146/2 146/22 147/17 149/11 151/4 151/8 153/18 154/4 154/5 155/14 156/3 156/4 157/3 157/15 158/5 159/9 160/12 160/12 164/9 164/24 164/25 165/1 165/3 165/4 165/5 165/19 165/24 166/5 166/12 167/15 169/1 171/3 177/6 177/10 179/8 181/20 186/16 188/4 194/5 194/6 195/3 206/25 207/3 208/4 208/10 208/16 211/19 211/25 215/22 216/15 226/22 226/23 226/24 228/21 229/12 229/13 231/16 231/17 231/19 233/15 236/15 237/12 244/4 244/18 246/7 246/8 248/20 251/17 251/22 255/23 260/14 265/12 268/11 278/4 280/1 281/5 281/8 282/17 288/6 292/16 292/20 292/25 296/22 297/19 301/19 301/20 301/21 301/21 301/22 302/18 302/20 303/6 303/8 303/8 303/21 304/22 304/25 318/7 318/13 318/14 319/7 319/22 320/16 322/24 327/20 327/21 329/2 329/5 338/10 339/9 339/13 339/19 339/21 339/21 342/4 342/10 342/11 342/23 348/16 349/12 353/5 353/5 Washington [4] 87/3 148/18 159/9 176/15 wasn't [8] 71/1 166/3 166/14 196/18 281/10 281/17 323/5 334/8

waste [3] 247/21 248/4

272/4 watch [1] 230/4 watching [2] 101/16 104/17 watering [1] 80/13 way [77] 6/24 18/7 18/8 26/3 30/8 32/6 32/17 33/22 34/22 36/6 36/11 36/25 37/1 38/9 47/1 54/6 54/9 57/20 60/17 60/22 62/20 63/18 68/16 73/7 73/14 78/22 82/17 89/24 90/2 98/4 99/7 99/10 108/10 113/22 122/22 127/12 139/7 140/22 147/5 147/11 149/16 150/19 156/9 157/11 157/13 159/15 164/14 185/8 189/25 191/25 192/20 200/4 204/16 219/8 223/4 228/14 231/7 232/16 233/2 253/7 273/19 276/19 277/25 281/9 284/14 294/20 300/10 301/10 313/8 317/8 321/4 322/4 322/6 326/20 333/6 338/7 342/20 ways [14] 44/4 54/3 54/10 54/10 59/13 59/24 75/12 75/13 81/7 94/15 107/25 223/21 231/5 336/14 we [900] we'd [8] 17/19 22/6 30/10 47/22 267/22 294/24 344/11 349/20 we'll [49] 9/21 10/24 11/24 28/4 38/24 47/19 48/4 57/12 98/21 124/23 124/24 144/8 144/9 173/5 188/5 197/17 205/16 205/17 207/13 209/13 209/21 211/14 221/10 224/18 225/4 226/14 233/22 235/5 235/15 241/5 241/15 244/11 247/6 248/14 264/18 266/15 273/18 275/13 276/16 277/6 289/13 294/16 296/20 305/19 317/20 322/25 332/13 336/1 347/2 we're [214] 3/25 5/17

6/19 9/18 13/3 23/23

25/8 26/19 28/6 30/1

30/6 35/25 37/22 40/16

40/21 45/12 47/3 48/3

48/5 48/16 52/7 54/19

54/21 57/11 57/19

57/20 60/5 65/13 65/14 65/18 68/24 70/22 72/4 73/21 74/24 75/22 76/1 76/3 76/18 77/7 78/3 78/5 78/6 83/10 83/10 83/18 84/6 84/11 91/14 91/17 92/23 96/21 101/22 102/4 102/16 116/7 116/14 116/17 116/23 120/6 120/13 124/5 124/10 124/17 124/22 128/8 128/23 130/24 132/3 133/5 134/4 134/8 135/13 141/3 141/6 142/11 143/17 144/4 144/20 144/20 148/9 152/10 153/13 154/13 154/14 168/2 168/11 172/21 172/25 173/4 173/8 175/14 175/24 175/25 177/15 178/24 180/11 180/17 181/4 181/6 181/8 181/15 181/21 181/23 185/24 186/7 186/11 186/24 187/22 187/23 188/17 189/3 189/4 189/7 189/12 192/11 193/7 194/15 198/7 200/7 202/13 205/5 205/10 205/20 208/24 209/1 212/11 213/4 215/2 224/2 226/11 229/20 233/20 235/19 235/24 236/6 236/7 238/16 240/20 242/24 242/24 242/25 243/20 244/1 244/5 245/11 245/15 246/5 246/23 246/24 247/25 248/4 253/8 260/4 260/4 261/19 261/23 261/25 262/19 262/20 264/13 264/15 264/17 265/11 265/21 265/23 267/9 268/23 269/22 269/24 271/11 271/18 271/21 273/23 277/10 282/9 287/25 288/4 295/8 296/23 296/24 296/25 297/5 302/4 302/4 302/15 302/17 304/12 304/19 305/7 307/4 308/10 310/5 317/8 317/21 318/17 322/5 322/16 322/19 322/20 322/21 326/10 329/14 331/18 332/24 336/21 338/7 340/14 342/17 347/22 347/24 349/3 350/25 351/1 we've [76] 3/2 8/2

10/10 18/3 18/14 40/8 59/11 68/19 70/15 72/23 73/11 79/4 84/7 84/8 96/14 97/17 100/2 100/6 116/12 123/23 130/13 139/1 157/9 158/4 159/7 163/23 167/7 181/9 185/19 194/9 206/20 206/20 207/16 210/22 213/8 221/19 223/2 235/18 236/12 237/3 237/6 237/14 245/6 245/11 245/11 246/23 256/23 261/22 262/5 262/16 265/2 265/15 268/1 270/4 277/19 278/10 285/1 292/25 294/4 294/7 294/21 316/3 318/11 318/16 319/13 319/20 321/6 331/22 333/1 347/9 347/10 347/14 347/18 348/6 349/25 350/23 weakest [1] 84/10 **weaknesses** [2] 55/5 56/18 weather [1] 172/11 web [5] 101/3 101/23 102/6 112/13 301/1 web-based [4] 101/3 101/23 102/6 301/1 website [4] 53/10 53/21 112/7 112/9 websites [2] 112/12 211/1 Wednesday [1] 189/6 week [7] 35/8 59/3 148/22 155/12 322/18 337/13 339/7 weekly [1] 339/22 weeks [8] 34/13 35/9 35/11 194/8 257/2 257/3 337/4 337/24 weigh [1] 135/19 weighs [1] 121/11 weird [1] 23/1 Welch [1] 141/23 welcome [16] 3/3 9/5 12/22 48/1 234/7 234/7 294/25 324/24 327/5 328/16 330/20 331/1

338/17 338/22 341/10

welcomed [1] 45/23

well [127] 6/19 7/23

8/16 13/23 17/21 18/22

22/8 22/15 24/25 26/3

33/17 35/1 35/19 40/6

51/3 52/15 55/17 56/12

26/24 28/7 29/1 31/6

40/7 43/4 43/21 44/9

349/19

W well... [101] 63/21 64/5 66/8 66/11 81/10 81/15 82/3 82/11 86/8 90/4 91/11 93/6 94/21 95/3 97/16 98/13 98/21 100/12 105/6 107/14 109/22 112/18 116/21 118/25 122/10 123/4 123/17 124/19 127/9 128/1 130/23 131/8 131/8 132/5 132/18 133/21 134/4 138/23 143/9 144/3 155/12 160/11 180/3 201/24 211/20 214/9 216/18 220/17 222/14 223/4 224/12 226/3 228/1 229/16 232/12 232/14 237/4 238/2 240/7 240/7 243/25 247/23 248/4 248/19 254/2 255/20 260/6 261/17 265/25 269/4 276/6 276/24 289/5 291/8 295/17 299/9 300/8 300/10 300/21 300/25 301/3 301/19 305/6 306/16 308/8 310/4 311/16 321/19 322/12 322/20 329/8 330/11

well-identified [1] 301/19 well-meaning [1]

329/8

331/3 336/15 337/6

339/4 344/15 345/7

347/6 348/5 349/18

well-noted [1] 6/19 well-taken [1] 143/9 well-tested [1] 240/7 well-used [1] 240/7 wellness [1] 87/22 Wells [4] 3/16 118/15 118/20 123/11

Wenke [3] 6/2 48/2 48/20

went [7] 96/9 122/25 137/1 156/17 228/20 336/14 339/8

were [78] 14/7 23/18 28/13 28/13 28/18 28/18 28/23 28/23 30/12 39/19 39/20 59/11 61/19 63/15 69/15 72/5 72/9 77/12 81/25 91/3 91/22 97/21 111/5 119/24 135/6 135/10 135/11 136/25 137/2 137/3 137/21 141/13 146/3 148/23 157/2 159/6 162/3 163/1 164/7 164/8 164/25 165/1 165/2 165/6 165/15 165/16 165/22 166/14 167/14 184/12 191/22 191/23 193/20 196/12 200/3 211/21 211/23 216/9 230/1 245/2 251/17 255/1 263/9 265/7 265/9 280/22 287/11 294/10 305/20 315/8 330/4 334/7 337/16 339/20 341/25 342/6 350/3 350/22

weren't [2] 47/17 98/1 Wes [6] 174/5 176/14 194/9 202/18 204/20 205/14

West [3] 101/6 236/2 249/1 western [1] 68/16 what [318] 5/2 10/10 11/4 20/9 20/12 23/1 23/4 24/9 25/4 25/6 25/12 25/15 26/4 26/7 26/13 26/15 26/16 31/8 31/17 33/16 33/23 33/24 40/8 43/11 44/11 44/15 44/17 44/18 44/18 44/25 45/11 45/15 46/6 46/7 46/20 48/8 48/10 48/11 48/14 49/6 51/23 52/4 54/24 59/10 60/5 60/7 64/20 65/18 65/22 66/2 66/11 66/12 68/11 69/1 70/6 71/7 72/10 75/11 75/24 76/1 76/3 76/15 76/17 76/21 77/6 77/12 78/13 78/25 79/23 80/5 80/11 80/19 80/22 81/13 81/23 82/22 88/11 92/23 93/4 94/25 95/14 96/9 96/13 96/15 96/19 96/21 96/23 97/4 97/15 98/13 98/17 99/6 99/14 102/9 102/24 103/24 104/19 107/15 107/20 108/21 109/2 109/2 111/1 112/1 112/4 112/6 114/13 114/21 116/12 117/8 118/14 120/12 121/5 121/13 124/11 124/12 124/15 124/21 124/24 124/25 125/19 125/19 126/4

127/10 128/14 129/1

131/2 134/16 134/17

136/7 136/14 136/14

142/19 145/22 146/8

139/4 139/4 141/3

147/2 148/1 151/18 151/21 152/3 152/16 153/11 155/13 155/19 156/11 157/14 158/14 158/15 163/18 163/25 166/18 167/10 169/5 170/12 170/14 170/20 171/1 172/6 175/3 175/12 177/8 178/23 178/24 179/1 179/14 179/18 180/6 181/8 184/4 187/10 188/3 188/23 189/4 189/10 189/12 190/23 192/6 192/20 193/7 193/11 195/13 195/15 195/25 197/24 199/5 199/5 201/11 202/18 202/19 206/6 207/15 208/4 210/16 215/17 215/24 216/7 218/10 218/12 219/5 219/22 220/8 220/24 220/24 221/2 222/4 223/9 223/10 224/22 225/7 225/8 225/10 227/6 229/6 230/19 231/16 231/19 235/5 236/5 236/16 237/18 243/2 243/9 245/11 248/25 250/15 251/1 254/21 255/4 255/23 256/25 257/8 257/18 260/4 261/15 262/4 262/14 262/23 265/11 267/24 267/25 267/25 268/22 270/9 272/1 273/12 274/17 275/7 275/17 276/1 276/4 276/8 277/10 277/10 277/15 277/24 278/19 279/10 279/15 280/8 281/4 281/5 282/2 282/12 282/16 283/4 283/22 283/24 284/10 284/23 284/25 286/10 287/24 290/6 292/25 296/14 297/16 302/3 312/7 313/22 314/17 314/22 316/3 317/10 317/11 318/19 318/24 319/5 319/5 319/6 319/7 319/19 319/22 320/11 320/12 321/9 321/18 322/5 323/14 326/10 330/11 332/1 334/6 334/12 336/18 339/7 339/9 339/11 339/15 339/16

339/18 340/21 342/9

345/9 347/14 351/16

59/20 71/25 126/6

what's [24] 12/23 44/3

131/11 139/7 140/7 202/14 211/20 219/4 241/10 243/22 252/19 272/8 274/10 274/16 276/9 281/1 297/24 301/14 314/12 314/17 340/4

whatever [26] 14/19 29/21 30/25 35/17 80/7 80/14 83/16 110/7 111/6 125/4 125/13 134/22 164/13 167/1 205/7 219/12 219/19 270/17 318/8 318/16 318/18 327/25 328/1 333/18 337/24 347/7 whatnot [1] 42/22 whatsoever [1] 142/9 wheel [1] 173/20 wheelchair [1] 174/19 wheels [1] 239/17 when [171] 2/6 8/3 8/5 9/11 10/2 10/9 11/9 13/21 15/15 19/9 22/11 23/17 25/13 25/17 25/22 26/17 27/6 27/13 28/7 28/21 28/23 29/5 29/15 30/12 31/15 33/7 33/10 33/11 34/9 34/21 37/7 37/8 37/22 40/3 40/16 42/11 44/14 45/21 45/23 46/23 47/3 52/23 54/17 56/19 61/8 66/24 68/9 69/18 72/12 73/10 73/11 76/13 81/7 82/8 84/4 84/5 88/16 88/17 88/21 89/19 89/24 91/1 98/17 99/6 100/7 101/3 103/2 103/22 104/9 111/19 113/11 114/10 121/16 124/13 125/9 125/9 128/1 128/6 130/9 131/15 131/18 135/3 135/7 137/20 140/20 141/14 142/3 142/5 142/6 142/10 142/18 142/21 142/22 143/5 148/20 150/1 153/3 158/13 161/20 162/5 162/18 164/23 165/15 166/9 167/14 167/15 168/2 173/5 174/5 174/6 175/24 177/23 181/4 187/11 192/15 197/9 198/8 199/24 202/7 202/11 211/24 213/11 213/22 215/23 222/11 225/10 225/11 227/8 230/3 231/24 243/23 244/17 245/1

245/16 246/17 246/25

247/23 250/6 250/10 251/11 252/16 256/10 257/11 259/21 260/4 272/1 275/22 276/13 279/6 279/18 290/10 290/20 292/25 293/21 301/15 301/22 302/18 302/22 309/25 310/6 313/13 322/7 322/20 325/6 326/6 331/5 334/4 335/15 340/8 342/16 348/15 whenever [3] 102/25

whenever [3] 102/25 243/4 254/23

where [114] 8/13 10/13 12/15 21/25 27/22 31/1 31/11 39/7 43/22 60/13 60/16 66/15 67/5 69/10 72/5 73/21 74/11 77/8 81/8 81/23 83/1 83/2 84/2 84/11 86/12 89/5 105/25 107/22 109/11 109/11 112/8 126/3 128/22 143/3 144/6 153/10 154/9 154/16 155/4 156/8 156/16 156/19 156/20 166/3 169/12 178/21 179/7 180/9 190/5 199/10 200/24 203/23 206/15 206/16 209/16 210/18 216/20 216/23 218/20 221/19 221/23 222/15 223/22 224/21 225/21 240/25 241/4 242/18 243/21 244/18 245/7 249/4 253/6 263/9 265/23 270/19 270/23 270/23 271/9 272/12 274/9 274/12 280/4 283/17 284/8 284/21 287/20 290/12 291/18 301/20 303/3 305/21 317/17 317/19 318/3 320/1 320/19 324/15 326/5 327/7 328/18 330/21 332/18 333/22 334/19 335/17 336/7 338/17 341/6 344/5 344/11 346/12 347/1 349/20

where we've [1] 221/19

whereas [4] 64/6 69/16 88/21 200/25

whereby [1] 297/10 wherever [2] 56/18 84/10

whether [27] 14/25 15/2 25/16 27/24 32/1 64/1 64/1 89/8 89/10 99/19 101/24 107/5 W whether... [15] 116/16 116/16 197/8 201/11 271/20 282/24 283/13 299/20 301/2 302/5 302/12 302/12 310/25 317/18 321/15 which [100] 6/20 11/15 14/3 14/23 16/6 19/7 20/7 23/12 23/20 24/1 25/10 30/17 34/22 37/1 40/9 40/12 42/8 42/18 43/17 44/1 50/21 52/4 53/18 61/13 61/22 62/5 63/12 64/7 64/9 67/15 69/8 74/20 87/7 91/3 91/16 97/12 101/16 105/21 107/15 107/16 112/1 115/12 120/5 133/24 140/1 143/1 147/12 148/1 148/18 148/18 149/3 150/9

150/23 151/3 155/9 156/14 159/14 161/24 161/25 171/14 185/21 189/19 195/22 203/14 206/11 209/2 210/24 212/2 217/14 221/13 221/22 222/21 226/3 226/23 227/6 228/14 229/1 232/13 241/6 253/19 257/9 262/13 266/5 268/3 271/21 272/10 273/8 287/18 288/9 289/6 293/19 294/5 299/12 307/1 325/4 326/3 326/9

238/16 305/18 318/11 whims [1] 16/5 whistle [1] 27/5 whistles [2] 27/3 204/2 white [4] 73/21 224/18 244/7 281/24 whited [1] 218/10 whited-out [1] 218/10 Whitelisting [1] 276/1 Whittle [1] 7/20 who [69] 3/20 10/1

329/11 341/24 351/9

whichever [1] 338/7

while [8] 20/2 38/25

39/6 162/19 193/21

34/16 46/13 46/16 46/25 47/7 49/16 53/13 57/5 61/6 61/24 89/21 89/23 94/2 94/21 94/24 95/17 96/22 97/10

16/8 17/24 18/1 22/18

22/24 23/10 28/10 32/8

97/10 97/13 97/21 98/8 102/1 102/2 102/3

103/5 104/22 105/17 106/4 107/7 111/5 112/16 114/25 122/16 137/4 168/22 177/10 179/10 179/24 188/16 189/13 206/9 213/13 231/25 241/21 252/5 264/14 264/24 277/9 277/13 324/12 325/2 329/9 331/22 333/8 339/1 340/9 342/18 350/2

who's [15] 6/10 25/12 44/13 86/7 93/12 170/9 249/7 249/13 304/8 317/12 317/13 328/24 337/5 340/1 340/5 whoever [2] 28/16 226/16

whole [12] 32/19 55/3 56/21 129/8 130/25 141/4 146/17 151/10 179/16 216/12 261/15 343/13

wholeheartedly [1] 80/21

whose [1] 97/24 why [36] 34/3 36/4 61/4 63/17 67/16 95/16 95/18 131/10 131/12 132/3 138/13 155/16 165/20 180/1 180/2 236/8 265/8 265/12 266/3 266/17 267/6 267/10 268/3 271/2 288/10 288/10 288/12 288/14 289/1 289/3 321/24 322/22 323/8 325/4 337/11 339/19 wide [4] 50/6 77/24 128/5 295/5

widely [1] 240/11 widely-used [1] 240/11 wife [4] 10/6 198/4 198/4 198/17

Wilkes [2] 317/22 318/5

will [210] 5/15 5/18 5/25 6/4 6/8 6/12 6/14 7/2 8/3 8/12 8/13 8/14 8/18 8/19 8/20 8/23 9/1 9/21 11/7 11/22 14/3 14/4 15/14 16/14 22/8 28/20 34/3 34/3 36/14 36/14 36/21 47/10 47/15 48/7 48/14 50/22 56/2 56/3 58/7 58/22 60/16 60/17 64/15 81/11 85/23 91/20 92/1 98/2 100/8 102/10 110/7 111/21 114/6 118/14 119/16 120/12

120/17 122/4 123/19 123/20 124/15 124/21 124/24 125/22 125/23 126/6 127/20 129/24 130/1 139/8 144/23 149/4 152/25 155/22 158/16 167/3 167/22 169/4 170/12 171/1 171/2 178/20 179/6 179/16 179/18 179/19 179/20 179/20 183/5 184/9 185/10 186/19 187/11 187/13 188/8 188/18 190/2 190/4 196/21 196/22 197/2 198/9 199/24 203/13 205/15 207/11 208/19 209/17 209/18 210/4 213/16 218/18 220/16 221/6 221/8 222/6 223/10 225/15 227/18 230/3 230/7 230/9 230/9 230/11 232/23 233/19 234/6 234/12 237/24 242/21 243/11 245/21 245/22 246/17 250/22 251/13 252/3 252/5 254/9 254/10 254/12 257/3 257/6 257/10 260/21 262/2 262/2 263/23 263/24 264/3 264/4 270/25 272/11 274/21 275/3 276/21 277/16 277/23 277/24 278/5 279/11 280/9 280/13 283/20 283/25 284/8 284/8 286/13 286/14 286/24 287/12 289/6 289/21 289/22 289/23 289/24 290/4 290/10 290/20 290/22 291/15 291/16 293/23 294/15 302/9 305/10 306/4 306/21 307/23 309/7 313/15 314/23 315/21 315/25 317/11 317/16 317/19 318/2 321/2 323/18 323/19 327/4 332/8 332/12 335/19 343/25

352/6 Williams [1] 323/19 willing [1] 139/4 win [5] 24/23 44/21 44/22 79/21 79/24 window [2] 152/11 313/20

343/25 346/12 349/9

Windows [3] 275/16 275/17 275/20 winner [1] 24/25 winners [2] 192/4

192/8 wires [1] 274/20 wiring [1] 274/18 wish [3] 22/3 57/5 221/8

withdrawn [1] 353/9 within [13] 26/25 29/20 57/1 67/3 123/23 165/6 216/19 241/24 242/3 252/11 256/11 308/19 326/20

without [14] 65/12 67/1 91/10 99/5 99/12 108/25 109/25 147/17 149/20 155/7 203/17 225/2 227/6 335/18 wizard [2] 151/4 162/1 women [13] 16/21 16/22 16/23 17/1 17/2 17/5 17/22 17/25 18/1

18/2 18/10 19/8 58/4 won [1] 249/15 won't [7] 8/8 80/25 85/22 121/5 224/20 285/15 337/8

wonder [1] 110/10 wonderful [3] 42/19 122/16 328/4

wondering [1] 40/10 word [10] 2/6 26/24 45/5 84/14 185/22 185/24 188/8 191/7 224/21 311/10 word's [1] 224/13

wording [1] 96/3 words [1] 36/17 work [63] 3/9 3/23 4/13 122/6 123/24 124/22 5/25 7/17 10/20 11/15 19/10 29/4 29/21 30/21 33/1 33/5 35/5 49/12 49/14 49/16 52/23 53/6 54/15 54/20 55/25 58/20 74/14 75/20 86/2 92/21 116/9 118/22

119/5 121/15 121/19 124/12 127/20 127/23 132/13 132/16 134/3 140/12 159/13 162/21 172/19 180/15 197/5 206/20 213/24 215/14 219/22 224/15 229/9

233/13 235/8 262/3 273/12 284/14 304/12 319/15 324/20 324/20 324/21 339/5 340/20

worked [22] 18/25 50/7 52/13 75/4 76/7 85/25 86/12 87/1 104/2 119/8 119/10 131/7 161/13

343/16

163/23 223/2 253/1 264/9 264/11 285/1

295/15 305/2 348/4 worker [44] 14/5 104/6 108/1 136/1 153/7 173/18 173/21 174/7 175/4 175/16 175/21 177/23 181/3 181/10 187/24 188/9 197/2 197/21 213/16 213/17 219/10 236/17 237/17 239/15 242/16 269/1 269/16 278/20 278/23 279/11 279/20 281/2 281/8 281/23 285/4 291/11 293/15 293/20 303/16 305/12 305/14 306/23 306/24 310/14 worker's [1] 243/1 workers [41] 19/12 31/21 95/7 104/9 104/12 104/19 109/1 136/17 163/16 173/19 173/25 174/1 174/3 175/20 175/22 179/10 180/19 180/25 181/14 188/12 188/14 188/25 235/9 236/16 236/21 237/2 239/8 239/12 239/18 239/19 239/24 240/1 240/6 248/8 248/10 248/12 257/25 258/8 259/20 260/6 266/6

working [26] 15/21 28/11 49/24 64/22 67/20 75/6 75/9 75/19 79/1 86/17 104/23 128/9 154/18 159/7 164/25 187/3 215/25 233/17 267/7 269/15 318/6 328/25 329/10 works [13] 19/14 26/17 27/1 86/23 104/21 121/21 155/18 164/1 164/19 172/21 219/24 291/4 324/21 workstation [1] 278/3

world [4] 68/16 192/7 206/18 253/24 worldwide [1] 212/13 worried [1] 136/1 worry [1] 63/6 worst [2] 51/8 62/7 worst that [1] 62/7 worth [1] 154/1 worthwhile [1] 350/19 would [233] 3/25 4/17 4/20 9/4 9/6 9/6 9/20 13/10 13/16 15/9 16/6 29/14 32/16 34/4 35/18 38/15 39/9 39/10 39/13

41/15 42/20 43/23

W

would... [211] 46/14 46/19 53/13 58/10 58/12 65/25 67/6 71/7 72/2 72/7 73/20 73/25 76/16 77/4 77/16 78/11 78/14 80/22 84/15 93/1 93/4 93/5 93/17 94/7 94/10 94/25 95/1 95/25 96/21 98/5 101/12 103/2 103/21 104/25 105/4 107/19 108/5 108/21 110/8 110/8 111/25 115/7 115/9 117/4 118/17 124/20 125/7 128/17 128/18 129/2 129/4 134/11 134/17 135/16 135/21 136/2 137/25 138/1 138/1 138/4 138/21 138/23 139/5 139/11 139/16 140/11 143/11 143/12 144/9 145/11 147/11 149/5 149/22 149/23 151/16 152/17 154/20 156/22 156/23 157/5 158/2 158/5 158/25 160/8 160/10 160/15 160/23 161/1 161/10 162/18 162/23 162/24 162/25 163/3 163/16 166/24 167/23 169/5 169/11 169/19 171/9 171/15 172/19 174/18 175/6 175/6 175/20 177/9 179/9 179/10 180/7 180/9 182/16 186/8 186/9 186/10 187/10 188/12 188/17 190/20 194/23 196/16 197/5 198/14 199/16 200/20 204/2 205/7 213/11 223/14 224/15 226/17 227/3 227/5 227/7 227/16 227/22 227/23 228/3 228/4 228/19 229/6 229/16 230/16 235/6 235/8 241/2 248/16 249/17 251/1 251/7 254/13 255/7 255/9 255/10 255/25 256/1 257/2 260/16 260/16 261/10 261/15 261/20 261/21 262/3 273/12 275/17 275/24 277/1 278/16 278/22 282/6 282/16 285/7 286/6 287/11 289/17 290/2 290/21 291/1 291/13 292/17 294/1 294/2

294/20 296/16 301/22 307/13 307/13 307/14 309/22 312/7 312/21 312/22 317/16 318/15 318/21 319/5 319/7 323/9 326/16 332/1 333/21 341/22 342/14 343/19 344/17 345/24 349/2 351/3 351/19 would've [1] 337/17 wouldn't [12] 63/10 97/2 128/20 137/11 156/24 156/24 158/9 167/25 228/4 251/5 263/15 284/4 wrap [15] 35/25 38/21 78/22 83/10 84/17 323/3 323/5 330/2 334/10 338/2 338/3 343/6 346/18 348/19 351/12 wrap-up [2] 330/2 334/10 wrestling [1] 320/25 write [12] 97/6 113/14 113/17 114/1 137/8 137/21 183/23 183/24 191/24 300/13 301/22 349/18 write-in [4] 137/8 183/23 183/24 191/24 write-ins [1] 300/13 writing [1] 113/12 written [9] 113/22 114/5 114/8 114/22 116/23 137/9 211/25 245/23 321/10 wrong [17] 32/4 35/7 44/16 54/10 54/10 56/2 131/11 203/19 203/21 291/23 291/25 292/5 292/6 292/16 292/22 340/4 348/16 wrote [5] 135/9 179/24

X

x-ray [2] 202/12 202/13

211/25 322/1 350/9

V

y'all [14] 7/25 10/6 103/19 144/1 189/10 247/7 249/3 256/10 319/3 319/11 320/3 323/14 336/12 352/1 y'all's [2] 282/6 338/8 Yale [2] 12/18 12/21 yeah [47] 23/4 23/4 29/17 31/7 32/22 37/16 92/4 94/8 98/20 99/24 100/1 102/23 104/6 108/16 108/16 112/3

114/1 164/22 164/22 169/7 169/7 170/15 170/20 182/25 196/18 201/4 201/7 203/2 222/5 226/9 228/2 228/8 228/8 249/24 249/24 250/14 254/5 280/3 281/6 288/16 289/11 291/3 293/10 311/7 313/18 317/9 348/21 year [39] 45/21 50/9 50/18 52/10 76/8 77/13 77/24 78/15 79/5 96/17 101/12 103/9 105/10 111/8 121/25 123/18 124/7 125/7 127/24 132/20 135/4 135/5 159/13 182/1 207/4 207/8 230/2 230/8 230/10 261/24 264/10 267/23 305/5 312/4 318/7 318/25 336/12 337/19 350/9 year's [2] 339/16 339/17 years [60] 17/25 19/16 22/25 23/3 23/7 49/2

66/10 68/19 71/1 74/16 75/4 78/2 86/13 87/12 89/1 101/4 105/15 117/25 118/1 118/5 118/21 119/22 122/21 122/23 128/3 139/13 151/15 176/8 176/17 176/18 215/18 215/25 229/17 229/18 235/19 268/6 268/9 268/12 270/19 270/25 271/9 283/15 283/17 284/7 295/16 295/22 295/25 312/5 318/6 318/7 329/10 331/8 333/5 348/3 348/10 350/1 350/4 350/12 350/24 351/1

191/23 243/11 243/12 243/13 243/22 Yep [1] 167/19 yes [59] 22/10 26/22 39/7 47/21 71/4 81/20 88/15 96/12 110/11 111/15 111/16 113/6 130/21 137/17 140/17 143/25 145/5 157/22 157/24 160/22 161/7 161/23 163/5 163/11 167/11 167/19 171/21 173/12 176/24 189/17 201/7 203/8 203/16 203/19 204/6 204/10

yellow [6] 180/21

204/19 212/6 227/20 249/6 249/18 256/4 260/23 284/18 285/19 287/4 291/21 293/13 311/12 313/10 314/7 314/10 315/4 315/5 315/14 316/15 327/8 330/24 338/3 yesterday [4] 81/14 81/25 336/25 346/6 yet [2] 223/19 229/25 York [6] 12/13 14/5 14/9 49/22 240/8 260/25 you [1413]

you [1413] you'll [36] 4/3 5/1 51/8 82/5 94/12 125/25 126/4 155/17 155/25 174/10 191/7 193/15 212/22 216/13 218/10 220/22 221/2 223/5 225/5 258/24 265/14 265/21 269/5 269/10 272/14 272/16 274/6 274/24 278/3 279/1 279/10 279/24 288/1 289/8 289/20 302/21 you're [92] 24/20 25/18 29/5 29/16 30/25 31/17 32/2 35/6 37/2 47/11

47/16 80/7 81/23 82/7 83/4 89/16 95/3 95/8 95/9 96/4 98/3 98/4 105/11 105/24 106/17 106/24 107/6 130/4 134/18 135/18 136/15 150/8 153/4 153/6 169/12 172/6 173/5 176/1 177/3 195/15 198/1 199/6 200/19 200/25 203/1 205/1 205/6 211/18 230/20 232/1 232/4 236/20 237/23 247/14 250/1 257/7 258/16 260/2 262/24 271/4 271/10 272/2 275/5 282/10 282/12 284/10 289/19 290/8 298/16 299/20 312/16 312/23 315/18 317/18 318/3 320/19

you've [34] 13/20 61/11 82/4 104/2 106/8 106/25 109/10 131/21 134/16 137/23 144/25 150/4 153/2 162/13

321/16 324/15 327/7

334/19 335/15 336/7

338/17 341/6 341/10

344/11 347/2 348/1

349/20

328/18 330/21 332/18

184/14 184/16 201/12 220/22 222/4 226/4 237/13 238/14 238/14 259/9 269/13 270/14 277/22 280/21 282/12 283/1 284/25 290/6 322/22 351/25 Young [3] 12/3 117/11

117/11 younger [1] 96/6 your [**225**] 3/23 4/19 5/24 5/25 6/24 9/6 10/22 12/2 12/23 28/21 29/6 29/9 31/14 31/19 31/24 33/16 34/8 37/10 40/24 41/20 46/14 46/17 47/16 49/7 53/9 55/17 66/11 71/6 71/9 71/13 71/25 72/14 72/15 78/14 79/12 80/15 81/24 82/9 90/9 95/4 95/4 106/1 106/8 107/3 110/8 115/13 115/24 116/1 122/6 128/15 128/18 128/19 137/24 138/20 151/12 152/17 155/3 157/21 158/3 158/13 159/4 159/9 160/5 160/21 161/11 162/7 163/14 164/18 169/3 169/15 169/25 171/25 172/1 172/22 173/25 175/10 175/21 180/19 180/25 181/5 182/8 182/9 183/16 185/6 185/20 185/22 185/25 186/19 188/2 190/15 191/12 191/16 194/24 195/3 195/25 196/12 196/19 196/21 196/21 196/22 198/24 199/16 199/17 199/19 199/21 199/21 200/4 202/12 202/17 202/19 202/19 211/1 211/4 213/10 213/17 213/18 214/6 216/20 216/22 217/8 218/2 218/4 218/23 219/10 219/20 220/1 220/5 221/23 221/25 222/24 225/1 225/1 230/3 231/3 232/4 232/20 234/12 236/19 238/7 239/9 240/21 247/3 249/22 250/1 250/14 251/20 253/16 257/20 257/25 258/8 258/15 259/11 259/20 260/1 260/5 260/13 260/21 262/4 263/22 266/11 269/17 269/17 270/20

		I	
Υ			
your [62] 270/21			
271/4 271/18 275/2			
275/18 278/7 279/22			
281/2 282/20 282/21			
284/11 284/12 285/7			
285/18 286/7 288/6			
289/8 289/9 289/16			
290/7 291/4 291/14			
292/4 292/20 293/9			
293/25 300/24 300/24			
301/6 308/13 308/14			
311/18 313/11 316/14			
316/24 317/11 317/17			
318/1 320/6 321/25			
321/25 322/23 324/12			
324/14 326/25 327/6			
328/8 328/10 328/16			
330/20 332/17 333/25			
334/19 335/1 338/24			
339/15 341/2 341/25			
344/10 347/1 350/16			
352/3			
yours [1] 190/16			
yourself [6] 76/14			
118/18 145/1 173/14			
205/24 264/6			
203/24 204/0			
Z			
zero [8] 51/2 175/24			
224/7 236/20 239/9			
258/3 258/4 259/6			
zone [1] 221/22			
zones [1] 221/21			
zoom [1] 244/3			
	I		(57)

	Page 1		Page 2
1	SECURE, ACCESSIBLE & FAIR ELECTIONS COMMISSION	1	Transcript Legend
2	STATE OF GEORGIA	2	(sic) - Exactly as said.
3		3	(phonetic) - Exact spelling unknown.
4		4	Break in speech continuity.
5		5	Indicates halting speech, unfinished sentence
6	The above-entitled SAFE Commission meeting	6	or omission of word(s) when reading.
7	was held before Mary K. McMahan, Certified Court	7	Quoted material is typed as spoken.
8	Reporter, in and for the state of Georgia, commencing	8	
9	at 9:11 a.m. on August 30, 2018, in the Columbia	9	TABLE OF CONTENTS
10	County Exhibition Center, 212 Partnership Drive,	10	PANELS: PAGE:
11	Grovetown, Georgia 30813.	11	Voting Rights Panel
12		12	Election Security Panel47
13		13	Voting Accessibility Panel84
14		14	Intergovernmental Coordination Panel116
15		15	
16		16	VENDOR DEMONSTRATIONS:
17		17	Clear Ballot144
18		18	Unisyn Voting Solutions
19		19	Smartmatic
20		20	Election Systems & Software233
21		21	Hart InterCivic
22		22	Dominion Voting
23		23	
24		24	Public Comments
25		25	Index
	Page 3		Page 4
1	Page 3 PROCEEDINGS	1	Page 4 pledge to start us off this morning.
1 2		1 2	-
	PROCEEDINGS		pledge to start us off this morning.
2	PROCEEDINGS SECRETARY KEMP: We've about got everybody	2	pledge to start us off this morning. (Pledge of allegiance)
2	PROCEEDINGS SECRETARY KEMP: We've about got everybody settled here. Let me just welcome you this	2	<pre>pledge to start us off this morning.</pre>
2 3 4	PROCEEDINGS SECRETARY KEMP: We've about got everybody settled here. Let me just welcome you this morning to our second meeting of the SAFE	2 3 4	<pre>pledge to start us off this morning.</pre>
2 3 4 5	PROCEEDINGS SECRETARY KEMP: We've about got everybody settled here. Let me just welcome you this morning to our second meeting of the SAFE Commission. I'll just note for the record that	2 3 4	pledge to start us off this morning. (Pledge of allegiance) SECRETARY KEMP: And if you'll pause with me just a minute, I'll say the invocation. (Invocation)
2 3 4 5 6	PROCEEDINGS SECRETARY KEMP: We've about got everybody settled here. Let me just welcome you this morning to our second meeting of the SAFE Commission. I'll just note for the record that it's August 30, 2018 and I want to certainly	2 3 4 5	pledge to start us off this morning. (Pledge of allegiance) SECRETARY KEMP: And if you'll pause with me just a minute, I'll say the invocation. (Invocation) SECRETARY KEMP: All right, again thank you
2 3 4 5 6 7	PROCEEDINGS SECRETARY KEMP: We've about got everybody settled here. Let me just welcome you this morning to our second meeting of the SAFE Commission. I'll just note for the record that it's August 30, 2018 and I want to certainly thank you all for being here this morning. It's	2 3 4 5 6 7	pledge to start us off this morning. (Pledge of allegiance) SECRETARY KEMP: And if you'll pause with me just a minute, I'll say the invocation. (Invocation) SECRETARY KEMP: All right, again thank you all. You can be seated. I certainly want to
2 3 4 5 6 7 8	PROCEEDINGS SECRETARY KEMP: We've about got everybody settled here. Let me just welcome you this morning to our second meeting of the SAFE Commission. I'll just note for the record that it's August 30, 2018 and I want to certainly thank you all for being here this morning. It's great to see such good turnout and involvement in	2 3 4 5 6 7 8	pledge to start us off this morning. (Pledge of allegiance) SECRETARY KEMP: And if you'll pause with me just a minute, I'll say the invocation. (Invocation) SECRETARY KEMP: All right, again thank you all. You can be seated. I certainly want to thank the commission members for their commitment
2 3 4 5 6 7 8	PROCEEDINGS SECRETARY KEMP: We've about got everybody settled here. Let me just welcome you this morning to our second meeting of the SAFE Commission. I'll just note for the record that it's August 30, 2018 and I want to certainly thank you all for being here this morning. It's great to see such good turnout and involvement in this as we work on this meeting for the Secure	2 3 4 5 6 7 8	pledge to start us off this morning. (Pledge of allegiance) SECRETARY KEMP: And if you'll pause with me just a minute, I'll say the invocation. (Invocation) SECRETARY KEMP: All right, again thank you all. You can be seated. I certainly want to thank the commission members for their commitment to serving on this panel as we move forward.
2 3 4 5 6 7 8 9	PROCEEDINGS SECRETARY KEMP: We've about got everybody settled here. Let me just welcome you this morning to our second meeting of the SAFE Commission. I'll just note for the record that it's August 30, 2018 and I want to certainly thank you all for being here this morning. It's great to see such good turnout and involvement in this as we work on this meeting for the Secure Accessible Fair Elections Commission here at the	2 3 4 5 6 7 8 9	pledge to start us off this morning. (Pledge of allegiance) SECRETARY KEMP: And if you'll pause with me just a minute, I'll say the invocation. (Invocation) SECRETARY KEMP: All right, again thank you all. You can be seated. I certainly want to thank the commission members for their commitment to serving on this panel as we move forward. Again thanks to all that helped us have the
2 3 4 5 6 7 8 9 10	PROCEEDINGS SECRETARY KEMP: We've about got everybody settled here. Let me just welcome you this morning to our second meeting of the SAFE Commission. I'll just note for the record that it's August 30, 2018 and I want to certainly thank you all for being here this morning. It's great to see such good turnout and involvement in this as we work on this meeting for the Secure Accessible Fair Elections Commission here at the Columbia County Exhibition Center in Grovetown.	2 3 4 5 6 7 8 9 10	pledge to start us off this morning. (Pledge of allegiance) SECRETARY KEMP: And if you'll pause with me just a minute, I'll say the invocation. (Invocation) SECRETARY KEMP: All right, again thank you all. You can be seated. I certainly want to thank the commission members for their commitment to serving on this panel as we move forward. Again thanks to all that helped us have the ability to be here in this great facility this
2 3 4 5 6 7 8 9 10 11	PROCEEDINGS SECRETARY KEMP: We've about got everybody settled here. Let me just welcome you this morning to our second meeting of the SAFE Commission. I'll just note for the record that it's August 30, 2018 and I want to certainly thank you all for being here this morning. It's great to see such good turnout and involvement in this as we work on this meeting for the Secure Accessible Fair Elections Commission here at the Columbia County Exhibition Center in Grovetown. And just before we do the pledge and the	2 3 4 5 6 7 8 9 10 11	pledge to start us off this morning. (Pledge of allegiance) SECRETARY KEMP: And if you'll pause with me just a minute, I'll say the invocation. (Invocation) SECRETARY KEMP: All right, again thank you all. You can be seated. I certainly want to thank the commission members for their commitment to serving on this panel as we move forward. Again thanks to all that helped us have the ability to be here in this great facility this morning. And I'm looking forward to another
2 3 4 5 6 7 8 9 10 11 12 13	PROCEEDINGS SECRETARY KEMP: We've about got everybody settled here. Let me just welcome you this morning to our second meeting of the SAFE Commission. I'll just note for the record that it's August 30, 2018 and I want to certainly thank you all for being here this morning. It's great to see such good turnout and involvement in this as we work on this meeting for the Secure Accessible Fair Elections Commission here at the Columbia County Exhibition Center in Grovetown. And just before we do the pledge and the invocation, I want to Co-chair Fleming is	2 3 4 5 6 7 8 9 10 11 12 13	pledge to start us off this morning. (Pledge of allegiance) SECRETARY KEMP: And if you'll pause with me just a minute, I'll say the invocation. (Invocation) SECRETARY KEMP: All right, again thank you all. You can be seated. I certainly want to thank the commission members for their commitment to serving on this panel as we move forward. Again thanks to all that helped us have the ability to be here in this great facility this morning. And I'm looking forward to another great meeting today as our work continues to
2 3 4 5 6 7 8 9 10 11 12 13	PROCEEDINGS SECRETARY KEMP: We've about got everybody settled here. Let me just welcome you this morning to our second meeting of the SAFE Commission. I'll just note for the record that it's August 30, 2018 and I want to certainly thank you all for being here this morning. It's great to see such good turnout and involvement in this as we work on this meeting for the Secure Accessible Fair Elections Commission here at the Columbia County Exhibition Center in Grovetown. And just before we do the pledge and the invocation, I want to Co-chair Fleming is going to speak a little bit more in detail to	2 3 4 5 6 7 8 9 10 11 12 13	pledge to start us off this morning. (Pledge of allegiance) SECRETARY KEMP: And if you'll pause with me just a minute, I'll say the invocation. (Invocation) SECRETARY KEMP: All right, again thank you all. You can be seated. I certainly want to thank the commission members for their commitment to serving on this panel as we move forward. Again thanks to all that helped us have the ability to be here in this great facility this morning. And I'm looking forward to another great meeting today as our work continues to progress. I also want to thank all of those
2 3 4 5 6 7 8 9 10 11 12 13 14 15	PROCEEDINGS SECRETARY KEMP: We've about got everybody settled here. Let me just welcome you this morning to our second meeting of the SAFE Commission. I'll just note for the record that it's August 30, 2018 and I want to certainly thank you all for being here this morning. It's great to see such good turnout and involvement in this as we work on this meeting for the Secure Accessible Fair Elections Commission here at the Columbia County Exhibition Center in Grovetown. And just before we do the pledge and the invocation, I want to Co-chair Fleming is going to speak a little bit more in detail to this, but I just want to thank all of those in	2 3 4 5 6 7 8 9 10 11 12 13 14	pledge to start us off this morning. (Pledge of allegiance) SECRETARY KEMP: And if you'll pause with me just a minute, I'll say the invocation. (Invocation) SECRETARY KEMP: All right, again thank you all. You can be seated. I certainly want to thank the commission members for their commitment to serving on this panel as we move forward. Again thanks to all that helped us have the ability to be here in this great facility this morning. And I'm looking forward to another great meeting today as our work continues to progress. I also want to thank all of those local elected officials that are here. I know we
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	PROCEEDINGS SECRETARY KEMP: We've about got everybody settled here. Let me just welcome you this morning to our second meeting of the SAFE Commission. I'll just note for the record that it's August 30, 2018 and I want to certainly thank you all for being here this morning. It's great to see such good turnout and involvement in this as we work on this meeting for the Secure Accessible Fair Elections Commission here at the Columbia County Exhibition Center in Grovetown. And just before we do the pledge and the invocation, I want to Co-chair Fleming is going to speak a little bit more in detail to this, but I just want to thank all of those in the facility Ms. Wells and others for	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	pledge to start us off this morning. (Pledge of allegiance) SECRETARY KEMP: And if you'll pause with me just a minute, I'll say the invocation. (Invocation) SECRETARY KEMP: All right, again thank you all. You can be seated. I certainly want to thank the commission members for their commitment to serving on this panel as we move forward. Again thanks to all that helped us have the ability to be here in this great facility this morning. And I'm looking forward to another great meeting today as our work continues to progress. I also want to thank all of those local elected officials that are here. I know we have many members of the legislature. If you
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	PROCEEDINGS SECRETARY KEMP: We've about got everybody settled here. Let me just welcome you this morning to our second meeting of the SAFE Commission. I'll just note for the record that it's August 30, 2018 and I want to certainly thank you all for being here this morning. It's great to see such good turnout and involvement in this as we work on this meeting for the Secure Accessible Fair Elections Commission here at the Columbia County Exhibition Center in Grovetown. And just before we do the pledge and the invocation, I want to Co-chair Fleming is going to speak a little bit more in detail to this, but I just want to thank all of those in the facility Ms. Wells and others for helping coordinate this. Certainly	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	pledge to start us off this morning. (Pledge of allegiance) SECRETARY KEMP: And if you'll pause with me just a minute, I'll say the invocation. (Invocation) SECRETARY KEMP: All right, again thank you all. You can be seated. I certainly want to thank the commission members for their commitment to serving on this panel as we move forward. Again thanks to all that helped us have the ability to be here in this great facility this morning. And I'm looking forward to another great meeting today as our work continues to progress. I also want to thank all of those local elected officials that are here. I know we have many members of the legislature. If you guys would please stand.
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	PROCEEDINGS SECRETARY KEMP: We've about got everybody settled here. Let me just welcome you this morning to our second meeting of the SAFE Commission. I'll just note for the record that it's August 30, 2018 and I want to certainly thank you all for being here this morning. It's great to see such good turnout and involvement in this as we work on this meeting for the Secure Accessible Fair Elections Commission here at the Columbia County Exhibition Center in Grovetown. And just before we do the pledge and the invocation, I want to Co-chair Fleming is going to speak a little bit more in detail to this, but I just want to thank all of those in the facility Ms. Wells and others for helping coordinate this. Certainly Representative Fleming, I know Chairman Cross is	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	pledge to start us off this morning. (Pledge of allegiance) SECRETARY KEMP: And if you'll pause with me just a minute, I'll say the invocation. (Invocation) SECRETARY KEMP: All right, again thank you all. You can be seated. I certainly want to thank the commission members for their commitment to serving on this panel as we move forward. Again thanks to all that helped us have the ability to be here in this great facility this morning. And I'm looking forward to another great meeting today as our work continues to progress. I also want to thank all of those local elected officials that are here. I know we have many members of the legislature. If you guys would please stand. Just thank you guys for being here and for
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	PROCEEDINGS SECRETARY KEMP: We've about got everybody settled here. Let me just welcome you this morning to our second meeting of the SAFE Commission. I'll just note for the record that it's August 30, 2018 and I want to certainly thank you all for being here this morning. It's great to see such good turnout and involvement in this as we work on this meeting for the Secure Accessible Fair Elections Commission here at the Columbia County Exhibition Center in Grovetown. And just before we do the pledge and the invocation, I want to Co-chair Fleming is going to speak a little bit more in detail to this, but I just want to thank all of those in the facility Ms. Wells and others for helping coordinate this. Certainly Representative Fleming, I know Chairman Cross is here this morning, several members of the	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	pledge to start us off this morning. (Pledge of allegiance) SECRETARY KEMP: And if you'll pause with me just a minute, I'll say the invocation. (Invocation) SECRETARY KEMP: All right, again thank you all. You can be seated. I certainly want to thank the commission members for their commitment to serving on this panel as we move forward. Again thanks to all that helped us have the ability to be here in this great facility this morning. And I'm looking forward to another great meeting today as our work continues to progress. I also want to thank all of those local elected officials that are here. I know we have many members of the legislature. If you guys would please stand. Just thank you guys for being here and for your involvement. We have local elected
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	PROCEEDINGS SECRETARY KEMP: We've about got everybody settled here. Let me just welcome you this morning to our second meeting of the SAFE Commission. I'll just note for the record that it's August 30, 2018 and I want to certainly thank you all for being here this morning. It's great to see such good turnout and involvement in this as we work on this meeting for the Secure Accessible Fair Elections Commission here at the Columbia County Exhibition Center in Grovetown. And just before we do the pledge and the invocation, I want to Co-chair Fleming is going to speak a little bit more in detail to this, but I just want to thank all of those in the facility Ms. Wells and others for helping coordinate this. Certainly Representative Fleming, I know Chairman Cross is here this morning, several members of the commission, a lot of public safety folks who are	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	pledge to start us off this morning. (Pledge of allegiance) SECRETARY KEMP: And if you'll pause with me just a minute, I'll say the invocation. (Invocation) SECRETARY KEMP: All right, again thank you all. You can be seated. I certainly want to thank the commission members for their commitment to serving on this panel as we move forward. Again thanks to all that helped us have the ability to be here in this great facility this morning. And I'm looking forward to another great meeting today as our work continues to progress. I also want to thank all of those local elected officials that are here. I know we have many members of the legislature. If you guys would please stand. Just thank you guys for being here and for your involvement. We have local elected officials. Would you please stand.
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21	PROCEEDINGS SECRETARY KEMP: We've about got everybody settled here. Let me just welcome you this morning to our second meeting of the SAFE Commission. I'll just note for the record that it's August 30, 2018 and I want to certainly thank you all for being here this morning. It's great to see such good turnout and involvement in this as we work on this meeting for the Secure Accessible Fair Elections Commission here at the Columbia County Exhibition Center in Grovetown. And just before we do the pledge and the invocation, I want to Co-chair Fleming is going to speak a little bit more in detail to this, but I just want to thank all of those in the facility Ms. Wells and others for helping coordinate this. Certainly Representative Fleming, I know Chairman Cross is here this morning, several members of the commission, a lot of public safety folks who are making sure that we have a good, safe meeting	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21	pledge to start us off this morning. (Pledge of allegiance) SECRETARY KEMP: And if you'll pause with me just a minute, I'll say the invocation. (Invocation) SECRETARY KEMP: All right, again thank you all. You can be seated. I certainly want to thank the commission members for their commitment to serving on this panel as we move forward. Again thanks to all that helped us have the ability to be here in this great facility this morning. And I'm looking forward to another great meeting today as our work continues to progress. I also want to thank all of those local elected officials that are here. I know we have many members of the legislature. If you guys would please stand. Just thank you guys for being here and for your involvement. We have local elected officials. Would you please stand. Doug, you guys stand up against. Local
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	PROCEEDINGS SECRETARY KEMP: We've about got everybody settled here. Let me just welcome you this morning to our second meeting of the SAFE Commission. I'll just note for the record that it's August 30, 2018 and I want to certainly thank you all for being here this morning. It's great to see such good turnout and involvement in this as we work on this meeting for the Secure Accessible Fair Elections Commission here at the Columbia County Exhibition Center in Grovetown. And just before we do the pledge and the invocation, I want to Co-chair Fleming is going to speak a little bit more in detail to this, but I just want to thank all of those in the facility Ms. Wells and others for helping coordinate this. Certainly Representative Fleming, I know Chairman Cross is here this morning, several members of the commission, a lot of public safety folks who are making sure that we have a good, safe meeting today.	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	pledge to start us off this morning. (Pledge of allegiance) SECRETARY KEMP: And if you'll pause with me just a minute, I'll say the invocation. (Invocation) SECRETARY KEMP: All right, again thank you all. You can be seated. I certainly want to thank the commission members for their commitment to serving on this panel as we move forward. Again thanks to all that helped us have the ability to be here in this great facility this morning. And I'm looking forward to another great meeting today as our work continues to progress. I also want to thank all of those local elected officials that are here. I know we have many members of the legislature. If you guys would please stand. Just thank you guys for being here and for your involvement. We have local elected officials. Would you please stand. Doug, you guys stand up against. Local elected officials. And then how about our local election
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	PROCEEDINGS SECRETARY KEMP: We've about got everybody settled here. Let me just welcome you this morning to our second meeting of the SAFE Commission. I'll just note for the record that it's August 30, 2018 and I want to certainly thank you all for being here this morning. It's great to see such good turnout and involvement in this as we work on this meeting for the Secure Accessible Fair Elections Commission here at the Columbia County Exhibition Center in Grovetown. And just before we do the pledge and the invocation, I want to Co-chair Fleming is going to speak a little bit more in detail to this, but I just want to thank all of those in the facility Ms. Wells and others for helping coordinate this. Certainly Representative Fleming, I know Chairman Cross is here this morning, several members of the commission, a lot of public safety folks who are making sure that we have a good, safe meeting today. So thank you all for your hard work.	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	pledge to start us off this morning. (Pledge of allegiance) SECRETARY KEMP: And if you'll pause with me just a minute, I'll say the invocation. (Invocation) SECRETARY KEMP: All right, again thank you all. You can be seated. I certainly want to thank the commission members for their commitment to serving on this panel as we move forward. Again thanks to all that helped us have the ability to be here in this great facility this morning. And I'm looking forward to another great meeting today as our work continues to progress. I also want to thank all of those local elected officials that are here. I know we have many members of the legislature. If you guys would please stand. Just thank you guys for being here and for your involvement. We have local elected officials. Would you please stand. Doug, you guys stand up against. Local elected officials.

Page 5 Page 6 1 election level. Any of you guys here if you'll 1 be moderating the voting rights panel. 2 2 please stand. Thank you so much for what you do Dr. Wenke Lee, the co-executive director of 3 every day and for all the others that are 3 the Georgia Tech Institute for Information 4 representing different constituencies and groups 4 Security and Privacy will moderate our 5 from around the state. 5 security -- election security panel. 6 I think if you took anything away from our 6 Amy Howell, the assistant commissioner and 7 last meeting, we had a very inclusive group. We 7 general counsel for the Department of Behavioral 8 want to hear from everyone as we move through the 8 Health and Developmental Disabilities will 9 process. I know that we have people here from moderate the voting accessibility panel. 10 the Georgia Municipal Association. 10 And then Nancy Boren who's the Muscogee 11 Larry, thank you for being here. 11 County Director of Elections and Voter 12 I'm fairly certain we have folks from the 12 Registration will moderate the intergovernmental 13 Association of County Commissioners of Georgia 13 coordination panel. 14 that are here. There's Todd in the back. 14 You will see that we have a great lineup, 15 So thank you guys for being here and we will 15 truly impressive folks talking about important 16 continue to move forward. 16 subject matters. And we appreciate all of you 17 This session that we're going to have this 17 that have joined us for this today. 18 morning will be composed of four panels on voting 18 Now, our afternoon session has been 19 rights, election security, voting accessibility, 19 well-noted. We're going to hear from the 2.0 and intergovernmental coordination to discuss the 2.0 following vendors which is Clear Ballot, Unisyn 21 21 vital considerations in play as we move forward Voting Solutions, Smartmatic, Election Systems & 22 on the replacement of our voting system. 22 Software, Hart InterCivic, and Dominion Voting. 23 My co-chair Representative Fleming, we thank 23 We certainly look forward to their presentations 24 you again, Representative, for your dedication to 24 and appreciate you all making your way to the 25 25 co-chairing this and for all your work. He will meeting this morning. Page 7 Page 8 1 And now I'm going to turn it over to 1 is our second meeting, as the secretary said. 2 Representative Fleming and he will offer some 2 We've got a full lineup today. I'm going to ask 3 guidelines and logistics on the rest of the 3 you that when you speak today -- and there will meeting today. And thank you all again for being 4 4 be, of course, many opportunities for that --5 5 here. that the microphones that are on the table. When REPRESENTATIVE FLEMING: Good morning. you see that green light on, that's a hot mic. 6 6 AUDIENCE: Good morning. 7 7 So if you don't want it to be green, then you REPRESENTATIVE FLEMING: Thank you, 8 8 press it and it'll turn off and you won't see any 9 Mr. Secretary. q light. So remember that, but if you bring it to 10 As Secretary Kemp mentioned, this beautiful 10 you, make sure it's green so that we can hear 11 facility was made available to us free of charge 11 vou. 12 by my county commission. 12 We will have four panels this morning. 13 And he also mentioned my chairman Brian 13 There will be portions of that where you as 14 Cross is here with a couple of his fellow commission members will be allowed to ask 15 commissioners: Trey Allen and our incoming 1.5 questions, and we encourage you to do that, as 16 chairman in January Doug Duncan. We certainly do 16 well as vendors this afternoon. They're going to 17 appreciate all of the work that they did in 17 show us their wares. 18 helping us set this up today. It's invaluable to 18 I will mention also that at the conclusion 19 us. 19 of our meeting today, there will be a portion for 2.0 My sheriff also, Clay Whittle, he has been 20 public comment. We will be circulating during 21 invaluable in helping to set up all of the 21 the day sign-up sheets. I see one moving around 2.2 details for today's event. I want to publicly 2.2 right over here so please feel free to sign up as 2.3 23 thank him as well. we will take public comment, two minutes each 24 Just some housekeeping measures. Commission 24 person, towards the end of our session today. 25 members, thank y'all all for coming over. This 25 Of course, before we launch into each panel

2.0

2.2

session today, we will provide a brief introduction of those participants that are in the panel process. Because there is a public comment portion to our meeting today, I would certainly welcome our public that is here, but I would ask you if you would hold your comments until that point. I think we have a good, civil crowd here today, so that's not going to be a problem.

Just some other little housekeeping measures, some of you may have noticed this when you came in, but there are restroom facilities right outside these two double doors. There is another hall on the other side behind you there with more restroom facilities in case these are full.

So with that in mind, thank you for being here today. We're going to get right to it. I'm going to ask the first members of our panel if they would come forward in these chairs right in front of me. I will introduce you and we'll switch to that mic over there and then we can start.

I also think I failed to mention, but I want to make sure that I do, we have a court reporter

here with us this morning who is taking down all of these proceedings. As you know, when two people talk at once, it's hard for you to understand. Can you imagine the court reporter trying to take down everything that's said? I've told y'all before that my dear wife is a court reporter and I have been trained not to talk over somebody else -- at least I think I've been trained -- when the court reporter is taking down what we've said. So if during the day, I mention that to you or remind you, I know that not everybody is not as used to being in a legal proceeding where everything is being taken down, but I'll certainly try and keep it straight so we have a good public record of all of the things that are said here today.

Page 10

Page 12

At this point, it is my pleasure to introduce our panelists for our first group to speak this morning, and as mentioned to our members of the commission, as we work through this, if you have a burning question just raise your hand up there, and I'll try to recognize you. And of course, as we moved through toward the end, we'll also try to make sure there's time for any questions for you.

Page 11

Page 9

2.0

1.5

2.0

2.2

2.3

The purpose of this panel is to provide information to the commission from a diverse group of experts in the field of voting rights as to what we should be considering regarding voting rights' perspective as we formulate a recommendation for our next voting system here in Georgia. This will also allow our commission members to be formulating questions they want to ask the vendors this afternoon when we have our demonstrations.

The panel today, this morning, is not meant to be a survey of the entire landscape of voting right issues. That's a big area. However, it is meant to be focused on the issues that are relevant to the work of this commission, which are really the ones that take place from the time the voter shows up to vote to the time he or she casts their ballot. And we have a distinguished group of panelists to take us through some of those issues this morning.

I'll introduce each of you, allow you to say a few introductory remarks, and I will ask some follow-up questions with the idea of getting our panelists to engage one another, and then we'll allow the commission members also to ask

questions.

First, to my far left, your far right, Sean Young with the ACLU. Sean is the legal director of the ACLU in Georgia. He's been actively involved in litigating cases around the country, challenging voter discrimination, identification requirements, cutbacks to early voting and same—day registration, and other attempts to make it harder to vote.

Prior to joining the ACLU, he was a judicial law clerk in the US Court of Appeals for the Seventh Circuit, and the US District Court for the Southern District of New York. He also served as associate to Skadden, Arps, Slate, Meagher & Flom LLP where he litigated a variety of pro-bono matters involving civil rights, fair housing, and racial justice issues.

He has published articles in the Yale

Journal of Health Policy, Law and Ethics and the
Florida Coastal Law Review. Sean is a graduate
of Yale Law School and Duke University.

Sean, welcome, and tell us a little bit about what's on your mind.

MR. YOUNG: Sure.

Members of the state commission, thank you

Page 13 Page 14 1 so much for giving the ACLU of Georgia an 1 catch such errors is one that requires voters to 2 2 run their paper ballots through a scanner that opportunity to speak about the impact of voting 3 systems on voting rights this morning. We're 3 will spit it back out if there are errors, which 4 especially dedicated to ensuring that voters from 4 will then allow you to cast a fresh ballot. vulnerable populations and historically I was a poll worker in New York in a past 5 6 disenfranchised communities, like communities of 6 life and that's the system they had. And it's color, are able to participate in our democracy. 7 unfortunate to say, but there were a number of 8 The manner of voting, of course, can have a 8 folks that came back to me needing to cast such direct impact on that participation. ballots. Partly that was because the New York 10 So for that reason the ACLU of Georgia would 10 ballot design was a nightmare, and I hope Georgia 11 love to make three concrete recommendations 11 doesn't repeat that. But we did see a fair 12 concerning any anticipated move to a paper ballot 12 number of errors. It's really important to have 13 system. 13 that safeguard. 14 The first is catching errors. Transitioning 14 The second recommendation is that 15 to a paper ballet system increases the rate of 15 transparency and open-source software. Now, I 16 voter error. I would venture to say that's 16 imagine this recommendation is not going to be 17 pretty understated. So there must be a system of 17 very popular with our vendors, but election 18 automatically catching those errors before the 18 systems should not be a black box. That means 19 ballot is cast. The most common error, as most 19 that whatever system is adopted by the 2.0 of you've heard about in the last session, is 2.0 commission, any source code that's involved and 21 21 overvoting, when a voter votes for more than one any electronic counting procedure should be 22 candidate in an office that can only have one 22 open-source and not proprietary. It shouldn't be 23 candidate. The commission is well aware that 23 a trade secret which means that the public should 24 this problem was rampant through the 2000 24 have the ability to inspect it. 25 25 elections. One example of a system that can Any kind of voting system, whether Page 15 Page 16 1 electronic or paper-based, must be transparent in existence of and increase state-level funding for 2 order to determine whether a procedure that seems the increased number of check-in stations and 3 to be facially neutral on its face may actually 3 polling places that are necessary to accommodate 4 violate the Voting Rights Act or other laws by Δ this transition. This assures that voter access 5 having a disserted act of vulnerable computer 5 isn't left to the whims of a hundred and fifty-nine different counties, which would be 6 needs. And I don't think anyone in this room 6 7 wants to wait until litigation in order for that 7 terribly unfair to rural communities in 8 black box to have to be opened. If it's opened 8 particular who may be budget-strapped. q up-front, that would resolve a lot of issues. q And so in sum, the ACLU Georgia recommends 10 The last recommendation is increased access. 10 that any transition to a paper balloting system, 11 11 To switch to a paper ballot system, we think you including a system for catching voter errors, 12 have to increase the number of check-in stations, 12 increase number of voting stations or polling 13 of voting stations, and perhaps even polling 13 places and transparent and open-source software. 14 places because there will be guaranteed longer 14 Implementing these measures will help ensure that 15 lines at the polls when voters need to recast 1.5 the most vulnerable and historically disenfranchised among us can fully participate in 16 erroneous ballots and especially in the short 16 17 term as coworkers and voters adjust to the new 17 our democracy. 18 system. Longer lines almost invariably 18 REPRESENTATIVE FLEMING: Thank you, Sean. 19 disproportionately impact lower-income 19 Next on our panel, I have the pleasure of 20 communities because many do not have the flexible 2.0 introducing Elizabeth McNamara of the League of 21 working schedules or childcare arrangements 21 Women Voters. Elizabeth is the immediate past 2.2 necessary to wait any longer than 30 minutes to 2.2 president of the League of Women Voters. She 23 cast a ballot. 23 joined the League of Women Voters in 1983 and has

24

25

And to that end, we strongly urge the state

commission to also recommend increase -- or the

24

25

served in some leadership roles at the local,

state, and national levels including president of

25

results. We support a system that treats all

voters equally, providing for voters with

Page 17 Page 18 1 the League of Women Voters of DeKalb County, 1 by the women who fought so hard for voting rights 2 2 president of the League of Women Voters of for women. 3 Georgia, and from 2010 to 2016 was president of 3 Since 1920, we've been defending our 4 the national league. During her tenure as 4 democracy by empowering voters so that everyone 5 national president of the League of Women Voters, 5 has the right, the desire, the knowledge, the 6 engaged in national campaigns to protect and 6 confidence to participate. And of course the 7 empower the vote of every American eligible to 7 most important way, there is no more important 8 vote. 8 way for Georgia citizens to participate than by 9 Professionally, Elizabeth is an attorney in 9 voting. 10 the state of Georgia. She received her 10 The League of Women Voters has been actively 11 bachelor's and juris doctorate degree from Emory 11 engaged with elected officials and with election 12 University in Atlanta. She serves as a fellow --12 officials at every level of government to ensure 13 she served as a fellow prosecutor in DeKalb 13 that our election systems are free, fair, and 14 County, Georgia from 1986 to 2010. 14 accessible to every eligible voter. And we've 15 Since 2004, Elizabeth has volunteered with 15 done that throughout the country and throughout 16 the Georgia High School Mock Trial Program as an 16 our history. 17 attorney coach at her local public high school. 17 The league helped draft the Help America 18 Elizabeth, great to have you this morning. 18 Vote Act in 2002. The League, I want to mention 19 We appreciate you being here. We'd love to hear 19 also, was actively involved in the passage of the 2.0 20 National Voter Registration Act in the early from you. 21 21 MS. MCNAMARA: Thank you. Well, thank you 1990's and of course it supported the Voting 22 for including the League of Women Voters on this 22 Rights Act as well, particularly recently with 23 particular voting rights panel. For any of you 23 all of the changes the courts have made to that 24 24 particular piece of legislation. In 2002, we who are not familiar with the league, the League 25 25 of Women Voters was founded nearly 100 years ago worked closely with civil rights coalitions in Page 19 Page 20 1 developing amendments and lobbying for key 1 disabilities, and ensuring language accessibility 2 positions. 2 and while ensuring the privacy of each voter's 3 We continue to support the Election 3 ballot. Protecting voting rights at the polls 4 Assistance Commission. We appreciate their 4 means protecting voter access and ensuring that 5 5 standard best practices and the fact that they're every vote counts. 6 sharing election administrators around the 6 A voting system is about more than simply 7 country, which we think is extremely important. 7 the device upon which we cast our ballots, and 8 The League of Women Voters of Georgia was 8 ensuring equal access and accurate results is q actively involved when the current voting system q about more than what voters experience at the 10 was designed and created. Our members work 10 polling location. The league is focused on the 11 closely with election officials in every election 11 entire system and so it's not prepared to be too 12 and many of our members serve as poll workers. 12 prescriptive as to what technology is employed in 13 So we are intimately familiar with the current 13 the new system so long as it is secure, accurate, 14 system in Georgia, how it works, and we have 14 recountable, accessible, and transparent. 15 supported that system since it was implemented 1.5 Creating a system that significantly limits 16 16 years ago. 16 our options moving forward simply for the sake of 17 The league supports an election system that 17 creating a voter-verified paper ballot strikes us 18 is secure, accurate, recountable, accessible, and 18 as dangerous and the Georgia league does not 19 transparent. For that reason, we support a 19 support such a move. 20 system that doesn't include voters verifying 2.0 The league also supports a voting system 21 paper ballots. 21 that is uniform throughout the state and funded 2.2 We support risk-limiting audits using 2.2 by the state. We see this as a matter of 23 statistical principles to certify election 23 protecting voting rights by protecting voter

24

25

access and ensuring accuracy. Uniform

procedures, protocols, and trainings are critical

Page 21 Page 22 1 to protecting the vote. 1 she was the managing editor of the Georgia State 2 2 Law Review. So I want to thank you for this opportunity 3 and look forward to the discussion this morning. 3 I always wish that I was smart enough to be 4 REPRESENTATIVE FLEMING: Thank you, 4 a lawyer, Anne, so it's good to sit next to you 5 Elizabeth. We appreciate that. 5 up here anyway. But we appreciate you being with 6 Our next panel member that I have the 6 us today and we'd love to hear from you. 7 pleasure of introducing is Anne Lewis with the 7 MS. LEWIS: From here? 8 law firm of Strickland, Brockington, and Lewis. 8 REPRESENTATIVE FLEMING: Well, will that one 9 Anne is a partner of the Atlanta law firm I just 9 stretch? 10 mentioned. Her practice involves 10 MS. LEWIS: Yes. 11 election-related litigation including 11 REPRESENTATIVE FLEMING: When you get 12 redistricting, Voting Rights Act cases, election 12 elected to office, they teach you to hog the mic 13 contests, and candidate qualifying challenges. 13 if possible and I want to make sure I can do 14 She has served as counsel in elections to the 14 that. There we go. Thank you. 15 Georgia general assembly and as a special 1.5 MS. LEWIS: Well, thank you for having me 16 attorney general for the state of Georgia in 16 today. I want to say -- just a point of personal 17 election litigation. She is the general counsel 17 privilege at the beginning, I want to thank my 18 to the Georgia Republican Party, President of the 18 sister Mary who, for a variety of circumstances, 19 Atlanta Lawyers Chapter of the Federalist 19 had to serve as my chauffeur today. So thank you 2.0 Society, a member of the State Bar of Georgia's 2.0 to Mary for being here and she's here to learn a 21 21 Indigent Defense Committee and Post-conviction lot about the voting system too. Relief Committee. 22 22 As I look around at the commission, it's 23 She received her undergraduate degree from 23 certainly a great group of people with a lot of 24 the University of Georgia -- go Dawgs -- and her 24 knowledge. I'm looking at Lynn Bailey who for 25 25 law degree from Georgia State University where many years has been my go-to person about my very Page 23 Page 24 1 weird questions about: Okay, what do you do the instances of minority vote dilution, which is 2 about this? I think something came up about this 2 really the focus of the Voting Rights Act now 3 about 20 years ago. And Lynn always says: Oh, 3 does not come up as much as an issue related to 4 yeah, yeah, you know what that was. That was a 4 districting, maybe particular voting laws, but I want to talk a little bit more about the small ${\tt V}$ 5 particular precinct. 5 and small R, Voting Rights. 6 So I appreciate all of the help I've gotten 6 7 from you over the years. If you look at our 7 Like I said, I think that any voting system 8 backgrounds, you might think that we have a lot 8 that you consider has to consider from the 9 of differences, and maybe we do philosophically, 9 beginning to the middle to the end. And what the 10 but I think with respect to lawyers who practice 10 overarching purpose is is to make sure that 11 in a voting arena, we all are dedicated to one 11 people get to vote and that their vote is cast 12 purpose which is that every eligible voter gets 12 correctly, and frankly that they are confident 13 to vote and it's not hard to vote, it's not hard 13 that that happens. 14 to get on the list to vote, and if you have a You may be surprised to hear a lawyer say: 15 problem, it's not hard to figure out how to 1.5 But the object here is collaboration. It's not litigation because litigation evolves from issues 16 resolve the problem. 16 17 When we started talking about this panel, we 17 like: Did we think about this before we 18 were originally talking about voting rights and 18 installed this voting machine or did we think 19 so all of you are familiar with the capital VR, 19 about this before we changed this voting law? I 20 Voting Rights Act which generally speaking 2.0 mean, everybody's paying for it. You're paying 21 involves Section 2, minority vote dilution, and 21 on both sides of the ledger. Somebody has to pay 2.2 for a long time involved Section 5, the 2.2 the state and probably outside lawyers to defend 23 preclearance provision. We're not really talking 23 the law. If the plaintiffs win, then plaintiffs 24 so much about that today. 24 get their attorneys' fees, and as the secretary 25 I think with respect to the voting machines, 2.5 of state is well aware, he's the lucky winner

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

2.0

21

22

23

24

25

1

2

3

4

5

6

7

8

q

10

11

12

13

14

15

16

17

18

19

20

21

2.2

23

24

25

being named as the defendant in every case and having to come up with the money to resolve litigation. And so I think that what we want to see is a system that (a) is going to be a system that

contemplates what is the registration mechanism. We have a great voter registration system in Georgia. We're not looking to change the voter registration system but you have to have the electronic polls books, which is garbage in, garbage out, right? We have to make sure that what goes in is actually who's supposed to be voting. And then when people come in, they need to show up on the list. If they don't show up on the list, they need to know what to do about that so that whether you pick to vote absentee, early, or at the polls, when you get there, it's not a problem for you to vote so long as you're eligible to vote.

I think that any voting system has to consider how do we troubleshoot on the spot. I know when we first installed the voting machines back in 2002 -- and some of you may remember this -- the biggest complaint on that election day was: I voted for Sonny Perdue and the

Page 25

1

2

3

4

6

8

10

11

12

13

14

15

16

17

18

19

2.0

21

22

23

24

25

3

Δ

5

6

7

8

9

10

11

12

13

1.5

16

17

18

19

2.0

21

2.2

2.3

24

25

machine said I voted for Roy Barnes. Or I voted for Roy Barnes and the machine said I voted for Sonny Perdue. Well, there's no way to sort of go back and figure out what happened there. So a lot of it is training for voters to not leave the machine. Until there is a resolution, I think any system is going to have to contemplate what is it that we do with problems.

Page 26

And then finally, at the end of the process, if there is a problem -- so a big problem is a recount on contests. A smaller problem is something that doesn't rise to that level but is going to have to be followed up on. What system is going to allow us to go back and find out -and along the lines of what Sean was talking about, what is it, how do we -- do we understand how the system works so that when you have to go back and find the evidence, do we know how to get that and are we confident that we're getting everything that we need?

I wanted to address real quick something that Sean said. I think that, yes, you do want to make sure that any system adequately "staffs," for a lack of a better word, the precinct. Well, we also have to live within our means. I mean,

Page 27

we have to have a system that works, but it may not be the most expensive system that has the most bells and whistles. And I'm not trying to, you know, disparage anybody's system out there that might have every bell and whistle, but I do think that that has to be a consideration when the state is thinking of spending so much money on something new. And I agree -- I think everybody agrees it's time for something new.

REPRESENTATIVE FLEMING: Thank you, Anne. And I want to go ahead and mention -- or start us off by talking about -- I think Sean mentioned this and so did Anne. When we think about voting machines, our mind immediately goes to particular laypersons that don't deal with elections every day: How do I touch that thing and how does it record my vote?

But there's something very important that happens before that. The voter shows up at the polls and they have to be allowed the privilege of going into it and touching that machine because that's where they're registered. And in my polling precinct, the ladies that sit there tell me whether or not I'm registered and in the right place.

Page 28

MS. LEWIS: Poll book.

REPRESENTATIVE FLEMING: Poll book. Talk about that for a second and we'll pass the mic around, the part of the machinery, the system we're buying -- because you have to make sure when people arrive there, it's been set up well so that we can tell them that they're in the right place. Anne?

So this -- you called it a poll --

MS. LEWIS: So for those of you who have been, you know, working in or being voters for a long time, like me -- I mean, originally the books were kind of giant things that were delivered to the precincts probably the night before the election had happened, everyone that was eligible to vote -- or whoever was listed as a registered voter in that precinct and if there were any problems that were noted in some sort of room.

And now we have the -- as you will recognize, when you go in and vote, your driver's license is scanned in. And so the book is now electronic. But we were talking when we were talking about this panel about how do we -because I think for so long we sort of thought

vote is going to be counted because how the

Page 29 Page 30 1 about, okay, well, that's one part of the system, 1 understands that we're talking about redesigning 2 then the voting machine's another part of the 2 a voting system and that that system has to 3 system, and the counting is another part of the 3 include considerations on the voter registration 4 system, and it really has to all work together. 4 system. 5 So as Barry said, when you go in, you're The league supports an online voter 6 eligible to vote there, your name does appear on 6 registration system. In this day and age, we're 7 the list -- and if it doesn't appear on the list, 7 talking about eliminating human error. The best 8 then how are we going to fix that quickly so that 8 way to do that is to have the voter enter in 9 (a) your time doesn't run out before the day is their own data and eliminate transcription 10 over or (b) you just don't get so frustrated that 10 errors. We'd also have the ability to 11 you just leave. 11 communicate with the secretary of state's office 12 REPRESENTATIVE FLEMING: Any other comments 12 because when we were resolving problems out of 13 or any of the others want to respond to that 13 those big books and we had to get on the phone 14 issue? The poll book that would make sure that 14 and the frustrations with having to get through 15 when they walk in to vote in the system, it says: 15 voters waiting absolutely has to be avoided. 16 We know you're in the right place. 16 So how you, you know -- securing that voter 17 MS. MCNAMARA: Yeah, absolutely. And, you 17 registration system which needs to remain online, 18 know, I realize that the -- I think we all 18 it needs to be $\ensuremath{\text{--}}$ it needs to communicate with 19 realize that the voter registration system is not 19 all polling systems, it has got to be part of the 2.0 necessarily within the commission's purview, but 2.0 design of the system and understanding how that's 21 21 nevertheless it has to work with whatever system going to work at polling locations. REPRESENTATIVE FLEMING: Sean, if we get to 22 gets designed. And I think perhaps the focus 22 23 that we keep talking about is the design of the 23 the point -- and you commented on that and I want 24 24 voting machines. you to touch on this also. If one walks into the 25 25 Really I think everybody on the commission polling site and, for whatever reason, you're not Page 31 Page 32 1 in the poll book and they can't tell you where 1 registrar is to determine on the back end whether 2 else to go, we have something in Georgia we call 2 you're really a registered voter is, frankly, 3 a provisional ballot. And that means that you 3 from experience, a kind of ad-hoc process. I may 4 get to vote and then you can come back later and 4 be wrong and I don't mean to -- I haven't 5 5 straighten it out for three days. Touch on that surveyed all hundred and fifty-nine counties and as well --6 6 I'm not saying there's a better way because it is 7 MR. YOUNG: Yeah. 7 kind of an ad-hoc issue. REPRESENTATIVE FLEMING: -- and what the new 8 8 And so really making sure that people who 9 system might entail or keep the same about the 9 register to vote actually show up on the polling 10 provisional ballot. 10 book, accounting for potential discrepancies in, 11 MR. YOUNG: That's exactly where I was 11 you know, someone putting drive instead of avenue 12 headed. Provisional ballots -- and they have 12 or accounting for that small margin of error is 13 some version of this in every state, the 13 so critically important because otherwise you 14 principal reason for the use is if your name 14 result in provisional ballots, and I know that 15 doesn't appear in the poll book when you show up 1.5 Georgia has one of the fewest rates of 16 to vote. 16 provisional balloting in the country and it would 17 As you think about what system you're going 17 be great to keep it that way. REPRESENTATIVE FLEMING: So, Sean, this 18 to design, I wanted you to have the 18 19 provisional-ballot fear linger over your heads 19 whole idea of provisional ballots is kind of like 20 because no one likes them. They're confusing. 2.0 a floatation device on the airplane seat that you 21 They reduce voter confidence. Poll workers don't 21 hope you never have to use --2.2 like dealing with them, election officials don't 2.2 MR. YOUNG: Yeah. 2.3 23 like dealing with them. They're confusing. REPRESENTATIVE FLEMING: -- but it's there 24 They -- there's very little confidence that your 24 for emergencies and if you ever have to use it,

2.5

people have a hard time with it sometimes, but we

Page 33 Page 34 1 have to figure out how to work through that, 1 officials as they determine that? I guess you 2 2 right? could if you wanted to, but there are specific 3 ${\tt MR. YOUNG:} \ {\tt Absolutely.}$ 3 instances we know why they will or will not REPRESENTATIVE FLEMING: Let's talk about 4 count. So I would not be for having fewer 4 something that needs more time for people to work provisional -- I agree with Sean. We don't have 5 a lot of provisional ballots, but I think that 6 out a problem and it's becoming more popular in 6 7 the state when you look at the numbers and that's 7 safety measure is always needed. 8 early voting. 8 So back to your question about early voting 9 So right now -- and then, Anne, talk about 9 versus absentee voting. So, you know, when we 10 this for a second -- when I walk into the voting 10 first started early voting, we had a constrained 11 booth, I vote on a touchscreen. When I walk in 11 period and we opened it up more. Then we found 12 to early vote, I think I can do the same thing 12 out, hey, look, people are not coming. We are 13 unless I ask for an absentee ballot. Our new 13 having these for six weeks and they're not 14 system is going to have to take into account both 14 showing up. And we haven't found that the 15 of those things: absentee ballots and early 15 overall voter turnout has increased because of 16 votes. What are your thoughts about that? 16 the early voting. I think people who are going MS. LEWIS: Well -- and real quick before I 17 17 to vote, they either decide they're going to go 18 answer that, I want to say that I am a proponent 18 to the polling place on election day or they're 19 of provisional ballots because I do think that 19 going to early vote, but I don't think people 2.0 you shouldn't -- the answer should not be that 2.0 say: Oh, now I can early vote, I guess I'll vote 21 21 you don't get to vote. There should be some when I used to not vote. 22 way -- and in Georgia, it is very transparent. 22 So in terms of deciding, which way do you 23 You can see what was voted as a provisional 23 want to do it? So do you want to -- you decide: 24 ballot and what was counted. 24 I want to vote at home, I want to be able to look 25 25 Now, can you sit there with the election on the computer and spend 25 hours researching Page 35 Page 36 1 all the candidates before I cast my ballot. Well 1 up. I'm getting close to the end of our 2 then you want to mail in an absentee ballot, 2 discussion, but you said, and I think that was 3 saying you can do that. You want to just make 3 very good, in residual votes. Explain that in a 4 sure you vote and don't miss election day because Δ little more detail and tell us why the current 5 5 work or something requires you to be out of town system we have has been good at keeping that low. on that Tuesday, then you're going to go and --6 6 MR. YOUNG: Residual votes, at least the way 7 and I always get this wrong. I think the period, 7 I understand them, are votes that don't end up 8 8 the one week before is called advance voting and being counted because there's an error. Usually, 9 maybe the two weeks before are called early q again, overvoting, someone voting for more than 10 voting, but in any event, you can vote on the 10 one candidate or just otherwise marking the 11 machine for three weeks before the election. 11 ballot in a way that can't be logically correct. 12 So that's just like being in the polling 12 Georgia has had a low rate because of its 13 place or you can go to the polling place. I 13 electronic voting system, because the machine 14 think a lot of people have found that: Oh, I'll 14 automatically will not let -- it just will not 15 just go to the polling place because there's 1.5 let you cast a ballot that is logically inconsistent. 16 nobody there. 16 17 REPRESENTATIVE FLEMING: And whatever kind 17 REPRESENTATIVE FLEMING: In other words, if 18 of system we adopt, we would have to account for 18 you try to vote for two people for the same 19 those two things. Well, really three things: 19 office --20 The provisional vote, then we have now the early 2.0 MR. YOUNG: Right. 21 voting, and the absentee voting. 21 REPRESENTATIVE FLEMING: -- it will revert 2.2 Sean, you may have touched on this 2.2 that to you and make you correct it before you 23 earlier -- and I don't know, maybe it was 23 finish. Elizabeth -- you talked about Georgia has very 24 24 MR. YOUNG: Exactly. And it's so important 25 low residual votes. And we're about to wrap this 2.5 to keep it that way, and that was our first

question.

Page 37 Page 38 1 recommendation, which if is there is a way, if 1 voter is now going to have to go through the 2 you're moving to paper, to still do it by running 2 process again and that, you know -- so 3 it through some kind of scanning machine that can 3 convenience to the voter, there are obviously 4 automatically catch that there's inconsistencies new -- technology has now caught up with the need 4 5 and then they can spoil the ballot and get a new 5 to have a voter-verified paper ballot that 6 one and do it again. 6 doesn't necessarily require another human being 7 REPRESENTATIVE FLEMING: When you contrast 7 to have to mark that. And human error has of 8 that to some of the other systems, when you 8 course been one of the largest issues in any 9 paper-ballot vote, you can actually mark two 9 election system all the way along. 10 people for the same thing and spoil your vote, or 10 And so -- from the least point of view, just 11 if you have a punch system, you can punch two 11 remember and, you know, just bear in mind that 12 people for the same ballot. With our current 12 making it as -- you know, in making sure that the 13 system, you don't have that, correct? 13 vote counts and that we do have as few 14 MR. YOUNG: That's correct. 14 provisional ballots as possible is the technology 15 REPRESENTATIVE FLEMING: Elizabeth? 15 is there and it would be dangerous, I think, in 16 MS. MCNAMARA: Yeah. Georgia's rate of 16 our opinion, to ignore that technology simply for 17 overvoting and undervoting is something to 17 the sake of making people feel better at the 18 be very, very proud of. The machines have 18 polls because they can touch that ballot and mark 19 certainly made it a lot easier for us to 19 it themselves. REPRESENTATIVE FLEMING: As we get ready to accomplish that. 20 2.0 I do want to, however, point out that, you 21 21 wrap this up, Anne, I'm going to go ahead and 22 know, when we're talking about pen and paper, 22 I'll let you comment on that. But I'm going to 23 human-marked paper ballots, no matter how you set 23 give each of you about a minute after Anne 24 24 speaks. And we'll start with Sean to give us a those machines, you know, you catch an error 25 25 there at the polling location, nevertheless that closing while we get ready to move the next panel Page 39 Page 40 1 1 Jimmy? I'll repeat it. Go ahead and say it in. 2 MS. LEWIS: I just wanted to make one 2 because I have a mic. 3 comment about overvotes and undervotes. I think 3 MR. MCDONALD: No, just when they're done, 4 the biggest risk of an overvote is a paper ballot 4 just to go over some things, I do have a question 5 5 because the machine is not going to let you vote before we let them go and it might not be --6 for two people for the same office. And while, 6 REPRESENTATIVE FLEMING: Well, ask it now. 7 yes, you could have a system where a voter scans 7 MR. MCDONALD: Well, since we have the three in his or her paper ballot and it spits it back 8 8 here, it's not exactly in the scope of what we've 9 out and then you have to vote again, I would say 9 been discussing, which has been very informative, 10 I think people would lose patience with that. 10 but I was wondering if you could speak a little 11 But the overvote issue really is only an 11 bit to -- is there a legal standard regarding the 12 issue on the paper ballots. The undervote issue 12 language in which ballots are made available and 13 I would suggest is not an issue. You have the 13 is that something that is maybe not currently 14 right to vote for governor but decide you don't 14 right, but can anticipate being right, and, if 15 want to vote for county commissioner -- no 1.5 so, is that something that should be considered 16 offense to any county commissioners, but you have 16 when we're looking at machines regarding the 17 just the right to do that. 17 flexibility of the machine or anything happens 18 An undervote doesn't really tell you 18 with respect to being able to have access to a 19 anything. It tell you that there were more votes 19 ballot that might be in a different language or 20 cast in this election than there were in the same 20 something? 21 election but for a different position. So I 21 REPRESENTATIVE FLEMING: Here's how we're 2.2 don't really think that undervote has anything to 2.2 going to handle that question. Sean, I want the 23 do with that particular issue. 23 mic to go down to you and I'm going to let you REPRESENTATIVE FLEMING: We have one 24 24 answer that and also give us your closing

25

comments as we move on to the next panel. Go

24

25

pen-and-paper ballot would be problem, it could

language accessibility issues that are coming up,

actually impair their secret vote. And the

Page 41 Page 42 1 ahead. 1 before in anticipation of their county meeting 2 2 the threshold. Good question, Jimmy. 3 MR. YOUNG: It's a great question. Just 3 So great question, great thing to keep in 4 briefly, there's a formula that the census is in 4 mind. 5 charge of applying. If a county has -- and Just briefly, for my closing remarks I just 6 I'm shortening this. If a county has 5 percent 6 want to say it's true that the -- Anne's right 7 of its population that's primarily non-English 7 that the Voting Rights Act cases specifically 8 speaking and it's literacy rate is under a 8 involve voting dilution which is not an issue in 9 certain threshold, they are put in the category 9 this case. But there have been Voting Rights Act 10 of counties that must provide ballots in that 10 challenges to voting machines, I think, in Ohio 11 language. 11 in particular when you have systems that have 12 Right now Gwinnett County is the only county 12 disparate impacts on lower income or communities 13 in the state that has been certified as being 13 of color, and then there's a link somehow to 14 required to provide Spanish-language ballots and 14 socioeconomic discrimination. That is a 15 all voting materials. We would also certainly 15 violation of the Voting Rights Act. 16 contend actually that US citizens from Puerto 16 Georgia now -- the good thing about Georgia 17 Rico are also entitled to a Spanish-language 17 is that it has a uniform system throughout all 18 ballot under a much lesser know provision of the 18 counties which not all states do. And that's 19 Voting Rights Act, and so that's the brief answer 19 wonderful. I think everyone in this room, I 2.0 2.0 to your question. would just guess, agrees that that's a great 21 21 But I know that counties that are system. That already eliminates a lot of 22 anticipating reaching that threshold soon are 22 problems of disparate counting and whatnot. But 23 already making preparations. Hall County has 23 that still is something to keep in mind as you 24 done a great job. They hired an elections 24 pick a machine and pick some kind of system that 25 25 director that has done Spanish-language ballots you want to make sure it doesn't have a Page 43 Page 44 1 discriminatory impact. all of which the technology is available as I 2 2 REPRESENTATIVE FLEMING: Thank you, Sean. understand it, to make that happen and preserve 3 Elizabeth? 3 what's good about Georgia's system and move us MS. MCNAMARA: Well, again, thank you for 4 4 forward in the ways that we need to move forward. 5 having us. And thank you for considering the 5 Keeping the voter in mind is always the most 6 rights of voters. Obviously voting is about 6 important aspect of this. 7 voters. From the beginning, the middle, and the 7 REPRESENTATIVE FLEMING: Thank you. 8 end, it's about our ability to cast ballots. We 8 Now, Anne? q do a good job here in Georgia under the current q MS. LEWIS: Well, thank you very much for 10 system. We need to replace that system and in 10 having us. And I'm just going to go back through 11 doing that we take what is good about our system, 11 what I talked about in the beginning. I think 12 it's uniformity, the resources. Of course all 12 that any new voting system has to contemplate, I 13 election systems use more resources. 13 think, three parts of the system: Who's on the 14 If there was ever a silver bullet out there 14 list, how does this person vote when he or she 15 for creating a better election system, it's 1.5 shows up at the polls, and what do we have to 16 making sure it's properly resourced, but it also 16 inform us if something goes wrong and there is a 17 preserves early voting which may not increase 17 recount or a contest? What information do we 18 overall voter turnout, but it's very popular with 18 have to inform us about what happened and what 19 voters and does provide a huge convenience. 19 the results should be? 20 That's going to be a consideration with all of 2.0 I think a lot of times people are surprised 21 those ballots as well, taking into account the 21 that in an election contest the result if you win 2.2 folks that have disabilities where a 2.2 is not that you win the election, you just get a

2.3

24

25

new election. And so we don't want to have a

system that gives us a new election because we

still want to know what the problem is.

Page 45 Page 46 1 I think that it is correct that we have not 1 days later that everybody in this particular 2 2 had a capital VR voting-rights issue with our precinct's vote didn't count. 3 3 machines, and I agree with Sean that a lot of it And last but not least, I just have to say, 4 is due to the fact that we have a systemwide 4 repeat, that we want the best system we can have, 5 "system," for lack of a better word, and I think 5 but we can't necessarily always afford everything 6 it is --6 that we want. So we have to decide what we have REPRESENTATIVE FLEMING: Continuity. 7 to have to avoid problems in litigation and what 8 MS. LEWIS: Continuity in the system, that's 8 we can afford. 9 right. And so I'm not expecting there to be REPRESENTATIVE FLEMING: I want to thank our 10 capital voting-rights issues related to the new 10 three panelists today for the fine job. 11 machines. I mean, I think that, again, what 11 As we get ready for our next panel, I want 12 we're looking for -- not for the legal business 12 to mention one housekeeping measure. I think all 13 but good for the voting business, it's 13 of you kind of know who you are, but I'm not sure 14 collaboration and not litigation because 14 everybody else does. Would you flip your name 15 ultimately what we want is for people to have 15 tag around so that everybody sitting up here can 16 faith in the system. 16 see who you are and they want to call on you and 17 Unfortunately, I get up on my soapbox a lot 17 everything. If you forget your name, you can 18 about the fact that we say: Oh, we had great 18 turn it back around and look at it for a second. 19 turnout. We had 15 percent of the voters turn 19 The closing thought that I would have for 2.0 out. That's a terrible turnout. It may be great 2.0 you as we move to the next panel is what we call 21 21 compared to last year when it was 12 percent, but the poll book. You know, there's a lot to be 22 it's not great. And so we want people to know: 22 said about the right to vote but one thing about 23 When I show up, I want to be welcomed, they're 23 the right to vote is that when I go vote, 24 going to find my name on the list, I'm going to 24 somebody else doesn't get to not count my vote or 25 25 be able to vote, and I'm not going to hear two steal my vote or somebody who is not eligible to Page 48 Page 47 1 vote, comes in and votes a different way from 1 DR. LEE: Good morning. Welcome to security 2 somebody that votes twice. So this idea that 2 voting panel. So my name is Wenke Lee. So let 3 when we protect people's voting rights, we're 3 me briefly tell you how we're going to structure this panel. So we'll first go around with a very 4 also supposed to remember that means getting it 4 5 5 right and not allowing votes not eligible to vote brief introduction and then we're going to go 6 to come in there because it cancels out 6 through the questions. 7 somebody's else vote who did the proper thing and 7 So the questions will be mostly in three 8 registered and was the right place and didn't 8 parts. The first part is about what we think are q vote but once. q the most important vulnerabilities to our voting So that will conclude. 10 10 and election system. And the second part is what 11 Amy, I think you're the moderator of the 11 can we do about it, in particular what are the 12 next panel; is that correct? No? Oh. I 12 roles of the private sectors, including companies 13 believe -- you are? Okay. I didn't mean to 13 and academia and systems groups. And the third 14 scare you there. 14 part will be what do we think that the federal 15 Will the next panel come on up. 1.5 government can help us. And I hope that we're going to have some 16 And I just want to make sure you're on your 16 17 toes, Amy. See, I knew all along you weren't and 17 time at the end for questions from the commission 18 I just wanted to make sure you knew that. 18 and the audience. 19 And we'll move to our next panel. 19 So let me start with myself. My name is SECRETARY KEMP: Mr. Chairman? 2.0 2.0 Wenke Lee. I'm a professor of computer science 21 REPRESENTATIVE FLEMING: Yes, sir? 21 at Georgia Tech. I'm also one of the two 2.2 SECRETARY KEMP: I just wanted to say we'd 2.2 co-executive directors for our institute for 23 like to thank our panelists for being here this 23 Information Security and Privacy. I've been now 24 at Georgia Tech since 2001. I teach information 24 morning. 25 (Applause) 25 security annually to about 2,500 students. We do

2.0

q

2.2

Page 49
have large online student body. And I've been
doing cyber-security research for 25 years. I
specialize in system software security. That
means, you know, I go to malware and see the kind
of intrusions and network. I look at activities
on machines to see what damage has the malware
done to your system and I also have started a
company with that malware, focusing on botnet
detection and attribution, and the company was
acquired by Core Security here in Georgia.

And it is obviously my pleasure and honor to
be here. But the work here is in my own opinion
only and I rely on my training in the principle
of cyber security for this work. I also

So let's move on to the panelists. First up, Mike.

who work on voting system security.

(indiscernible) from my professional colleagues

DR. GARCIA: Good morning. Thank you for having me. My name is Mike Garcia. I am here representing the Center for Internet Security, a nonprofit based in Albany, New York.

A little bit on my background. I'm a PhD economist by training but I've been working in cyber security for about a decade. I've served

in a number of positions, including senior cyber security strategist at the Department of Homeland Security. I led a trusted identities group through the National Institute of Standards and Technology as part of the Department of Commerce.

Page 50

Page 52

So I've had a wide variety of cyber security initiatives that I've worked on over time and been mostly focused on election security over the course of the last year.

So the Center for Internet Security is home to both Multistate Information Sharing Analysis Center and the Elections Infrastructure
Sharing -- Information Sharing Analysis Center.
These entities focus like all CIS -- excuse me, on developing consensus-based best practices in cyber security and empowering organizations to implement those best practices.

Over the last year and a half, CIS has put additional emphasis on elections, including creating the EIISAC, the Elections Infrastructure Information Sharing Analysis Center, which for obvious reasons and time limitations I will be acronyming, and now has more than 1,000 members. Those members entirely consist of state elections directors and localities elections directors.

Page 51

2.0

1.5

2.2

2.5

conference.

I know you have a substantial number of them. The count was zero on March 6th and it is now well over 1,000. I'd also like to say Georgia, as a state, and several of its counties are members of that organization. I strongly encourage and recommend that all counties become members of the EIISAC.

At worst, you'll receive timely information on threats and mitigations. At best, we operate a 24/7 security operation center. So should there ever be an incident, they have true cyber security experts at the ready at all times for it.

We are funded, in part, by the US Department of Homeland Security. Our sole mission in EIISAC is to support the elections community on cyber security and best practices and risk mediation. There is no cost for governments to receive these services and so there's very little to lose by signing up. It's a two-minute registration process.

I'll also highlight that the state of Georgia operates what we call an Albert sensor. It is similar to the Einstein sensors that are used in the federal government for cyber security intrusion, detection, and prevention. It is an intrusion detection system that looks for known vulnerabilities and threat information, conducts an analysis of what we call "netflow data" which is basically anything crossing through a network. And we appreciate that partnership with Georgia. We're proud of it and we look forward to a continuing partnership on the cyber security

In February of this year, the Center for Internet Security published a handbook called the Handbook for Elections Infrastructure Security. We worked very closely with many state and local elections directors and officials on this project as well as some national associations and the Department of Homeland Security and other federal agencies.

This handbook highlights 88 best practices that election officials should take to secure their networks from cyber security attack. This sounds like a lot of best practices, but let me tell you that cyber security is very detailed work and when you miss the detail, only one needs to be exploited for an adversary to take advantage of it. So it's indeed important that

(13) Pages 49 - 52

2.0

q

2.2

as much as we look at policy recommendations that are offered in all a small number, five to six policy recommendations that are critical and should be followed, it is really important from a cyber-security perspective to do the very detailed work that comes along a broader set of best practices.

I strongly encourage you to use this handbook in your deliberations. It's available for download from our website. I am more than happy to provide hard copies for free to absolutely anyone in the elections infrastructure in Georgia who would like to have it, commissioners of course included.

The best practices in this handbook are prioritized. They include additional data points such as estimated up-front costs of implementation, ongoing maintenance costs which could be very useful in making decisions in a constrained resource environment. It can be downloaded from our website, as I mentioned, and we believe that it's a critical aspect of security systems across the country and security in democracy.

distributed over 5,000 of these across the country, solely to election officials. So it has some attraction. It is in some ways becoming the standard benchmark for election security from a cyber-security perspective.

Page 54

Page 56

We believe that there is no right way to execute on elections. There are many factors involved. Even from a cyber-security perspective, there is no single way, but there are many wrong ways and avoiding those wrong ways is important. The key is to assess the risks, to prioritize those risks, and to mediate those risks. You can do things right by taking a number of different approaches. It is important that you do that work in assessing risk regularly and mitigating those risks completely.

And even when you eliminate them after you prioritize the risk, you cannot eliminate all risks. That's simply not the business that we're in. It just doesn't work like that. That said, we can be smart about it. And if we're smart about it, we can do a pretty darn good job then. And so that really needs to be the focus: Identifying what are the priority risks that need to be mediated and putting those resources

Page 55

Page 53

2.0

q

1.5

2.0

2.2

towards mediating those risks.

Let me say unequivocably that the threats against our elections and democracy as a whole are absolutely, positively real. And in this business, exposure of weaknesses tends to only bring along additional attackers.

And I'll make the point we have now

The first question we have to ask ourselves is about the motivation of potential attackers. Perhaps it's a chain focus. Perhaps it is simply to undermine democracy more broadly. In some cases, it's solely for self-branding and the matter of proving that it can be done. From this perspective — and we have to consider all of these potential motivations — confidence and security is as important as the security itself. This underscores the importance of transparency and communication of your approach as well as developing and exercising incident response plans.

I strongly encourage you to consider the fact that elections are not static, and so they're not solely about choosing a correct approach to executing on elections but considering the operational aspects of those efforts and ongoing work. This includes a role

for exercising response plans, for expecting that something will go wrong, and for expecting the need that the threat will evolve as it always

does and always has.

In general, we find that aspects of elections' infrastructure that have a network connection are the riskiest from a cyber-security perspective. This especially includes voter registration and election-night reporting but can include things like the poll books, election management systems, in some cases tabulation as well, and in some cases, depending on the configuration of them, voting machines.

It should come as no surprise, but please do not underestimate the importance of this point. Focusing solely on one aspect of elections is a trap. I can assure you that our adversaries are not doing so. They seek weaknesses wherever easiest and cheapest to exploit. When we analyze our security risks, we must do so focused on the whole of the ecosystem from the first steps of voter registration and the filing through the last certification results.

I encourage the commission to consider the broad range of systems that are involved in

24

25

use.

can be done very efficiently and in a variety of

ways that are adaptable to the voting systems we

August 30, 2018 Page 57 Page 58 1 elections and to strengthen security within each 1 American politics, public policy, quantitative 2 of those components. It most certainly is easier 2 analysis, political behavior, and I happen to be 3 an expert on design of risk-limiting audits. It to think conceptually at the system level, 3 4 replacing poll books, replacing voting machines, 4 was nice to hear the League of Women Voters give et cetera, but this is not how those who wish to 5 a shout-out, but I'm not going to talk about 5 6 undermine democracy think about it, so it is 6 those here. It's just too much. It'll be 7 incumbent upon us to not think about it in that 7 important. That will be an ongoing discussion I 8 manner, all right? 8 certainly hope for Georgia. 9 Thank you. 9 As Mike just said, elections have many parts 10 DR. LEE: Okay, thank you. So I just remind 10 and perhaps the greatest threat would be to 11 the panelists that we're going to do at first 11 suppose that we could find a silver-bullet 12 very brief introductions. Then we'll go to the 12 solution that would solve the problem of election security once and for all. 13 questions and have plenty of time for the 13 14 questions, okay? 14 Election security is like national defense. 15 So next we have Mark Lindeman from Verified. 15 I suppose it's a form of national defense. It 16 MR. LINDEMAN: Good morning. My name is 16 requires ongoing attention, collaboration, and 17 Mark Lindeman, and I'm a senior science and 17 investment on many different fronts. 18 technology policy officer at Verified Voting. 18 So I'm very honored to be part of this 19 We're a national organization, not a chapter 19 ongoing discussion. It's a terrific testimony to 2.0 organization by the way. We're nonprofit, the work that Georgia is doing. 2.0 21 21 Now, verified voters, I think these nonpartisan, founded by computer scientists and 22 razor-focused on the challenge of securing 22 particular comments, I will indeed focus on 23 American democracy in the digital age. 23 voting systems very briefly. I'll be as short as 24 A little bit about me. I have a PhD in 24 I possibly can. Verified Voting does not 25 political science. My fields of expertise are 25 recommend particular vendors or systems, but we Page 59 Page 60 1 do have some central criteria, and this comes 1 However, that said, it's important the audit 2 back to two related core principles: verification 2 officials must examine voter marks on the actual 3 and resilience. So last week, Homeland Security 3 ballots, not just barcodes or digital images that 4 Secretary Kirstjen Nielsen stated this nicely. 4 voters didn't have the chance to verify. Because 5 She called on election officials to make certain 5 what we're trying to do, again, is demonstrate that by the 2020 presidential election, every the votes are counted correctly. Auditors have 6 6 7 American votes a verifiable and auditable ballot. 7 to be looking at what voters could look at or 8 She said our systems must be resilient. We must 8 otherwise verify through other means. 9 be able to demonstrate that the votes count and q So ideally and usually, the audit confirms 10 that they are counted correctly. And that's what 10 that the original count was highly accurate. 11 we've been saying since we were founded. 11 That's how most audits turn out. There's at 12 So it's a very exciting and also in some 12 least one counter example that comes to mind 13 ways a terrifying time for verified voting as it 13 where a routine audit actually led to a recount 14 is for many throughout the country. But in order that changed the results in several local 15 to verify that votes have been counted correctly, 1.5 elections. So that's something that happens. 16 in our analysis, our voting systems must use 16 Paper ballots, where maybe it will happen more, 17 paper ballots that all voters have had the 17 maybe it will happen less, but either way, paper 18 opportunity to verify. And we must routinely 18 ballots provide resilience. If there are any 19 check the marks on some of those ballots. 19 lingering questions about the accuracy of the 2.0 So that routine check is what's called 2.0 count of paper ballots, remove the doubt because 21 post-selection tabulation audit. And I want you 21 they're available for recounts. 2.2 to know, don't be terrified of the votes, they 2.2 I also wanted to point to another way that

2.3

24

25

paper ballots provide resilience. Under

consideration for the state of Georgia is to have

all in-person voters use ballot-marking devices.

2.0

2.0

2.2

ensue.

Page 61
Either it could apply just to election-day voters or could apply to both election day and early voters. So verified voting has real concerns about this approach and I wanted to explain why.

In a system that relies on ballot-marking devices, the number of voters who can mark their ballots depends on the number of machines that are available. So when machines fail or even get

turnout that's higher than expected, chaos can

And you've probably heard the stories from around the country before. In fact, in Johnson County, Kansas, which deployed a system that relied entirely on ballot-marking devices, they just had the primary and they experienced long lines for reasons they still don't entirely understand, they're not sure about, but it had to do with a flaw in the underlying software they were using. So it's inherently fragile, and indeed that fragility provides an attractive target for determined adversaries.

So the advantage of a system in which most voters are able to use hand-marked paper ballots is that the number of voters who can mark their ballot at once is limited only by the number of

available tables and privacy booths and those rarely ever fail. So in some sense ballot-marking devices are still a crucial part of the system because they provide accessibility which is a core principle of the commission and should be a core principle of everyone.

Page 62

But the worst that there -- they're a less appealing target because if the ballot-marking device fails and if it's scanner fails, most voters still are able to mark their ballots by hand and deposit them in the secure ballot boxes underneath the standers. So we see that as a very valuable property that we should probably not abandon.

I heard concern in the first panel about overvotes and also some discussion of undervotes. I want you to note that, okay, it's true that ballot-marking devices can make overvotes impossible, and I agree that that's an advantage. Experience has shown that ballot design, the way that a paper ballot is laid out and instructions that are given, can have a very large effect on the amount of overvotes that are cast in the first place. So we can really help voters to avoid mismarking their ballots and then it is

Page 63

2.0

q

1.5

2.0

2.2

important, just as I said before, to have a standard to reject those ballots so that the voter has a chance to correct them. But that ends up being a very, very small fraction of all ballots.

Something you do have to worry about is inadvertent undervotes. It's absolutely true that some people choose not to vote in a contest, perhaps many contests, because they just didn't want to. That's not a problem. We wouldn't want to automatically reject such ballots.

However, there have been elections in which voters on particular systems in particular counties somewhat mysteriously undervoted at double-digit rates that were not true of voters on other systems or in other counties. No one is quite sure why this is. We believe it probably has something to do with the way that the digital ballot was displayed on the screen.

Paper ballots can also be designed so that -- can either be designed well or poorly so that people do or do not see contests. One of the scary things about ballot-marking devices potentially is in the presence of cyber attack we may not be able to determine after the fact

Page 64 whether the contest was even displayed, whether

it was even presented or not. The ability to check the selections on the ballot that's produced may address that problem, but that's how well voters are able to use that. It's using an untested hypothesis whereas over half of the registered votes are using a system in which — in-person voters, I should specify, are using a system in which most people are voting successfully on hand-marked paper ballots. So don't overlook those advantages. Thank you.

DR. LEE: Okay. So in the interest of time, I'm just going to move on. So as I ask the panelists remaining to introduce themselves, I'm also going to ask a question that I think it will be best for you to answer.

So sitting next to me is Klint Walker. He's from the Department of Homeland Security. So I want him to introduce himself. I'll also ask him a question about what is in the role of federal agencies to help the states secure the election and working systems.

MR. WALKER: Thank you. My name is Klint
Walker and I'm the cyber security advisor for
Region 4 for the Department of Homeland Security.

Page 65 Page 66 1 That means that I cover North Carolina, South 1 consultants. 2 Carolina, Florida, Georgia, Mississippi, Alabama, 2 SENATOR THOMPSON: Thank you. What an honor 3 Kentucky, and Tennessee. Just a small area. 3 it is to be able to be here and be a part of 4 So I'm -- I always like to use the term that 4 this, so thank you, Secretary of State. 5 5 I'm from the federal government and I'm here to My name is Bruce Thompson. I serve in the 6 help, so ... it's a good icebreaker. 6 senate and I'm the chair of science and 7 Because elections security is a national 7 technology. I have a background in PII and 8 security issue, our role, as we see it, is to add 8 software as well. Anyone that's been around 9 support. You know, just like FEMA does in the knows my passion for cyber security and 10 event of an emergency, you know, the Department 10 quasi-elections over the last three years. 11 of Homeland Security is not going to take over. 11 Your question as well, that's what it says, 12 We are not here, you know, to do things without 12 what do you think with the private sector 13 permission. We're here to support. And we are 13 involvement. I think we have to engage the 14 here to support with information sharing, we're 14 private sector. As a private sector 15 here to support with technical assistance and 15 businessperson, that's where a lot of this 16 maturing partnerships, getting the right people 16 expertise comes from. 17 in touch with the right services that they need. 17 You can't just rely on the government. The 18 That is our role and that is what we're here to 18 government's not here. Although they may be here 19 perform. 19 to help, they're not going to solve the problem 2.0 DR. LEE: Great. Thank you. 2.0 that's brought in. The private sector is full of 21 21 And we have Senator Bruce Thompson. And experts and professionals that are the front 22 then the question I want to ask you is that what 22 lines day in and day out. 23 do you think about the roles of private sectors 23 The challenge I think we have is being 24 in helping in the interest of security. That 24 allowed -- safe and sound is when we have 25 25 corporations that can collaborate the innovation would include a private security company's Page 67 Page 68 1 and experience they have without creating So how do you reconcile those conflicts? 2 2 vulnerability to their stockholders or those that REPRESENTATIVE SETZLER: Thank you for the 3 have equity within those institutions. And I 3 question. 4 think that's the challenge we have set before us. 4 I want to say once again thank you for the 5 5 How do you provide that mechanism in place where invitation to be here to the secretary and the the MBA and so on would be able to not 6 6 co-chairman. 7 effectively harm their corporations but 7 And I think to frame this question, I'd like 8 collaborate together for the best election 8 to start by saying that the key for us is to fund 9 process and/or security for the people of the 9 the right technology for the right task. When we 10 state of Georgia. 10 talk about technology, everyone, I think, today 11 DR. LEE: Great. Thank you. And last but 11 is biased with what is emerging leading-edge 12 not least Representative Ed Setzler, and the 12 technology used to solve our problems. 13 question I want to ask you is related to the 13 If I can remind us, if you think back to the 14 previous question that I asked Senator Thompson 14 first century A.D., there was a cutting-edge 15 which is a lot of operations now, they use plan 1.5 technology that was developed -- developed in 16 to encourage -- including why hackers 16 China. Didn't make its way to the western world 17 (indiscernible) many of the systems, and on the 17 until about the 12th or 13th century, and it's 18 other hand you also have the desire to -- from a 18 called pulp paper. And paper is something that 19 citizen's group that, you know, they demand to 19 we've been able to use for about 800 years. It's 20 know about the abilities of our working systems. 2.0 something that's very good for recording a vote 21 On the flip side of that is, you know, that 21 and recounting it. You know, the idea that if 2.2 may develop -- let's say overconfidence. Also 2.2 it's not leading-edge technology, it's not really 2.3 23 there's concerns about all the vendors and technology, but all of the things we use, that 24 government agencies to keep certain operations 24 we're talking about in voting context is 25 and the details out of the purview of the public. 2.5 technology.

25

away from enemy hands. So there's always this

tension, so I just wanted to see what's your

Page 69 Page 70 1 The question is what is the right interplay 1 votes. And it takes quite a high level of 2 2 sophistication to defraud and fraudulently inject between an array of technologies to solve the 3 votes into -- for elections, but we also know various problems and challenges we have in a 3 4 that no machine is unbeatable and is accurate. fair, open, and secure election system. And as 4 we do that, I just want to remind us, you know, So how do we -- I think as we face this 5 6 the gist is that this paper technology is 6 challenge, we have to ask ourselves what is the 7 recountable. There's also vectors of threat with 7 proper complementary use of the various 8 which it can be fraudulently used. And then we 8 technologies we have, from paper to electronic 9 hear the stories of the 1948 election for the 9 technologies to taking care of ADA 10 United States Senate where Ballot Box 13 was --10 accessibilities, taking care of ease of voting, 11 came in with 201 votes for one candidate and 3 11 rapid recounting, but also the verifiability of a 12 votes for the other candidate in a race statewide 12 recounting component that we think paper provides 13 in Texas that was decided by a total statewide 13 for us. How do we fold those together in a 14 differential 87 votes, and the rest is history as 14 complementary system that is really best in 15 it were. 15 class, that we know we've got a recountable 16 So whereas the technology is tremendously 16 voting system? 17 useful in a recounting setting, it by itself, 17 I think this discussion sort of leads us to 18 when left into itself, has its own 18 see that we have the best-in-class technology if 19 vulnerabilities. 19 we not just put our election system on the 20 Likewise, if you look at more modern 2.0 Internet because it invites hacking. And we have 21 21 technology, an electronic voting system is very a process again that's a complementary process 22 easy to use. They're really -- they're a 22 that insures we're doing our best to secure the 23 breakthrough for us in terms of ADA and handicap 23 vote. 24 accessibility. They allow us to rapidly 24 I think those are the challenges we face in 25 25 tabulate. They also allows us to rapidly recount technology. Let's not be stuck in 2018 thinking Page 71 Page 72 1 if it wasn't invented in the last ten years, it's opinion on this. 2 not really technology and it's not relevant to 2 REPRESENTATIVE SETZLER: I would tell you 3 this discussion. 3 it's to face the tension between the open source 4 Thank you very much. Yes. Δ and closed source system. You know, if we're in 5 To the professor's question, I want to make a circumstance where votes were all publicly cast and publicly known and the content of it was 6 sure I'm drawing the fine point to your question. 6 7 What component of that would you like me to speak 7 known, it would be easy to move to decide if 8 to directly? I'm not sure I really understood 8 complete open source, complete transparency to q your question -q all parts of it as it were. 10 DR. LEE: So I think one question you can 10 I think part of what we face in this is this 11 answer is the tension between citizens' right to 11 mandate to maintain confidentiality of the 12 know. So basically I think one security 12 ballot, that Senator Bruce Thompson when he goes 13 principle is that you should not secure your 13 down to his polling place in Bartow County, that 14 system through obscurity. You know, you should 14 vote, although your vote is considered public, 15 let, you know, people look at system and there's 1.5 your vote as a private citizen at the ballot box 16 advocacy for open design, open source so people 16 is private. 17 can actually look at the (indiscernible) because 17 So the idea that everything can be made 18 (indiscernible). So by many people looking at 18 open, and -- of course, that'll never be part of 19 the system, giving the system a chance, that we 19 our system. The idea to preserve the 20 can help everybody. 2.0 confidentiality of the individual's ballot 21 But on the flip side, you know, vendors, 21 presents some challenges to being completely open 2.2 including some of the secret government agency 2.2 source. So that's all parts of the approach. 2.3 23 operations, they want maybe, you know, to keep it So we've got the tension between open source

24

2.5

and sort of proprietary with respect to open

source. Obviously, it allows for people to look

2.0

q

2.0

2.2

in and confirm. It also opens the door for a broad array of people coming in and figuring out how to hack the system. So you have that tension.

I think the potential we have, I think, to focus on -- you know, I think that a more difficult and complex way is the idea of confidentiality of the individual ballot versus everything being known about it. And I think that is a component -- when you study the system, that is a component of -- and when you know we've got, you know, 2,314 ballots in this precinct and we want to make sure that those are matching the people that voted, there's no way to tell -- we can't allow Mrs. Jones' vote for Hillary Clinton or Mr. Smith's vote for Donald J. Trump to be known relative to each other. So that provides inherent limitations to, I think, a complete open-source system.

So I think the -- I would tell you that if we're in a place where vetted, confirmed, white hat, or confirmed, vetted entities can have visibility in the system, but not everybody, that's probably the best place you can be. I think it would be an agreeable (indiscernible).

DR. LEE: Great. Thank you. So I think at this point, I think we should open to the commission members and audience to ask questions. So I think it's my -- this panel is only open to the questions from the commission members, so I

Page 74

Page 76

MS. BAILEY: Good morning. Lynn Bailey, local election official from Richmond County.

I have had concerns all along about the implementation of risk-limiting audit in an environment such as Georgia's where we are precinct counting ballots. Now granted, I'm sure that I don't have a complete understanding of how those audits work, but I do know that in the state of Colorado, as an example, it took them probably nine years or so to perfect a system, if it is in fact perfected at this point, of risk-limiting audits, conducting those audits.

They are an all mail jurisdiction and are mostly central count which I think differs greatly from Georgia's set up. So I -- we ask that, you know, we proceed cautiously with that and make sure we have some type of post-auditing effort in place, no doubt, but that we're careful that we don't bite off more than we can chew with

Page 75

Page 73

2.0

Δ

1.5

2.0

2.2

2.3

apologize.

our current environment. Thank you.

DR. LINDEMAN: May I speak briefly to that? So just to be clear, it's not that Colorado worked for nine years on implementing risk-limiting audits. For most of that time, Colorado was working on deploying the entire new voting system. It's absolutely true that if Georgia tried to emulate Colorado in 2020, I can't imagine that working. They are too many differences.

So what I want you to know is that there are many ways of implementing tabulation audits that are risk limiting. There are many ways of implementing tabulation audits that may not be risk limiting but nonetheless are valuable and provide justifiable confidence in results. And I can tell you that Verified Voting and I personally am very passionately committed to working with Georgia to find solutions that actually work. Because an audit that election officials cannot do is not a successful audit. So we're completely on board with that.

SENATOR THOMPSON: I think it's real

important, first of all, to understand what the

initiative is before us, and that is to make sure

we have a bipartisan approach in what we're trying to do. And ultimately the ingredients we're looking for is exactly what I think we have in the state of Georgia in our government. That is transparency and accountability.

Keeping that in mind, the one thing the chairman sitting to my left here and I worked on this last year, in hearing after hearing after hearing we kept saying let's not let perfection be the enemy of greatness. We keep thinking that it has to be perfect from day one, so therefore, for some reason, do not go forward. And ultimately when you do that in business, you find yourself a failure. And at that point, we have a huge problem. We know it's before us. What I would encourage our state is, again, come together, let's not let the perfection, what we're shooting for out there, be the enemy of greatness.

REPRESENTATIVE SETZLER: Taking off from what Senator Thompson said, the director -- examiner's question, that was the concern about risk-limiting audits in the debate this last legislative session, was I think there's a recognition across the board. I'm admitting that

20

21

2.2

23

24

25

until the first day, you know, the first game,

throws the players the playbook and says: Head

out on the field, win the game for me. They've

don't know what they're doing, but they're

supposed to go out and win the game.

never practiced, they've never been trained, they

And how a lot of organizations treat cyber

August 30, 2018 Page 77 Page 78 1 risk-limiting audits are an important part of 1 great system that we can continue to refine over 2 2 that complementary regime that I was referring to years, and as we have confidence in our system 3 earlier in my remarks. 3 and as we're able to move forward, step-by-step I would ask local election officials to not 4 implement over the course of maybe a decade a 4 take a stance against risk-limiting audits 5 system that's going to -- we're going to be able 5 6 because of what it could do if they're 6 to achieve the political moves that we're looking 7 implemented in 2018 and 2020. I think we're 7 for and not just throw us into chaos by a "Hail 8 where we need to be as we need to move towards 8 Mary pass" from day one, something again, 9 phasing in a new system. We need to phase in a that's -- as Verified Voting said: A radically 10 more rigorous risk-limiting audit regime as we 10 different system. We just felt like -- so I 11 can do it with confidence. 11 would challenge political election officials to 12 What we were very careful to not do this 12 not be in the anti-risk-limiting audit camp. 13 past year, legislatively, was not to mandate some 13 It's a very important part of what we do moving 14 statute that created a statutory set of handcuffs 14 forward. But your legislature and others would 15 for us that cascaded unlimited consequences that 15 say: Let's not go all in in year one. Let's 16 would throw an entire election into chaos. I 16 step into that and let's take steady, short steps 17 think the -- so with that, we step back 17 as we go. 18 legislatively from a -- the most rigorous 18 DR. LEE: Great. Thank you. 19 risk-limiting audit regime we could mandate, but 19 I think in the interest of time, we should 2.0 at the same time, I think we can validate the move to -- oh, sorry. 2.0 SECRETARY KEMP: Thank you, Dr. Lee. I just 21 21 value of risk-limiting audits as an important 22 part moving forward with any program. 22 want to ask -- this may be a good way to wrap 23 The question is do we mandate a statute, a 23 this segment up, but Mr. Walker and Mr. Garcia 24 24 are both fighting this battle every day, full state-wide thing year one, or do we put 25 25 something in place, as Senator Thompson said, a literally nationwide. And what are you guys Page 80 Page 79 1 seeing out there that's working? Anything we 1 security is we have a program in place, but 2 should be concerned about? Any advice? 2 nobody ever practices it, nobody ever, you know, 3 I think it's been a great panel. 3 trains for it. They're always sitting. But 4 MR. WALKER: So we've been pretty much boots 4 cyber security is everyone's responsibility down 5 5 on the ground, you know, for the last year for to the last person, and that's what the -- you know, the threat actor is targeting. 6 the election systems in the Department of 6 7 7 So whatever system then you're looking to Homeland Security performing assessments across 8 counties' and states' election systems. 8 putting into place, make sure that you have the 9 And one of the things I think comes out in 9 policies and the processes and the training to 10 every system is, you know, people. It's 10 support that system. I think that the key to the 11 eventually that everything always comes back to 11 big things here is that that's what the 12 your layers, how you value risk, how you accept 12 thracker's going after, from phishing campaigns, 13 risk, how you mitigate risk, and then how that 13 you know, to social engineering watering holes, 14 trickles down to the people, having the right 14 whatever it going to be. They're going after the 15 people in the right place. 1.5 people. And if your people aren't on board with 16 You know, I always like to use this analogy. 16 you, if it's not a top-down approach to training 17 You know, that imagine you had a football team 17 and to holding people accountable for cyber 18 and you have a head coach and he never shows up 18 security for the system, then it might all be in

19

20

21

2.2

23

24

25

place.

Senator Thompson is saying. So there are times to take a moon shot or throw a Hail Mary. I was going to use a football analogy but I won't

DR. GARCIA: So I'd agree wholeheartedly

vain no matter what other controls you have in

with that and I would also agree with what

25

1

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

2.0

21

2.2

23

24

25

SAFE Commission August 30, 2018 Page 81 1 how effective they'll be tomorrow is far more double-up anv. 1 2 2 important. So, you know, there are times to throw that 3 3 MR. WALKER: Let me add on to that as well. Hail Mary, but you always continue making 4 incremental improvements. So if something is not 4 As you've probably heard the term several times, 5 viable to implement now, it does not mean you 5 you'll probably hear it a lot more: resiliency. 6 don't continue mitigating risk and make 6 Resiliency is the key. I mean, it's no longer a 7 improvements. Find ways to do that and when you 7 matter of, you know, if you're going to get an 8 design something where you are trying to make a 8 attack, it's when. And having resiliency built 9 large overhaul of a system, be sure that it is 9 into your system -- and a lot of people think 10 built for evolution as well because these threats 10 that resiliency is something that you can buy. 11 will continue to evolve. 11 And we like to use this analogy as well, 12 And that's really -- you know, if there is a 12 it's that you can't go out and buy health. I 13 takeaway about what the threat environment looks 13 mean, we all want to be healthy, right? But 14 like, it's different today than yesterday. How 14 health isn't something you go out and buy. You 15 dramatically? Well, that depends on the day. 15 can't go to the store and say I'd like one box of 16 But these things continue to change and that's 16 health and you go home and you get healthy. 17 okay. Our responses continue to change. We 17 Health is a way that you are, it's practice. 18 continue to get smarter and more capable and more 18 It's putting into practice the things that you 19 capable, but we have to be thinking about risk in 19 need to be healthy: Eating right, exercise. 2.0 20 Cyber resiliency is not different than that. that perspective, that, yes, you mitigate 21 21 something, you move on to the thing, you have to It's building a program that looks at the 22 come back and assess that. You have to 22 different risks and it says what do we need to 23 continually assess where you are and what you're 23 do, everything from configuration control, owner

Page 83

24

25

1

2

3

4

5

6

7

8

9

10

11

12

13

14

1.5

16

17

18

19

2.0

21

2.2

2.3

24

25

those layers together and saying where are our threats and where are we going to actually put our resources and our time and attention to. So making sure that you're looking at resiliency as was said, you know, looking for tomorrow's threats and saying is our system going to be agile in development and resilient during the time of crisis and need. That's key.

doing. You have to understand your approaches,

how effective they were yesterday is nice, but

SENATOR THOMPSON: Real quick because I know we're trying to wrap up. One of the things we're talking about is systems to be put in place, but in business, especially on a software business, it's important that not only we put something in place, but we as a state are committed to that because if we aren't committed to this, we can't go ahead and spend whatever the amount of resources are to be able to put an election system and so on in place, but we're going to need the resources to be able to be committed and be able to support that. Because as the people on my right have just said and to my left, this is an ongoing challenge. It changes on a daily basis. It's going to take financial capital, it's going to take emotional intellect and it's going to take physical capital.

Page 84

Page 82

In the software business, you do pin tests on a regular basis to see where the vulnerabilities are. Unfortunately, we deal with elections as if it's -- when it goes live, that's when we find out if we have a vulnerability, so we're going to have to handle this animal a little bit differently, but the main thing we've got to do is we've got to be committed to this, all in from the top down to the bottom or the bottom or the top, wherever that is, that weakest link, that's where we're going to find our vulnerability. Unfortunately that vulnerability then mitigates any risk that we put in place.

building, management training, situational

awareness, asset management. It's putting all of

DR. LEE: Any last word? Okay.

So I would like to thank all the panelists. I mean, I think that's very informative, helpful. So let's wrap up and move on to the next panel on voting accessibility.

(Applause)

MS. HOWELL: Good morning. My name is Amy Howell, and I'm thankful for the opportunity to moderate this panel around access for individuals with disabilities in the voting process.

Before I introduce our panelists, I wanted to just give a little bit of the legal context

SAFE Commission August 30, 2018 Page 85 Page 86 1 parameters that guide the state in relationship 1 compliance with those federal laws and how they 2 2 to our obligations around access. There are a guide the work ahead. 3 3 number of federal laws, and the one primarily is So now I'm going to introduce our panelists, 4 the Americans with Disabilities and 4 and I'll ask as we engage in this discussion or 5 Rehabilitation Act, federal law, that provides 5 if there are any questions from commission 6 protections for people with disabilities to 6 members to make sure that you pull the microphone 7 ensure their equal access to activities that are 7 close so everyone who's here can hear you really 8 operated by public entities and ensuring that 8 well. 9 equal access and prohibiting any exclusion from. 9 So, first, let me introduce to my right, 10 It imposes requirements to the state and local 10 Lou Ann Blake. She is the deputy director of the 11 governments to ensure that individuals have that 11 National Federation of the Blind and Jernigan 12 equal opportunity. 12 Institute where she's worked since 2005. For 13 There are a number of -- as has been 13 eight years Ms. Blake has served as the manager 14 mentioned by a number of our panelists before, 14 of the National Federation of the Blind or NFB's 15 federal laws also govern the voting process that 15 HAVA training and Technical Assistance Grant for 16 also contain provisions explicitly making 16 the United States Department of Health and Human 17 reference to equal access for individuals with 17 Services and has been responsible for working 18 disabilities, including the Voting Rights Act. 18 with election technology, developers, voting 19 HAVA was mentioned earlier and also the Voting 19 rights advocates, elections officials to ensure 2.0 Accessibility for the Elderly and Handicapped 2.0 that the voting process is accessible to blind 21 21 Act. voters. 22 So I won't go into the specifics of those 22 She's also published a number of scholarly 23 provisions, I know our panelists will mention 23 articles and works with institutions of higher 24 them, but I wanted to just offer that framework 24 education to help them make their digital 25 25 to indicate how the state has worked to be in campuses accessible. Page 87 Page 88 1 Prior to joining NFB, Ms. Blake worked as an and a licensed -- deri-fit (pronouncing)? 2 2 environmental engineer for a number of consulting MS. JONES: Geri-Fit. 3 MS. HOWELL: -- Geri-Fit instructor. She firms in the Baltimore and Washington area. She 3 holds a BS in environmental engineering and a JD. 4 4 has a master's degree in psychosocial 5 To my right -- excuse me, to my left, my 5 rehabilitation, and she's also a former director 6 other right, is Anne Kuhns. She is a staff 6 of mental health and developmental disabilities 7 attorney with the Georgia Advocacy Office which 7 in a fourteen-county area. 8 is a non-profit, federally-mandated entity that 8 I want to thank our panelists for joining 9 advocate on behalf of individuals with q disabilities. 10 10 sort of engage our conversation. 11 She graduated from Georgia State College of 11 12 Law and after several years of practice in a big 12 13 law firm, she left the corporate litigation team 13 relationship to their access to voting. 14 14

1.5

16

17

18

19

2.0

21

2.2

23

24

25

to join GAO. She advocates on behalf of individuals with all types of disabilities, living with physical, mental, and developmental disabilities. And then we also have Ms. Elizabeth Jones.

15

16

17

18

19

2.0

21

2.2

23

24

25

She is the director and COO -- executive director, excuse me, and COO of Shiloh Community Center, an agency that provides health and wellness services to senior citizens and persons with disabilities and other community-based services.

Ms. Jones is a certified Tai Chi instructor

us. And I have a few questions for them to help

So if you could, tell us what are the key areas of interest for people with disabilities in

Elizabeth, do you want to start us off?

MS. JONES: Yes. One of the major problems when talking with seniors in the fourteen-county area is a lack of access to polling sites. When we look at Richmond and Columbia counties, there are more polling sites. There is more access to transportation to get to those polling sites, whereas when you go out to the rural counties, there are not as many polling sites and there are -- there's a lack of transportation.

And a lack of transportation in the rural counties has been an ongoing problem for many,

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

20

21

22

23

24

25

1

2

3

4

5

6

7

8

q

10

11

12

13

14

15

16

17

18

19

2.0

21

2.2

23

24

25

many years. And the polling sites, some of them they lack the type of accessibility to enter and exit for people with disabilities, older adults, and so there is a problem.

And I know that a lot of the places where those sites are being located, they sort of volunteered their sites for that, but we do need to look at whether that site really is accessible for a person with disabilities or an older adult. Standing in lines, long lines, whether or not that person is actually capable of waiting in a line for their time to come in, and the -- and bathrooms.

Some people might think that's not a big issue for an older adult, but being able to -- if you're going to be at a site for a very long period of time, then they need access to bathrooms.

And so when we look at and we talk about accessibility, we need to remember that we have a lot of people with disabilities who might feel like they lost their citizenship because they are not able to vote. Older, frail adults who feel the very same way. It bothers me when I talk to a senior citizen and they say: You know, I

ballots, when there's a recount and those ballots are taken out of that ballot box, it's very obvious which ballots were marked by the ballot-marking device. And if those machines are only being used by voters with disabilities, then you know that that ballot was cast by a voter with a disability.

So it's very important that the processes be in place to ensure that other voters, voters without disabilities, are using those machines as well. So that's sort of the poll-based issue that's really faced by voters with disabilities or print disabilities.

Another issue that we're facing is absentee-ballot voting. Typically, an absentee ballot is a paper ballot which is not accessible to a blind or a disabled voter. So we're not able to mark that ballot privately and independently. So there are systems such as electric ballot delivery that will enable us to mark that ballot. So those are the real key issues that were facing right now.

MS. HOWELL: Ms. Blake surfaced two important principles around privacy and independence. So, Anne, as you talk about access Page 90

didn't get to vote in the last election because I didn't have a way to get to the poll. Or: I got to the poll and I didn't -- started not feeling well and I just said I'm just going to leave.

MS. HOWELL: Lou Ann?

MS. BLAKE: Sure. So I am going to speak primarily about blind, vision, and other print disabilities. So for a blind voter, access to the ballot, being able to mark your ballot privately and independently, and then having a secret ballot once you mark that ballot are the real key issues. And this has been particularly true with the movement from DREs to paper ballots.

Many states, for the lack of federal funding to purchase new machines, are having the majority of their voters handwrite their ballots and they're only purchasing enough accessible ballot-marking devices to serve as the, quote, ADA machine. But many of these second-generation machines create or generator ballots and it's different in size and content from a hand-marked ballot. So even though those ballots may be tabulated, so they're using the same tabulator and of the same ballot box as hand-marked

Page 91

Page 89

1

2

3

4

5

6

7

8

10

11

12

13

14

15

16

17

18

19

2.0

21

22

23

24

25

2

3

4

5

6

7

8

q

10

11

12

13

14

1.5

16

17

18

19

2.0

21

2.2

23

24

25

to voting, will you also sort of give us some information around the importance around independence?

MS. KUHNS: So, yeah. So the thing about voters with disabilities is they span across all race, gender, economic, party lines. So it's not a partisan issue. I mean, everybody wants the same thing. They want to go to the polls, they want to have their vote count, they want it to be private and accurate.

And so the law requires that people with disabilities have the same opportunity to access and participation, but obviously throughout history people with disabilities have been historically marginalized and continue to be so. At this time through systems or failure -failure of people at the polling station to understand the systems, failure of training to make sure that people understand the systems, and to make sure beforehand that the systems in place actually work.

MS. HOWELL: You raised a good point about new systems, Anne, and that's a lot of what we're going to talk about.

Anne, are there some features that could be

Page 92

2.0

q

2.2

found in a new system that would enhance accessibility for people with disabilities. I know you talked about some of the challenges, but what might be some of the features that would be an enhancement and it would help?

MS. KUHNS: Well, all of the accessible ballot-marking devices have an audio-ballot component, so that's clearly critical for a blind voter or a low-vision voter.

Now, unfortunately there is no current poll basis on those accessible to a deaf-blind voter. You know, someone who's profoundly deaf, you know, cannot hear the audio ballot, and he's blind so they can't, you know, read the touchscreen.

You know, refreshable braille slates, you know, would solve the problem, however, for a number of technical or security reasons that doesn't exist. So, you know, of course, you know, having the large print, touchscreen for low vision is also really, really critical. And then, you know, for other disabilities, you know, the switch pack — the tone switches and things like that, of that nature are also very important to the public.

Page 94

MS. HOWELL: I think that I read that for a number of people who may be visually impaired and especially low ability to see and especially on an aging population that braille may not be their -- may not be -- they may not be familiar with braille, so are there other options that you mentioned that would be important?

MS. BLAKE: Yeah. So, you know, the user interface or control panel that a blind voter would use to get through the ballot to select their choices of candidates, you know, those --you know, typically you'll have different buttons and shapes on the panel or on the control panel, like an "X" or an up arrow or a down arrow, right arrow, left arrow. So those are the ways that a blind voter can use those systems. Typically they are labeled in braille. The NFB encourages braille, the use of braille, so that is a key factor that needs to be included.

So the different shapes, they typically are color-coded as well for voters who can see color. So that typically is how those controls are made or are designed.

MS. HOWELL: Ms. Kuhns, for individuals who have physical or mental disabilities, what would

Page 95

Page 93

1.5

2.0

2.2

be some features of a new technology that would enhance accessibility.

MS. KUHNS: Well, of course you're allowed to have a person of your choosing besides your union leader or employer come help you at the polls. And one big problem is, at the polls, people don't under -- the poll workers don't understand, one, that you're allowed to have somebody help you, or, two, that you're allowed to vote at all.

So having somebody there to assist you is definitely the biggest issue, and I think the stigma attached to mental health issues and developmental disabilities is what holds that back more than the ability of people to vote because you may not agree with why somebody is voting for who they are voting for but -- I don't agree with the reasons why people vote for somebody, so just, again, as a policy, the procedures are in place, the people at the poll know that you can have somebody assist you as long as you have been not legally adjudicated incapable to do so.

 $\begin{tabular}{lll} {\tt MS. HOWELL:} & {\tt Ms. Jones, are there other} \\ {\tt features that would help with the aging} \\ \end{tabular}$

population?

MS. JONES: I'm not going to speak to the actual system as to the wording on some of the ballots. If there is an amendment or you're voting for some type -- say 1 percent sales tax or something like that -- I have a lot of younger friends on social media. And in one election, previous election, they made a big joke out of it, and it just went around and around: What did I just vote for? Because they really didn't understand the language of the ballot so some of them said they voted yes, some voted no, but they really didn't know what they had voted for.

So if we've got 20-somethings and 30-somethings not sure of how and what they should've voted for, can you imagine an 80-year-old person going in and reading an amendment that's a half page long and not understanding what they should vote for.

So it's a part of the process of how -- of what we're looking at. I would encourage the people here who have some control over our voting system to -- regardless of what type of system you go to, that it remain simple and accessible for people with disabilities and older adults.

Page 96

August 30, 2018 Page 97 Page 98 1 MS. KUHNS: So another accessibility issue 1 Now, if you weren't born and raised as an 2 2 is you wouldn't actually think that people with English-speaking person, you will get something 3 hearing impairments might have a problem at the 3 like that, or you have a process that you're not 4 poll, but what a lot of people don't know is our 4 familiar with, you're not going to vote the way 5 you probably would like to vote. So not just 5 American Sign Language is not the same as 6 English. You can't just write somebody a note 6 looking at Spanish-speaking populations, but 7 that speaks ASL. It's not the same, doesn't 7 let's look at our entire population and say is 8 translate the same. 8 this a system or a process that someone who was 9 So there needs to be a contingency in place 9 not born and raised in an English-speaking 10 for somebody who shows up who needs an ASL 10 nation, can they navigate the system also. 11 interpreter. And you can do that through 11 MS. HOWELL: So I know I started by 12 telecommunications relay service which is 12 providing a little overview of the law that --13 relatively affordable. But a person who ASL is 13 well, I mean, tell us a little bit about what the 14 their primary language is not going to be able to 14 law requires of voting rights or otherwise around 15 understand what is in that ballot. 15 equal access. So in relationship to the issues 16 MS. JONES: And language barrier, well, 16 raised around being able to understand anyone, 17 we've talked about, you know, the Hispanic 17 and then when we talk about equal access, what 18 community having ballots that are, you know, 18 does that really translate into in the voting 19 Spanish for Spanish-speaking populations, but I 19 process for people disabilities? 2.0 do encourage you also to not forget that we have 2.0 MS. BLAKE: Yeah. So Title II of the -a lot of citizens who are not -- were not born 21 21 well, first we'll talk about HAVA. HAVA, you 22 and raised in an English-speaking nation. And so 22 know, passed -- was passed after the 2000 23 having some type of support in place for people 23 election, and HAVA requires that there be at 24 whose English might a barrier. 24 least one accessible voting machine in every 25 25 I just talked about that long amendment. polling place for all federal elections. Page 99 Page 100 1 And then the Americans with Disabilities 1 provided by a government entity, yeah. 2 Act, Title II requires that a voter with a 2 MS. HOWELL: I know that we've talked a 3 disability could be provided the same opportunity 3 little bit about the features of the system, and 4 to vote privately and independently as is 4 Georgia's comprised of a hundred and fifty-nine 5 provided to voters without disabilities. 5 counties and we have officials from many of them, 6 So what that means is that when I show up at 6 and then we've talked about that we have one 7 the polling place, there needs to be a way or 7 system, that when we talk about replacing it for 8 8 there needs to be a system in place that enables a new system will we look at other states. Are q me to mark my ballot privately and independently q there challenges for a new system that might be 10 and verify that I marked that ballot the way I 10 unique to Georgia in terms of our disabled 11 wanted to mark it, privately and independently, 11 population? 12 as is, you know, available to voters without 12 MS. KUHNS: Well, you know, we talked about 13 disabilities. 13 this earlier, and I just think it's -- I don't 14 So with that, that is what Title II means in know that it's -- it's not particular to Georgia. 15 terms of voting, so that I have the same 1.5 We have centralized populations, and people with disabilities -- and I know this is in any state, 16 opportunity as everybody else, or any other voter 16 17 with a disability has the same opportunity. 17 but in rural areas, people with disabilities 18 18

19

20

21

2.2

23

24

25

MS. HOWELL: And so in relationship to the issues raised about whether an individual understands the provisions of the ballot, that it might not cover that in any particularity, it's more around making sure that there is access to the process of the ballot, correct?

19

20

21

2.2

23

24

25

MS. BLAKE: Yeah. That you have an opportunity to the same benefit or service that's can't get transportation to get to doctor's appointments. They can't get transportation to get their groceries.

So getting transportation to get to the voting station so far as I can tell is not covered in any government benefit. So some system that actually finds transportation to the poll -- I don't have the framework for that, but

2.2

23

24

25

the change.

the new machine. It would make the first

election go much, much more smoothly when we do

sounds like a best practice around the state to

MS. HOWELL: Ms. Blake, you pilot a -- what

August 30, 2018 Page 101 Page 102 1 there should be a system that gets people to the 1 people who do not have the same educational 2 2 polls, or -- or I believe the future of voting is background as people who come from larger 3 going to be web-based. You know, when we 3 communities who traditionally have had more 4 start -- the system that we have now, 16 years 4 access to education and technology. So if we're 5 ago was before the iPad and there was a pilot speaking about going to a totally electronic 6 program in West Virginia that they started in two 6 web-based type of voting, I think we need to make 7 counties for military families to vote via -- it 7 sure that the people in the rural counties 8 was Android or Apple phone. And I don't know if 8 actually know how to use those systems because if 9 the answers are out about how successful that not, what you do is you disenfranchise a large 10 was, but apparently they're going to run the 10 population of people because they will not go to 11 pilot into 50 counties I believe. It'll be 11 the polls if they feel that they don't know how to use the systems. 12 general election this year, so that would improve 12 13 accessibility for a lot of people. And I don't 13 MS. KUHNS: So it is not my indication 14 know -- I know there's security concerns, but it 14 that mobile voting should ever be a surrogate for 15 seems an absentee ballot has much more security 15 going to the polling place. Americans love to go 16 concerns than watching technology which I can 16 to the polling place. We're entitled to go to a 17 about, but ... 17 polling place. Don't think we need to eliminate MS. HOWELL: I can too, but I'll let our 18 18 it, but I think that it could help with a lot of 19 security experts speak to that. 19 accommodation issues to have that as an 2.0 opportunity. Ms. Jones, are there unique needs for our 2.0 21 21 aging population in Georgia? MS. HOWELL: Ms. Blake, did you want to add 22 MS. JONES: I keep hearing that we're going 22 something? 23 to web-based voting, and the only concerns that I 23 MS. BLAKE: Yeah, I was going to say -- so 24 have with that is in rural counties, whether we 24 regardless of what system you end up selecting, 25 25 like to admit it or not, we have a large group of whenever you change voting systems, it's always a Page 103 Page 104 1 challenge, and outreach to voters is really help improve familiarity with the voting systems. 2 important when you change systems. So I would 2 You've worked with other states, have you seen 3 encourage you to reach out to the disability 3 other best practices in other states that have 4 community here in Georgia, the National Δ more promising practices, that enhance 5 5 Federation of the Blind who I'm affiliated here accessibility for individuals with disabilities? 6 in Georgia, National Federation of the Blind of 6 MS. BLAKE: Yeah. Poll worker training is 7 Georgia. There are little chapters that I'm 7 really key. You know, I think that's probably 8 affiliated, they have a state convention every 8 the biggest complaint that I get from our members 9 q when they show up at the polls. Poll workers vear. 10 So all of the local elections officials, I 10 haven't set up the machine because they don't 11 encourage you to reach out to those little 11 know how to set up the machine. 12 chapters and the state affiliate. Take the new 12 So training poll workers is really key and, 13 voting machine to a chapter meeting so they can 13 you know, again, engage, you know, the local 14 try it out before elections. Take it to the 14 community, the local disability community in that 15 state convention. I'm sure there are other 1.5 training. Be sure that the training takes place 16 organizations of disabled people here in Georgia 16 on an actual machine. It's not just a PowerPoint 17 that, you know, also have local chapters, 17 that they're watching. Reach out to the 18 affiliates, and, you know, those are all great 18 disability community just to serve as poll 19 opportunities for y'all to reach out to them, 19 workers. You know, what better person to have 20 provide them opportunities to practice voting on 20 monitoring that machine and setting up that

21

2.2

23

24

25

machine and making sure that it works than the

vested interest in that machine actually working.

So those are some of the best practices that

person with disabilities, someone who has a

I would suggest and encourage.

2.0

q

2.2

2.5

MS. HOWELL: Ms. Kuhns, I know you highlighted some of the challenges. Are there also best practices that you think that a person should be aware of or you would like to recommend?

MS. KUHNS: Well, a couple things that I

ms. KUHNS: Well, a couple things that I read about is that -- so being able to register as permanently disabled for the purposes of voting, Missouri did that, and so not having every year to fill out an application, have it come to you. We don't if you're -- you might not vote in every election because, again, transportation's hard and you have a disability, you might be in the hospital. And you have to vote every three years in order to stay on the rolls. Make it as easy as possible to vote for people who experience difficulty getting to the polls. So just have a permanent registration if I have to vote from afar.

Also, there was another statement. I'm not sure which one it was because, again, people with physical disabilities a lot of times have trouble using the machines, and you can have somebody help you do it, but you're -- once they allow where you can use -- you can have a stamp, you

Page 107

light-colored font or a print, and it's very difficult to be able to see it to read it, and the more your vision is compromised, the more difficult it is for you to read.

So looking at all of those things, whether you're looking at shaping a system, making sure that people who have very low vision are able to read and access the voting ballot.

MS. HOWELL: For any of our panelists, are there any of the current features in our current system or in our current practices that we need to make sure that we retain, that really are helping Georgians access voting?

MS. BLAKE: Well, you know, I mean, I think what you have now is a universal system which is -- which is the ideal. I mean, the ideal is a system -- everybody uses the same system. So, you know, if it's possible to maintain that, I would strongly encourage you to do that. I know the financial realities being what they are these days that is not the case. I come from a state where we used to use the same machines we use now. Everybody used the same machine. You know, it just make things so much easier in so many ways, you know, from the administration of the

Page 105

2.0

1.5

2.0

2.2

2.5

can sign your name with a stamp because some people just physically cannot sign their name, but they can vote. They have a right to vote. They have opinions about who they want elected and the policies they want them making. So those are just a couple of things.

Page 106

MS. HOWELL: Ms. Jones, are the things that you've heard from your group, the aging population that they say have -- are policies and practices that have helped them have access?

MS. JONES: I think that most of the older adults that are very active in the electoral process appreciate that the print, you know, is large, and so that helps. The lighting has improved at a lot of polling sites, so that has been very helpful to a lot of older adults voting. I think that if you're looking at changing the technology that we use to vote to remember to use the larger print, of course, and also the type of print, you know, the font, you know, making sure that it's, you know, user-friendly for anyone to be able to read and also the background of the screen being — having a lot of contrast to the print because if you're using a dark screen and you've got, you know, a

Page 108 elections, to poll worker training, to, you know,

just so many things. You know, everybody's ballot, you know, is the same. You know, and if it's possible, you know, to maintain that here, I would really strongly encourage you to do that, you know, so, you know -- and, you know, looking at the -- after looking at by mail that's another option, rather than the traditional poll-based. That is another option. Of course then you have to have an accessible way for a disabled voter to access that, access that ballot privately and independently, marking that ballot privately and independently.

And, again, electronic ballot delivery is an option there, so universal voting systems are so —— yeah, yeah.

MS. HOWELL: I'm mindful of our time so if there is for our panelists -- I know certainly Ms. Kuhns, if there is one thing you want to make sure that the commission takes away from our discussion today, what would that be?

MS. KUHNS: So even if you have all of the perfect systems in place, the best technology for the most impaired for the most accessible, there is no accessibility without availability, so if

Page 109 Page 110 1 a disability. the policies aren't in place that poll workers 1 2 2 know what the technology is, what the rights of And then our right to be able to mark our 3 people that there are, and that it's checked the 3 ballot privately and independently, to be able to 4 4 cast a ballot that's going to be a secret ballot day of, that these systems are in place, that 5 is the same as that for everybody else. And I 5 people know how to use them, and that there are 6 contingencies because every person with a 6 think that's really the bottom line. And 7 disability is not the same, every person with the 7 whatever system will guarantee that, I think that 8 same disability experiences things differently. 8 would be the one that would be -- meet your needs 9 So even if you have all of the right things in 9 the best, meet the needs of all of the voters. 10 place, you've got to have contingencies and there 10 MS. HOWELL: I just wonder if there are any 11 should be a place where we can report this, where 11 commission members that have questions. Yes? 12 it's publicly -- it's publicly available, not to 12 JUDGE MCCOY: I just have a couple of 13 the individual but the problem encountered at the 13 comments. I'm Darin McCoy, probate court judge 14 polling place, and also a record of how that 14 and election superintendent from Evans County, 15 individual problem was solved. 15 Claxton, Georgia. 16 MS. HOWELL: Ms. Jones? 16 So just to make sure everybody understands, 17 MS. JONES: The take away, to keep the 17 first of all, about the referendums and the 18 system as simple as you possibly can so that it 18 amendments. They definitely can be confusing. 19 remains accessible to all voters, and that's all 19 There is a summary that is provided by the state I have to say. 2.0 of those amendments in very plain lay terms. It 2.0 MS. HOWELL: Lou Ann? Ms. Blake? 21 21 is available in each county election office prior 22 MS. BLAKE: Well, I think -- I think it's 22 to the general election, and I believe that is 23 important for commissioners to keep in mind that 23 also available online from the secretary of 24 24 the right to vote for a voter with a disability state's office, and that is a very helpful tool 25 is no different than the right of a voter without 2.5 that I promote in my county for people to prepare Page 111 Page 112 1 prior to their voting to understand what those handling that EBD, which is what election 2 amendments mean. And also, I know you are aware, 2 officials call it? MS. BLAKE: Yeah. So I have used the 3 but I want to make sure everybody is aware that 3 4 there is a provision currently in Georgia law for 4 Maryland electronic ballot voting system, what 5 5 the disabled voters who were not able to have they call an online marking tool since it's been 6 transportation or for whatever reason to get to 6 available. And so what happens with that system 7 7 is I get an e-mail, it has a link to a website the polls and they are provided a ballot for 8 8 every election in the election year by making where you log in and you access the ballot on 9 just one application and indicating that they're 9 that website and mark the ballot, the ballot is 10 either disabled or elderly. And that is the big 10 very accessible. 11 11 advantage that we need to promote to the Now, to be accessible the systems have to 12 disabled. 12 use websites or an HTML ballot, has to be 13 MS. HOWELL: Thank you. 13 compliant with the web content accessibility 14 JUDGE MCCOY: Thank you. 14 quidelines, 2.1(o)(a), and that covers all 15 MS. HOWELL: Yes? 1.5 disabilities, so, you know, it's not just -- it doesn't make it accessibility to somebody who 16 MS. BOREN: Yes. I'm Nancy Boren. I'm from 16 17 Muscogee County, Georgia, and I have a question 17 uses a screen reader or screen application. It 18 for Ms. Blake. 18 covers, you know, other disabilities as well. 19 When you discussed the electronic ballot 19 So I, you know -- and you see my own access 20 delivery for blind voters, once you receive that 2.0 technology, my screen reader, my screen 21 e-mail, how will you handle that electronic 21 magnification software. I'm able to mark that 2.2 ballot delivery? Because as we currently do it 2.2 ballot privately and independently and I'm just 23 for our military, they receive an e-mail, but 23 using my keyboard. So once I finish -- once I 24 then they have to put it onto a piece of paper 24 mark the ballot, I then print it out and mail it 25 and then mail it to us. How would you suggest 2.5 just like anybody else.

2.2

23

24

25

But if it's thrown out because a signature

MS. HOWELL: Thank you all for your

questions and contributions, and thank you to our

doesn't match or something, then again,

disenfranchised.

August 30, 2018 Page 113 Page 114 1 And, you know, there's a number of systems 1 MR. MCDONALD: Yeah. It was my job to write 2 2 that are available that are similar to the those. 3 3 REPRESENTATIVE FLEMING: Amy, just one Maryland system. A number of different -- you 4 know, Dominion, Five Cedars, Prime Three. 4 comment if I could about that. It's humorous to 5 There's a number of them out there. 5 say that it's written as complicated as possible, 6 MS. HOWELL: Yes? 6 but the courts will actually overturn the MR. MCDONALD: I wanted to piggyback on 7 election results if they determined that the 8 Mr. McCoy to make one clarification. The 8 question legally was not written properly to ask 9 language on those referendums and those the right question. 10 amendments, those are determined by the 10 So that is a constant balancing act when the 11 legislative process at the capitol. So when 11 legislature is trying to ask the public through a 12 they're drafting it or writing it out, a bunch of 12 voter referendum a question or a change to our 13 lawyers like me -- I once told a civics teacher 13 constitution. Are we going to set aside what the 14 that came to the capitol it was my job to write 14 courts are going to demand because it legally did 15 things as complicated and ununderstandable as 15 ask the right question versus putting it in plain 16 possible to make sure lawyers had jobs. 16 enough language? 17 So we don't write these things so -- it's 17 So it's a constant battle that we have to 18 out of the hands of the process once it gets out 18 try to get to a happy medium between those two 19 of there, and I think that really needs to be 19 and actually give the voters something, number 2.0 clarified because I think the election officials 2.0 one, they can understand, but, number two, giving 21 21 do the best job they can in order to make that what the full election contemplates because it 22 communicated, but the way it's written is part of 22 was properly written. 23 23 MR. MCDONALD: One thing that you said in the process. 24 MS. KUHNS: And I think it's confusing for 24 passing I found interesting was, you know, a big 25 all of us. 25 point of verifying who someone is is a signature Page 115 Page 116 1 or some type of verification. You said that panelists for your participation today. 2 2 could be a challenge for someone. I think you (Applause) REPRESENTATIVE FLEMING: Next we have our 3 said something about a stamp or some type of 3 easily functional (indiscernible). Is that 4 4 panel that Nancy Boren, Muscogee County elections 5 5 and registration director, is going to moderate something that's mandated by federal law or is it codified anywhere? Or is that -- is that 6 6 for us dealing with intergovernmental 7 something that would be helpful if it's codified 7 coordination. I think we're going to get into a saying that this must be accepted? 8 8 little bit about the state and the locals and the q MS. KUHNS: It would be helpful if it was 9 board of elections all work together and how this 10 codified because the process of -- literally, if 10 new system may go forward. 11 I don't have any hands, how do I sign my -- and 11 MS. BOREN: All right, good morning. I 12 there are processes by which you can learn to 12 think we've heard what everyone wants to see in 13 make your mark, but something that's consistent 13 the new voting system, and now I think this group 14 so that it can be verified at other places. is going to tell you how to get -- we're going to 15 Because if somebody's stuck with a provisional 1.5 kind of talk about the nuts and bolts of the 16 ballot, and I guess I said somebody needs to -- I funding, whether it's state funding, whether it's 17 don't know if I said that but if somebody has to 17 county funding, city funding, how we're actually 18 do a provisional ballot, somebody better follow 18 going to accomplish getting a new system in the 19 up on that in the next three days or else 19 state of Georgia. 20 somebody with a disability is disenfranchised. 20 As you know, the burden of the expense is

21

2.2

23

24

2.5

probably going to fall on the state as well as

we're going to talk about that. I've written

down some of the quotes as I listened to the

other panels and it's been a great opportunity.

many of the counties and some of the cities. So

2.2

23

24

25

Association, but I've been in city government for

26 years before I started with GMA. So I did

serve as an election superintendent before I

that had a tie on a liquor referendum, so ...

left. I think we were the only city in Georgia

August 30, 2018 Page 117 Page 118 1 Let's not let perfection be an enemy of 1 32 years. My position immediately before 2 2 greatness. I love that. Senator Thompson said elections was the affirmative action officer for 3 3 that for us. And we heard from the three panels our county. all the things that they would like to see. Δ But, again, I've been in elections for 23 4 And so I think this group talks about from 5 years and I've had the privilege of implementing 5 the state perspective, the city perspective, and 6 6 optical scan in Muscogee County in 1996 so I'm 7 then the county perspective how we attain the 7 very familiar with the aspects of optical scan 8 funding and the ability to get what the state of 8 voting. 9 Georgia and the people in the state of Georgia Of course, technology has changed guite a 10 want. 10 bit since 1996, but I do understand the unique 11 So as we listen to Ms. Young -- or Mr. Young 11 challenges that are posed through optical scan 12 and Ms. Lewis, they said the object is 12 voting. We now have, of course, the touchscreen 13 collaboration because everyone is paying for it. 13 voting, and I'm interested in moving forward to 14 And that's true for everyone in the room. 14 see what the state of Georgia will have. 15 Representative Setzler said: We must fund the 15 To my right I have Chris Wells with the 16 right technology for the right purpose. 16 Governors Office of Planning and Budgeting. 17 And so I think this group can provide some 17 If you would like to take a moment and introduce yourself. 18 information as far as funding. I'll introduce 18 19 myself and then I'll ask each person on the 19 MR. WELLS: Good morning. My name is Chris 2.0 committee to introduce themselves and give a 20 Wells. I've been with the governor's office now 21 little bit of information. 21 for the last five years and I've had the 22 My name is Nancy Boren. I'm the director of 22 opportunity to work as an analyst coordinator and 23 elections and voter registration in Muscogee 23 currently as a division director. We noticed 24 24 back in our division that after public safety, County, Georgia. I have held that position for 25 25 23 years and I have been in city government for after health care, as well as health-care Page 119 Page 120 1 education, our division kind of has a little bit As you may know, in Georgia there are 538 2 of discretionary agency, so we have to fight and 2 cities, so we have a lot of needs. The branches 3 claw a little bit to make sure our agencies 3 of our municipals range from anywhere from Atlanta from almost 500,000 to the city of Edge 4 receive all the help they need. But part of my 4 5 5 job in the everyday work is to provide Hill which has a 24 population. So you can see we're very unique. In that population, 70 6 independent analysis associated with any 6 7 recommendations that our agencies may provide. 7 percent of those are under 5,000 population, 8 I previously worked with the Georgia 8 so -- and even 44 percent of those are less than q Department of Labor as a statistical analyst and 9 a thousand population. 10 previously worked with the executive budget 10 So you can see that we have to look out for 11 office in South Carolina. 11 our smallest to our largest cities. So there 12 MS. BOREN: Thank you. 12 will be some concerns with the funding, what 13 To my right, I have Pam Helton. She 13 we're going to be required to do, how is it going 14 represents the Georgia Municipal Association, and 14 to affect them, is there going to be some kind of 15 that's kind of the city perspective. Counties 15 legislative requirements asked of them and also and cities often are different, so she will give 16 16 is there going to be the availability of 17 you maybe a city perspective of funding and the 17 education and training that will be needed? So I 18 approach that cities may take. 18 think there's a lot of questions that some of our 19 MS. HELTON: Thank you. 19 cities have as you go through this process to try 2.0 I am Pam Helton with the Georgia Municipal 20 to address.

21

2.2

2.3

24

25

Todd Edwards. Todd represents the county perspective. He is with the Association of County Commissioners of Georgia.

MS. BOREN: And next if we could hear from

MR. EDWARDS: Thank you very much.

establish some guidelines and some goals related

Page 121 Page 122 1 And I'm Todd Edwards. I'm the deputy 1 until the end, the big concern was over cost of 2 2 legislative director with the Association of replacement. I think the last versions of the 3 3 County Commissioners. We represent all hundred bill had it. I was hopeful that that did not pass but I will commend this commission for 4 and fifty-nine counties. Elections are a big 4 part of what we do. I won't go into all of it, 5 getting together. It's a perfect example of 5 but we certainly -- Pam from the Municipal 6 6 working with your local governments. I know 7 Association, cost is a primary factor to Georgia 7 there's at least four local election folks on the 8 governments, to county taxpayers not only 8 commission. Getting their input, it's very 9 up-front but the purchase of the machines, for 9 important. They are our experts. I rely on them 10 the subsequent training, the replacement of those 10 as well. But this is a key example of 11 machines, et cetera. That certainly weighs in in 11 coordinating among our government in Georgia to 12 any factor. 12 try to get this right. 13 What I do with ACCG, I've been speaking on 13 Thank you. 14 intergovernmental coordinator. I'm a lobbyist on 14 MS. BOREN: Last but certainly not least is 15 the advocacy side. So I work with the general 15 my co-election official Nancy Gay from Columbia 16 assembly on the front end when they're 16 County who is hosting this wonderful meeting 17 considering legislation such as over, I think, 17 today. 18 five or six bills last session dealing with the 18 MS. GAY: Thank you. Thank you for everyone 19 replacement voting machines. We work closely 19 joining us in Columbia County. I am Nancy Gay, 2.0 with the secretary of state's office, and I know 2.0 the executive director. I'm kind of a newbie 21 21 the office works closely with our local election here. I've been the director for five years so 22 superintendents. 22 I'm still kind of learning the way. I've been 23 23 with the county for 18 years. Served the first And right up front, I just wanted to speak 24 on that same note about intergovernmental 13 as the registrar for the county. So I do have 24 25 25 coordination. With all those bills last year, a little bit of experience. I went through the Page 123 Page 124 1 transition from the paper ballots back in 2000, 1 to how to submit a request of this nature in the 2 2002 and the DREs, so \dots it was fun. It was 2 system. Currently, just based on the rules and 3 entertaining and the public really -- I thought 3 regulations, we have a certain amount of capital 4 they received it well. So going in to this new 4 bonds that agencies are allowed to request. And 5 transition should be exciting. We do have two 5 so we're -- we disseminate that particular amount 6 cities in Columbia County that are kind of 6 across most of our agencies. 7 different in size. Harlem is maybe 2,000 7 In this particular year, we provided the 8 registered voters and Burke County is right at a 8 office of the secretary of state about 25-million q thousand. So it should be interesting to move 9 in a bond planning amount. And so by that forward with this. 10 10 process, we're able to evaluate for the next six 11 MS. BOREN: Mr. Wells, if you could provide 11 months of what is the total cost, look at this 12 for us, coming from the governor's office, the 12 panel, look at what the recommendations are, work 13 process of obtaining funding for a statewide 13 with the general assembly when the governor 14 issue like this. submits his recommendation in January, make a 15 MR. WELLS: So this is actually a perfect 1.5 determination of what will that ultimate number 16 time. Usually September 1, by law, agencies have 16 be. 17 to submit their agency recommendations as well as 17 So right now we're under the process of just 18 their budget. This year because we have the 18 evaluating; knowing that the current 19 holiday it will be September 4th, but during that 19 administration as well as the next administration 20 time, agencies will be able to submit their 2.0 and general assembly would have a say in terms of 21 requests. 21 what that ultimate number will be. And so 2.2 The office of the secretary of state is 2.2 because we're working closely with our agencies 2.3 23 actually within our division and so we've been and their counterparts, we'll know in January 24 what that initial number will be. We'll know 24 working with them throughout the summer to

25

throughout the legislative process what the

Page 125 Page 126 1 counterparts in the House and Senate may 1 start seeing a lot of the recommendations related 2 2 recommend. And usually around May, the governor to funding that come about, and so that is 3 has an opportunity to sign the budget, and from 3 usually where we see a little bit of movement, 4 that point, whatever number is settled on between 4 and again in May, you'll be able to see what the the general assembly and the governor's office, governor may sign and prepare. The decisions 5 6 it may be a bond. And if it's a bond, we usually 6 will be made in terms of bond allocation, what's 7 sell bonds in July of each year. And so we would being sold, based on those particular 8 probably see a lot of movement, again, in May 8 recommendations. 9 when the governor signs the budget, in July when MS. BOREN: And I do believe I'm correct, 10 those bonds come up for sale, and potentially 10 with the implementation system that we have now, 11 provide the office of the secretary of state the 11 the state expended \$54 million if that is 12 opportunity to enter into any type of RFI to be 12 correct, I believe, in 2001, to implement the 13 to secure whatever recommendations that come with 13 system that we have now. That does not include 14 this panel, the general assembly, and the next 14 funding that each of the counties and cities 15 governor. 15 chose on their own to purchase additional 16 MS. BOREN: So kind of May is the deadline 16 equipment. 17 or the focus point for budgetary items? 17 So from the city perspective, cities have 18 MR. WELLS: Ultimately, an opportunity to 18 the option currently, under current law, to use 19 see what the appropriations process and what the 19 the touchscreen voting that we have or they can 2.0 general assembly may request also during that 2.0 use other technology. If you could speak to that 21 21 time. So usually around January, I'm assuming just a little bit. MS. HELTON: Actually cities like being able 22 that this will probably be one of the topics that 22 23 will be of discussion and so as you see the 23 to have that choice, to be able to use a paper 24 24 ballot or the old sheet machine or optical scan appropriations bill pass through the House and 25 25 or even to contract with the counties to hold the Senate, through conference you'll probably Page 127 Page 128 1 their elections for them. So they like having is when you -- well, even though the state 2 that option to go do that, and I think that's 2 initially paid for it, replacing it over the 3 important. 3 years is not always easy. You have to buy some used. A lot of times it comes with technical 4 MS. BOREN: Okay, and you can tell us about 4 5 difficulties, so I think there's a wide county input that you get as far as: We don't 5 6 have enough money or, you know, our county needs 6 acceptance of replacing it, and then when they do 7 to buy a fire truck and we don't have enough 7 get them, they're not in good shape. 8 8 So we're on board. We look forward to money for extra voting equipment. q MR. EDWARDS: Well, because I usually tell 9 working with you, but I think it's -- again, as I most folks about what I do for living or how to 10 10 stated earlier, this is the time and we hope to 11 explain everything most people deal with, it's 11 get it right. 12 going to be about money one way or another. I 12 MS. BOREN: And, Nancy, I -- Nancy and 13 did call several of our members, including our 13 Nancy. I do believe that in the county --14 elections folks, prior to coming down here. 14 obviously, I don't know what priority elections 15 Our overall thoughts, if we do agree that 1.5 are as far as your county expenditures, but often 16 it's time to replace Georgia's voting equipment, 16 we see that it's fire trucks and public safety 17 I think that's pretty clear obviously security is 17 and salary adjustments. How would you say that 18 an issue: tampering, hacking, all of that. We do your county would be receptive to expending lots 18 19 also believe uniform systems across the state 19 of money to change your voting system? 20 will work. 2.0 MS. GAY: They wouldn't. Sorry. I mean, 21 We appreciate the state putting up the 21 fortunately for Columbia County, the -- I might 2.2 funding in advance last time, the state and 2.2 be going out on a limb here, where we might be 23 federal government. We hope to work together 23 better off financially -- not to say we're loaded 24 with them this year again in that regard. I 24 or anything, but the cost is a factor and nobody 25 think some of the concerns with the old equipment 2.5 wants to come out and come out of pocket for it.

Page 129 Page 130 1 So if the state can mirror what they did back in 1 affluent counties more than it will the larger. 2 2002, I think that would be beneficial to all of 2 I mean, obviously, it's going to be a larger 3 the counties and the municipalities in the state. 3 expense with all of the additional equipment for 4 I know for our two cities, they would have a hard the larger counties, and you're going to find 4 time funding anything, and so they depend on us 5 that they may be able to have a little bit more 5 6 to conduct the elections. And we do have a 6 leeway. And I can't speak for all of them, 7 contract so I try to keep their expenses as low 7 certainly, in this disregard, but it's going to 8 as possible. But for the county as a whole, I'm 8 have a disproportionate impact on Georgia's rural 9 going to go to my county commission and ask them 9 and smaller counties right at a time when they 10 for additional money to buy additional equipment 10 can least afford it. 11 because I like to be overly prepared. 11 MS. HELTON: May I? 12 MS. BOREN: Mr. Edwards, do you see 12 MS. BOREN: Sure. Please. 13 different concerns from counties that are more 13 MS. HELTON: We've probably got about half 14 rural? Say economic issues? Do they have 14 of our cities that still do their own elections, 15 greater concerns? 15 that do not contract with the counties to hold 16 MR. EDWARDS: Certainly, and that's usually 16 their elections. So we really have to think 17 the case in most issues that we deal with across 17 about those cities too as we move forward with 18 the state. A panelist mentioned earlier the 18 this process. 19 difference between the size of the cities in the 19 REPRESENTATIVE FLEMING: Nancy, I have a state. The counties are the same, we have question if I may --2.0 2.0 21 21 several right around or below the 2,000 MS. BOREN: Yes. 22 population, and, obviously, four or five in the 22 REPRESENTATIVE FLEMING: -- that I think 23 metro area that are right around or above 23 blends well with this portion of the program. 24 24 1 million. Any decision like this will We're here to discuss getting a new voting system 25 25 definitely impact the smaller, rural, less for the whole state of Georgia. Some people are Page 131 Page 132 1 throwing around the figure \$100 million, plus or had had a problem and you had to replace them. 2 minus depending on what kind of system we get. 2 So talk about the status of our current 3 Many of us remember back in 2002 how big a change 3 machines and why we're here talking about 4 that was for some people to learn how to touch 4 spending all this money on new equipment. 5 MS. GAY: Well, I can only speak for 5 these fancy computer things and have their vote 6 recorded. And we tend to forget the trepidations 6 Columbia County, and currently we do have 94,000 7 that some people had for a system. It worked out 7 active registered voters. If you combine the 8 8 inactive, that's a hundred and thirty thousand. pretty well and served us well. q So I got a question the other day from one 9 In our inventory we have just over 500 total 10 of my constituents that said: Hey, why do you 10 voting units. Some of them, the bulk of it, I 11 want to change? What's wrong? I have learned 11 think 360 of them, are the original 2002 R6 12 how to do this thing now. Why do we want to get 12 models. Out of those 40, maybe 50, of them no 13 new machines? 13 longer work. We do -- we have been very creative 14 And, Nancy, I asked that question maybe to 14 in making them last this long. Some of them 15 you or anybody else. I remember when you came to 1.5 might have some duct tape on them, but, you know, they still work. 16 the capitol and testified before the committee 16 17 that I was chairing about this issue. You talked 17 The actual voting unit itself is great. The 18 about the fact that when we first started in 18 life of it has done very well. In 2016, I think 19 2002, Columbia County had less maybe than a 19 it was, I purchased -- or it might've been last 20 hundred thousand people. Now, it has close to 2.0 year, I purchased a hundred and twenty newer 21 maybe a hundred and sixty thousand. You've had 21 machines from California because they don't make 2.2 to go out and get new machines because, number 2.2 these units any more, so, you know, as a growing 23 one -- and you commented on this -- you didn't 23 county, I am -- I'm really stuck. 24 have enough, and, number two, some of the ones 24 So I hope we don't grow too much more right 25 you had had -- like any other piece of equipment 2.5 now because I'm at my limit. I don't have any

2.2

23

24

2.5

counties and voters in the state to pull it off.

standpoint, this is going to sound crazy, I'm not

microphone) I'm sorry. For me, from my

MS. GAY: (speaking out of the range of the

August 30, 2018 Page 133 Page 134 1 more units to put out. So if they break, then 1 from starting or less now. 2 2 that means longer voting time for the voters. Todd, do you have any perspective on behalf 3 MR. EDWARDS: May I please add to that? She 3 of the counties as to how that could work? MR. EDWARDS: Well, obviously we're aware 4 brings up a good point. And, you know, it is a 4 partnership. Obviously we're asking that the 5 of --5 6 state advocate for initial costs up-front, but 6 Do you want it? 7 that doesn't mean that the counties are MS. GAY: No. 8 necessarily getting a free ride. There are all 8 MR. EDWARDS: Okay. We're aware of the 9 sorts of other costs involved that concerns with the current machines with the 10 particularly -- we mentioned before the training 10 issues. They're being looked at. But also are 11 for the replacement. That might be difficult. 11 greatly concerned with the impact this would have 12 But that was a big -- you know, one of the 12 on such a quick turnaround prior to the November 13 biggest questions we get is, you know, how --13 election. 14 there are concerns are over replacement issues, 14 I don't think there's one magic bullet 15 being able to find them and the condition of 15 that's going to solve all of this, but I --16 them. 16 you've got to balance with what are the potential 17 And so it's not -- it is a partnership with 17 risks, what sort of complications would switching 18 both paying (speaking out of microphone range). 18 in a short time frame be. You're going to have 19 Sorry. 19 to require -- you know, require the light SENATOR STRICKLAND: Nancy, I have a 2.0 2.0 inventory. 21 21 I talked to some of our folks. Train local question as well on making change. There's 22 currently a federal lawsuit pending that's 22 officials and folks on how to vote on whatever 23 asking -- the group's asking the state for the 23 ballot you put out there. I think there is going 24 paper ballots for this fall's election, which I to be confusion. I think one thing we heard 24 25 25 earlier, at -- I believe it was the last meeting believe early voting is a month and a half away Page 135 Page 136 1 of this commission about Virginia doing it in 1 worried about the staffing or the poll worker. I 2 such a short time frame. 2 would be more concerned with the confusion for 3 When Virginia did it, it already had 3 the voter if you try and make that kind of change 4 legislation passed the previous year that set out 4 in such a short time frame because it's just 5 5 a two- or three-year time frame to replace all of unfair to them, having to try learn something on them. They were in the middle of the process and 6 6 short notice. And the confusion of it, they 7 when they got the -- I guess it was a 7 don't need that, but that's not what this is 8 recertification of the DRE systems, at that 8 about, so ... q time -- and I wrote down some numbers -- there q MR. EDWARDS: If I -- and real quick, one of 10 were only 13 localities in the state that had to 10 the questions -- I did follow the Virginia 11 make that change. Or I think there were about 20 11 Association of Counties. One of the big issues 12 total. Seven of those are already in the 12 they had was making sure if they're going to do 13 process. We're dealing with only a couple 13 something like that, the rule was in place of 14 thousand -- let's see, about a hundred and ninety 14 what is a vote, what counts as a vote. We talked 15 thousand voters out of 5 million. That pales in 1.5 about overvoting and mismarking a ballot. You're 16 comparison to the task we would have in front of 16 going to have to have those rules in place to 17 us today here in Georgia. 17 make sure that the voters and the poll workers 18 We do have concerns. Again, you're going to 18 understand them beforehand and I'm not sure we 19 have to weigh the benefits of us sticking with 19 do. 20 the current machinery and paper ballots, but I 2.0 MS. BOREN: And just a little perspective 21 believe it would be quite challenging for 21 from me. Again, I implemented the optical scan

2.2

23

24

25

voting in Muscogee County in 1996, and at that

time, we did not have a vote review panel to determine voter intent. And so many of the

ballots that were voted --

Page 137 Page 138 1 I went back and looked at the 2000 1 imagine it would be, and I would hope that we 2 presidential election. As we were converting to 2 could consider putting that into the contract 3 the DRE voting, many of the choices were clear, 3 moving forward. 4 who the voter wanted to vote for but because of 4 MR. EDWARDS: I think our voters would be current legislation, we could not reject that 5 5 most pleased with that, ma'am. 6 ballot. It was rejected as an overvote even 6 DR. LEE: Thank you. So this may be a crazy 7 though they had voted for a candidate and then 7 question, and if so, forgive my ignorance. So it 8 had marked or bubbled-in the write-in line and 8 seems if we spend all of the money up-front, we 9 written the same candidate's name in. Voter kind of tend to stick with it for a long time. 10 intent was extremely clear, but it was an 10 So from a cyber security point of view, we may 11 overvote because the law wouldn't provide us to 11 establish too short (indiscernible), right, to 12 send it back or to give it to that voter for them 12 meet with the degrees of threats. 13 to fix. 13 So why can't we lease the systems? Suppose 14 So there are a lot of issues that you have 14 we keep the templates the same so we don't have 15 to think about in paper balloting. 15 to cause voter confusions. So can we do anything 16 Ms. Bailey, I believe you had a question. 16 like that? MS. BAILEY: Yes, I do. This is Lynn Bailey 17 17 MS. BOREN: So the possibility of leasing 18 from -- local election official from Richmond 18 new equipment to use it through an 19 County. It's a question going to -- going back 19 intergovernmental lease through a company, is to cost. I know when we made the transition in that your question? That's definitely a legal 2.0 2.0 21 21 2002, the counties were able to write it on the question, and I'm sure that somehow we would be 22 contract to purchase additional equipment. 22 able to do that. 23 And I don't know if you've heard from any of 23 SECRETARY KEMP: Well, I would say I think 24 your constituents, Mr. Edwards, from a county's 24 that's a very good question. I think that is 25 25 perspective if that's desirable, but I would something that certainly this commission can talk Page 139 Page 140 1 about. It's certainly an option. I mean, we've certain things which -- for example, in using 2 had that option with other systems that we have. 2 bond funds, there are certain requirements, like 3 I think that also is up to the vendor community 3 the state has the only asset and certain things 4 and what they're willing to do and then also what 4 of that nature. So I think the secretary made a 5 the legislature would be comfortable with. You 5 perfect point in terms of it'll be a 6 go through the appropriations process to decide 6 collaboration effort from the governor's office 7 what's the most cost-effective way to do that. 7 with the general assembly to determine what's the 8 So I think that's certainly something that will 8 best approach. 9 remain on the table in my opinion. q And I think that once the approach is agreed 10 REPRESENTATIVE FLEMING: I agree. 10 upon, I think, the governor's office and the 11 MS. BOREN: And my one fear with that would 11 office of planning and budget would definitely 12 be, again, voter confusion. You have one set up 12 work very hard to make sure that the money is 13 voting for a couple of years and then you change 13 available and that it's -- basically, it can 14 it again. And there's that upward education, execute being able to get the money to our 15 that you have to educate voters. We have 1.5 partners at the local level. MR. MCDONALD: Follow up? 16 6 million voters in Georgia. That would be a 16 17 difficult process to change paperwork and 17 MS. BOREN: Yes. 18 procedures over a short span or period just 18 MR. MCDONALD: This might be a question for 19 because you think you have a better technology. 19 him (indicating) from a technology standpoint, 20 I think we want to move slowly on that leasing of 20 but when we talk about the technology, we have 21 equipment to use for a short period of time. 21 machines that actually process the process. But 2.2 Again, that's my opinion, and I don't know 2.2 the cyber security, is there any way of 23 how you want to respond to that. 23 segregating those two things in the sense that we 24 MR. WELLS: Again, from a technical side, 24 have the same process for the voter utilizing 25 like I said, funding, sometimes once you to fund 2.5 pushing the buttons, but as technology evolves,

Yes, secretary.

Page 141 Page 142 1 the cyber security in there is something that 1 state of Georgia, that we continue as we have the 2 2 might be being leased and actually evolving with system today. Our election system has no 3 the same system so that what we're not doing is 3 Internet accessibility. So when we talk about 4 Δ cyber security, it's more or less for our changing whole system every time we have a cyber-security issue. Rather the system is the 5 voter-registration side, our poll-book side when 5 6 same but we're treating the security for that 6 you talk about hacking. But when you talk about 7 system different. I just don't know if that's 7 actually counting ballots, votes being cast on 8 even technically possible or is it a one -- is it 8 voting machines, there are no Internet 9 a package deal? connectivity whatsoever. 10 DR. LEE: It's possible. 10 So we need to be clear about that when we 11 REPRESENTATIVE FLEMING: This is just along 11 talk about cyber security, that we're not talking 12 those lines if I may, Nancy. 12 about the vote that has been cast by the voter, 13 The secretary and I were just mentioning 13 again, the vote that are being counted, because 14 that when we began with the current system, the 14 that is not at risk because, again, there is no 15 machines we had in 2002, the back-room process or 15 connectivity there. 16 the behind-the-scenes of how all that is counted 16 REPRESENTATIVE FLEMING: Nancy, if I may 17 and tabulated has changed with different software 17 once again, Cynthia is exactly right. I've made 18 and different changes, although the voter 18 this point when I have received questions about 19 interaction has changed very little. All the 19 what this panel is trying to do in the current 2.0 upgrades behind the scenes have occurred and with 2.0 system. 21 21 When you touch the screen to vote, that significant expenditures sometimes to keep the 22 system rolling, so ... 22 machine is not connected to the Internet. When 23 MS. WELCH: Cynthia Welch with Rockdale 23 those machines are gathered together by Nancy and 24 County, election supervisor. I think it needs to 24 Nancy to tabulate them, the computer that 25 25 tabulates them is not connected to the Internet. be clear that any system that we consider for the Page 143 Page 144 1 It produces a disk which is picked up by, SECRETARY KEMP: If y'all don't mind, I just 2 ultimately, the secretary of state's office and 2 want to make a quick announcement before we go to 3 state patrol office -- or where they pick it up. break. First of all -- well, let me just say 3 4 Transmitting the official results to Atlanta is Δ that we're -- for the commission itself, we have 5 5 lunch next door. This is a commission not by Internet. When it gets to Atlanta to the member-only lunch where going to have kind of a 6 secretary of state's office, the system there 6 7 that combines all of that data from 159 counties 7 lunch-and-learn luncheon with the commission. 8 is not connected to the Internet. 8 We'll try to be back -- if everyone in the q And so that point is well-taken that our 9 audience would be back at 12:55, we'll try to get 10 current -- you can't hack it through getting in 10 started right at 1:00 with the demonstrations. 11 through the Internet. You would have to 11 And please help me thank our last panel of the 12 physically be there just like you would with any 12 morning. Thank you very much. 13 other system if you tried something mischievous. 13 (Break for lunch) REPRESENTATIVE FLEMING: We are going to 14 And may I add that there are paper-copy 14 15 backups of our tabulations that are in three 1.5 begin the portion of our meeting with vendor 16 places: secretary of state's office, in the 16 demonstrations. We have set aside approximately 17 election superintendent's office, and we're 17 30 minutes for each one of our vendors and maybe 18 required to file that third copy with the 18 about 25 minutes for the demonstration and about 19 superior court clerk of that county. So there is 19 five minutes for questions. Of course, I 20 a paper backup of the tabulation that matches 2.0 understand we're starting to a tad late. We're 21 that that goes to Atlanta. 21 not going to penalize anybody for that. I'm 2.2 MS. BOREN: All right. I think that ends 2.2 keeping time. 23 our few moments on the panel unless anyone else 23 We will begin the demonstration portion with 24 24 has any questions. Clear Ballot.

25

And you've got a mic there so I'm going to

tabulator are then aggregated through our central

Page 145 Page 146 1 allow you to introduce yourself and I'll allow 1 set out in front of you, so ... 2 2 Clear Ballot was founded in 2009, and we you to take off. 3 MR. MURPHY: Thank you very much, 3 were founded as an audit system. Our core 4 Mr. Chairman. 4 technology is principally an audit system. So REPRESENTATIVE FLEMING: Yes. 5 transparency, auditability, and resilience is 5 6 MR. MURPHY: First of all, I want to thank 6 built into our DNA. And those are the things 7 the SAFE Commission and the secretary of state's 7 that I have heard over and over today as being 8 office for the opportunity to come in here and 8 critical to what you guys are looking for in 9 introduce us. moving forward. 10 My name is Bill Murphy. I'm the director of 10 We are currently certified in seven states 11 sales for Clear Ballot. I would also like to 11 from around the country operating as a voting 12 thank American Audio Visual Services for helping 12 system and audit system. We like to call 13 me navigate at another conference A/V setup. 13 ourselves a smart digital scan system as opposed 14 It's always fun and exciting. 14 to an optical scan system. And for some of the 15 My goal today is to introduce you to Clear 15 reasons that I'm going to talk about, hopefully 16 Ballot. We are the newest voting system to be 16 that becomes clear. 17 certified through the TAC and I think that our 17 But the whole objective of our company and 18 system aligns very much to a lot of the things 18 the founding principles of our organization are 19 that you guys have been discussing today. 19 to put as much control back into the hands of the 2.0 2.0 jurisdictions to make smart decisions both from a And it's my goal today to show you, through 21 21 a few videos and a demonstration of our product financial perspective, have confidence in the 22 and any questions that you guys might have, what 22 results, and be able to prove that every vote was 23 Clear Ballot is all about and how we can 23 counted as cast. 24 potentially help the state of Georgia to 24 And I'm going to show a guick video now from 25 25 accomplish the objectives that you guys have got a few of the members of our team and a few of our Page 147 Page 148 1 current customers talking about the system and 1 tabulation system, ClearCount, which is what you 2 what it's brought to their organization. 2 saw a little bit of a preview there just now, and 3 (Recording played) 3 then I've got the actual system pulled up. So MR. MURPHY: The architecture of our system 4 4 I'm going to jump into that after I get done with 5 is very simple. We designed it that way. It 5 this quick presentation. starts with our ballot design tool. A lot of the ClearDesign, one of the nice things about 6 6 7 questions that people had mentioned or a lot of 7 our system is that everything is built on a 8 the comments that people mentioned about 8 browser interface. The core system is offline. q accessibility, large-print ballots, UOCAVA q It's a closed system, but we're leveraging a 10 ballots, in our system, none of those ballots 10 browser interface with navigation and it allows 11 would need to be proofed in a secondary way or 11 us to do a lot of things with the usability of 12 remade manually which is one of the limitations 12 the product that -- it's harder in a hard-coded 13 of a lot of the things that are out there now. 13 gooey interface. That's a little geeky. You 14 They have to remake the ballots in order to 14 know, the end result is it's easier to use and 15 tabulate. 1.5 it's faster to do the things that people do on a 16 Our system allows you to maintain the actual 16 regular basis. 17 voter record as it was cast by the voter without 17 Our largest client is Voting Systems King 18 any interpretation by an election official or by 18 down in Washington which is Seattle, which has 19 the technology in the middle of that process. 19 about 17,000 ballot styles. And in King County, 20 So design caption creates those ballots. It 2.0 through the -- when we first started talking to 21 creates the media that's populated to both our 21 them, through the procurement process, I believe 2.2 accessible touchscreen voting system and our 2.2 they said it took them over a week to generate 2.3 23 ClearCast tabulator. their ballots. And with us, they were able to 24 24 And then the results from the ClearCast cut that down to just a couple of days, so a lot

2.5

of exponential time savings and the cost savings

25

in place to capture the ballot image, organize

that data, and then present it to you guys as

Page 149 Page 150 1 involved. 1 when you talk about security, having an identical 2 2 This is a quick video with regard to our paper ballot for every voter that came into the 3 3 precinct tabulator which is an optical scan polls is the best form of security that you can 4 ballot reader. And hopefully this will give you 4 have because you've always had physical record of 5 some idea how the voters in the precincts would 5 the election that you can go back to to check the 6 cast their ballots. 6 results if there is any question. (Recording played) 7 We also have a version of this machine. 8 MR. MURPHY: Now, one of the things that's 8 Same machine, but in this picture here, you're 9 paramount of the ClearVote system is an identical seeing the larger ballot box which is also a 10 paper ballot for every voter. The accessibility 10 secure part of the system; and for the larger 11 voting panel that was up here -- and one of the 11 jurisdictions, a better fit, so ... 12 folks mentioned that, you know, having a ballot 12 Everything with the exception of the 13 that distinguishes somebody that voted on a 13 ClearCast tabulator that I just showed you is a 14 separate system because it looks different, you 14 commercial off-the-shelf piece of hardware. So I 15 know -- is an issue with voter anonymity, and I 15 think we -- again, going back to the idea that we 16 think that it stands in the way of disabled 16 want to allow you guys to make, you know, smart 17 voters voting independently, and we believe that 17 decisions to maintain current hardware, if new 18 the identical paper ballot is key to auditability 18 hardware comes out, we believe that that's the 19 and key to making the system accessible for all 19 best way. 2.0 without any reinterpretations. 20 So from a central tabulation perspective, we 21 21 use commercial off-the-shelf scanners from the Every ballot that is produced through our 22 accessible voting system would be submitted 22 accessible ballot-marking device. We use 23 through our tabulator here. So there would be a 23 commercial laptops, commercial printers which 24 paper ballot for every voter that could be 24 allow you guys to keep the costs down and also 25 25 audited, and I am of the opinion that, you know, allows for a longer usable life and an easy Page 151 Page 152 1 transition should new hardware become available 1 election officials to show you how we interpreted 2 that offer significant value, so ... 2 those marks and present them to you so you can 3 We also leverage the anywhere ballot which 3 essentially validate what we have counted in a tabulation. 4 is a EAC-funded voting wizard. There was some 4 5 5 discussion about, you know, down the road, you And that's going to lead me to -- the know, if different voting channels open up for 6 6 question that I think -- and this is a, you know, 7 ballot-delivery-only voting, we don't do that 7 rhetorical question, you know. If transparency 8 now, but the Anywhere Ballot was designed to 8 and auditability is important, I think that you q allow for voting on any platform. q should look at ClearBallot and consider us 10 So, you know, our whole system is built to 10 because I feel like we're giving you a picture 11 11 and a window into the election that no one else allow you guys to stay ahead of curves so you 12 don't have to rethink your entire voting system 12 can provide. 13 should things change. And if anybody thinks 13 And I'm going to jump in -- I'm going to put 14 that, you know, elections is going to not change 14 down my microphone for a second and switch 15 from this point into the next ten years, I think 1.5 laptops. 16 you probably would find a lot of people with a 16 What I'm showing you right now is the actual 17 different opinion, so ... 17 system that your election officials would be 18 And then really the engine and the -- what ${\tt I}$ 18 using on election night. After the polls have 19 feel is the most important part of our system is 19 closed and results have come in, people are 2.0 our tabulation-and-results presentation. And 2.0 bringing back their thumb drives just like you 21 what we do is we take a high-quality image of 21 guys do today. We aggregate them through the 2.2 that ballot and then we take every voting mark on 2.2 system. 2.3 23 that image and we organize it. So our system is And I'm going to show you a few examples of

24

25

things that have been pointed out today. And how

will we show you those examples and how we allow

2.0

2.2

you to manage them and really provide you with a set of data that you've never had before. And I think that's going to be really important when you're looking at the next voting system that you guys are going to invest in. The data that you're about to see is going to allow you to do so many things, from poll-worker training to, you know, identifying trends in polling places to identifying equipment that needs maintenance, and that's really where I think we shine.

So what I've just done is I've clicked on our statement of votes cast and it shows me every contest and because we're running a browser, every one of these blue buttons is a live link that I can go into. So if I wanted to look at the votes cast for George Smith, I can click on that and it's now going to pull up every vote that was cast for this candidate in this contest. And it's going to organize them by our system's contents.

So this is 86 votes, this is our demo database. But if I scroll over any one of these particular marks, it's going to pull up the entire contents area. So I can look and see if there's anything in there that needs attention or

anything in there that's worth note. And then if I click on it, I can pull up the entire ballot, and it shows me in 200 dpi, you know, how each one of the votes was cast. It's got a little legend here. Green means that there was a vote counted. And we actually have an annotated version of this, that if you click on this, it'll show you almost a real-life audit of that ballot. So you can see the green is where we counted the vote for that particular candidate.

Page 154

Page 156

So you can visually audit any ballot on the spot. But these are ballots that we counted as votes and we're not asking you guys to relitigate that, we're just presenting them to you so you can see them.

But one of the things where it really does come into play is in the case of overvotes, okay. Coming up as an audit system and working a lot of vote-by-mail states, we see a lot of things that most precinct tabulators would catch and filter out, but you can quickly go over these overvotes and see pretty clearly that these are all overvotes. But in a case like this, that might be something that in a close contest or depending on how you guys handle overvotes in a regular

Page 155

Page 153

2.0

q

1.5

2.2

2.5

situation, you might want to look at that. And here, you know, you might want to present that to your commissioners and say is that something where voter intent may be clear and is that something that we should change. And if you wanted to change this, our system gives the ability to modify our adjudication without ever having to alter the physical ballot as cast by the voter which is important because --

I had a conversation about this with an election official in New Orleans at Election Center this week. And they said: Well, if you don't change it, how are they going to know what the voter's intent was. And I said: Pull that ballot up. Is there going to be any question about why you changed that vote? And we log in to -- if I go to this ballot, you'll see how this works. I can just deselect Martin. It's going to ask me if that's what I want to do and I can save. And that's now going to change to a vote for George Green, but it is logged that I am the user that has made that change and it will log the time that I've done it. And then, if I go back to the statement of votes cast and refresh this, you'll see now that the total for George

Smith increased from 83 to 84.

Now, I'll show you one more example and then we can take some questions. There was — there was a — somebody had pointed out that undervotes, you know, are something that happen and sometimes they are important, sometimes they're not, but this is an example that I wanted to show you where an undervote may go — an undervote may not be cast in the way the voter intended.

So with the ballot then what we do is we pull up any events in the candidate area that might be important for you guys to look at. In this case they circled the candidate, which happens sometimes, but if click on that ballot, you can see that there are a few votes here where it actually went through the candidate area. So this might — it might've been caught as an undervote on one contest where the votes in contests where it passed through the oval. In this case it didn't look like any of those registered, but if it did, that ballot would pass through the precinct scanner and it would — it wouldn't raise any red flags, it wouldn't be caught as a — I think it is flagged for an

Page 157 Page 158 1 unmarked ballot. 1 I might start off and you may not have the answer 2 But with this, because those votes were --2 to this, but any idea how much it would cost 3 3 there was a vote on the ballot, it's going to Georgia to purchase your system for all hundred 4 stand. It's going to count the other ones as 4 and fifty-nine counties we've got? undervotes, and voter intent would be missed. So MR. MURPHY: I was told there would be no 5 6 we give you the visibility to ensure that voter 6 math. 7 intent is captured as cast and we show you the REPRESENTATIVE FLEMING: I know it's a big 8 math behind every one of the numbers on our 8 question at this stage of the game so I 9 system, the tabulation that we've presented as 9 understand if you wouldn't have those figures. 10 the accurate tabulation of the election. And we 10 MR. MURPHY: I think that the figures that 11 organize it in a way that allows you guys to make 11 you guys have been throwing out are probably in 12 decisions and proof that you guys have done 12 the right ballpark. I think it's going to come 13 everything the right way. 13 down to when you guys put your RFP out, you know, 14 So that's what I think ClearBallot brings to 14 what are the types of services that you want, you 15 the table that makes us unique. And this was 1.5 know, from the vendor to support you or what kind 16 kind of quick. I'll take any questions that you 16 of ancillary systems will be integrated in with 17 guys have and I look forward to continuing the 17 the system. 18 conversation with you guys and continue this 18 I can tell you as an optical scanning system 19 journev. 19 or a digital scanning system, our footprint in 2.0 REPRESENTATIVE FLEMING: Bill, we appreciate 2.0 the precinct is probably as small as you can get. your presentation. It's Bill, right? 21 21 We advocate, you know, a one-to-one set-up for 22 MR. MURPHY: Yes, sir. 22 our precincts to have the ability to have an REPRESENTATIVE FLEMING: Bill Murphy? 23 23 accessible machine in precincts under 2,500 24 MR. MURPHY: Yes, sir. 24 registered voters and then, you know, for every REPRESENTATIVE FLEMING: Okay. One question 25 25 registered voter over that many we would add Page 159 Page 160 1 another precinct tabulator to make sure that the 1 Go ahead. 2 lines are moving basically. 2 MR. MCDONALD: I want to make sure I REPRESENTATIVE FLEMING: Bill, how long has 3 3 understand this right. REPRESENTATIVE FLEMING: Jimmy, talk into 4 your system been around? How long has someone 4 5 5 been using this system? your mic there real good. MR. MURPHY: We were founded in 2009 and 6 6 MR. MCDONALD: Let me make sure I'm 7 we've been working as a voting system since 2015. 7 understanding this right. So you have machines REPRESENTATIVE FLEMING: And I think you 8 8 that would be part of the processing system that q said King County, Washington was your largest q scan and -- so does that mean that the 10 user at this point? 10 jurisdictions would also have to maintain a paper 11 MR. MURPHY: They're our largest 11 system as well? Because it seemed like if there 12 voting-system client and they purchased at the 12 was a paper ballot that was being filled out and 13 beginning of last year. We also work with 13 having to be scanned into the machine and the 14 Broward County, Florida, which is pending an tabulation and the maintenance paper ballot 1.5 audit, and the way that they use our system as an 1.5 system would be part of a -- so are there two audit system is they do a secondary tabulation of separate costs here as far as administrating the 16 16 17 every ballot. 17 election, as far as maintaining the machines and 18 So they want this -- it's almost like a 18 the purchase of the machines, still having to 19 ballot census. So they're using our system after 19 maintain paper ballots? 2.0 the ballots go into their warehouse, then archive 2.0 MR. MURPHY: Let me make sure I understand 21 these digitally, then they put the paper away so 21 the question correctly. So the answer to your 2.2 they have to -- to do that. 2.2 question is yes there's a paper ballot for every 23 REPRESENTATIVE FLEMING: I'll look around 23 voter. And you guys would either print those 24 the table and I'll start taking questions from 24 paper ballots out in the precinct on demand so as 2.5 the panel, and I'll start over here with Jimmy. 2.5 the voter comes up you can print the ballot on

	30, 2018		
	Page 161		Page 162
1	demand for them or you would preprint those	1	wizard. It produces an identical paper ballot so
2	ballots.	2	in the system you cannot distinguish the ballots
3	MR. MCDONALD: There's a paper component to	3	that were printed off by the accessible system
4	this.	4	from the preprinted ballots.
5	MR. MURPHY: This is 100 percent paper.	5	And when they're in the system, they're
6	There is an identical paper ballot for every	6	identical. I think that's make sure I've
7	voter that comes through the polling place, yes.	7	did that answer your question?
8	REPRESENTATIVE FLEMING: And sometimes is it	8	MS. HOWELL: You did. Thank you.
9	necessary for a voter to use multiple pages of	9	MR. MURPHY: Oh, the other thing I wanted to
10	paper, I would assume?	10	say too, there's no tabulation done on that
11	MR. MURPHY: It depends on your election.	11	accessible voting system. It is just a
12	REPRESENTATIVE FLEMING: Right.	12	ballot-marking device.
13	MR. MURPHY: We have worked with up to	13	REPRESENTATIVE FLEMING: You've got about
14	four-page four-card ballots.	14	five minutes left so I'm going to continue coming
15	REPRESENTATIVE FLEMING: Okay.	15	around the table.
16	As I come around the room, questions?	16	Do you have a question right here? Sheila,
17	Looking around the room.	17	did you have a question?
18	Amy, do you have one? Go ahead.	18	MS. ROSS: So when in the process would the
19	MS. HOWELL: So clarify for me as to the	19	ballot be scanned? Is it while the voter is
20	paper process when it comes to access for	20	still present or after or it's up to the
21	individuals with disabilities. It's	21	individual precinct or how does that work?
22	computer-based or	22	MR. MURPHY: In the precinct, in the polling
23	MR. MURPHY: Yes. We have a cost-based	23	location, they would mark their ballot on in
24	touchscreen voting system which is based off the	24	the voting booth, and then they would scan they
25	Anywhere Ballot, which is a VAC-funded voting	25	would scan the ballot through the precinct
	Page 163		Page 164
1	tabulator like they were showing in the video.	1	works best. Most people look at the overvotes,
2	They just slide it through.	2	but depending on the law on how you decide it,
3	MS. ROSS: So the voter would slide it	3	some people I know specifically with
4	through themselves?	4	RLAs (phonetic) it focuses on margin.
5	MR. MURPHY: Yes.	5	So if there are contests with close margins,
6	MS. ROSS: And how long does that take to	6	you know, you could, you know, evaluate and look
7	scan a ballot?	7	in the audits of those votes that were not
8	MR. MURPHY: About three to four seconds.	8	counted or ballots that were not counted as votes
9	MS. ROSS: Regardless of how long the ballot		
1.0	Mo. Robb. Regardless of now long the barrot	9	to see if there was any uncaptured event.
10	is?	9	to see if there was any uncaptured event. But it's really more of a decision for the
10			
	is?	10	But it's really more of a decision for the
11	is? MR. MURPHY: Yes.	10 11	But it's really more of a decision for the jurisdiction. You know, our job, I think, in
11 12	is? MR. MURPHY: Yes. REPRESENTATIVE FLEMING: Nancy?	10 11 12	But it's really more of a decision for the jurisdiction. You know, our job, I think, in this process is to present you guys with the
11 12 13	is? MR. MURPHY: Yes. REPRESENTATIVE FLEMING: Nancy? MS. BOREN: (inaudible)	10 11 12 13	But it's really more of a decision for the jurisdiction. You know, our job, I think, in this process is to present you guys with the tools to do whatever you need to do in the
11 12 13 14	is? MR. MURPHY: Yes. REPRESENTATIVE FLEMING: Nancy? MS. BOREN: (inaudible) REPRESENTATIVE FLEMING: Turn your mic on.	10 11 12 13 14	But it's really more of a decision for the jurisdiction. You know, our job, I think, in this process is to present you guys with the tools to do whatever you need to do in the easiest way possible.
11 12 13 14 15	is? MR. MURPHY: Yes. REPRESENTATIVE FLEMING: Nancy? MS. BOREN: (inaudible) REPRESENTATIVE FLEMING: Turn your mic on. MS. BOREN: At the end of the voting day,	10 11 12 13 14 15	But it's really more of a decision for the jurisdiction. You know, our job, I think, in this process is to present you guys with the tools to do whatever you need to do in the easiest way possible. REPRESENTATIVE FLEMING: Continue around the
11 12 13 14 15 16	is? MR. MURPHY: Yes. REPRESENTATIVE FLEMING: Nancy? MS. BOREN: (inaudible) REPRESENTATIVE FLEMING: Turn your mic on. MS. BOREN: At the end of the voting day, would the election workers certify this contest	10 11 12 13 14 15	But it's really more of a decision for the jurisdiction. You know, our job, I think, in this process is to present you guys with the tools to do whatever you need to do in the easiest way possible. REPRESENTATIVE FLEMING: Continue around the table. Right here. Lynn?
11 12 13 14 15 16 17	is? MR. MURPHY: Yes. REPRESENTATIVE FLEMING: Nancy? MS. BOREN: (inaudible) REPRESENTATIVE FLEMING: Turn your mic on. MS. BOREN: At the end of the voting day, would the election workers certify this contest or is that part of the post-election process? So	10 11 12 13 14 15 16 17	But it's really more of a decision for the jurisdiction. You know, our job, I think, in this process is to present you guys with the tools to do whatever you need to do in the easiest way possible. REPRESENTATIVE FLEMING: Continue around the table. Right here. Lynn? MS. BAILEY: Thank you, Mr. Chair.
11 12 13 14 15 16 17 18	is? MR. MURPHY: Yes. REPRESENTATIVE FLEMING: Nancy? MS. BOREN: (inaudible) REPRESENTATIVE FLEMING: Turn your mic on. MS. BOREN: At the end of the voting day, would the election workers certify this contest or is that part of the post-election process? So before certification of an election, at what	10 11 12 13 14 15 16 17	But it's really more of a decision for the jurisdiction. You know, our job, I think, in this process is to present you guys with the tools to do whatever you need to do in the easiest way possible. REPRESENTATIVE FLEMING: Continue around the table. Right here. Lynn? MS. BAILEY: Thank you, Mr. Chair. Can you tell us in a nutshell how your
11 12 13 14 15 16 17 18	MR. MURPHY: Yes. REPRESENTATIVE FLEMING: Nancy? MS. BOREN: (inaudible) REPRESENTATIVE FLEMING: Turn your mic on. MS. BOREN: At the end of the voting day, would the election workers certify this contest or is that part of the post-election process? So before certification of an election, at what point do you look at the marks to determine	10 11 12 13 14 15 16 17 18	But it's really more of a decision for the jurisdiction. You know, our job, I think, in this process is to present you guys with the tools to do whatever you need to do in the easiest way possible. REPRESENTATIVE FLEMING: Continue around the table. Right here. Lynn? MS. BAILEY: Thank you, Mr. Chair. Can you tell us in a nutshell how your system works in terms of a recount and the
11 12 13 14 15 16 17 18 19 20	MR. MURPHY: Yes. REPRESENTATIVE FLEMING: Nancy? MS. BOREN: (inaudible) REPRESENTATIVE FLEMING: Turn your mic on. MS. BOREN: At the end of the voting day, would the election workers certify this contest or is that part of the post-election process? So before certification of an election, at what point do you look at the marks to determine undervotes, overvotes, votes that are on the	10 11 12 13 14 15 16 17 18 19 20	But it's really more of a decision for the jurisdiction. You know, our job, I think, in this process is to present you guys with the tools to do whatever you need to do in the easiest way possible. REPRESENTATIVE FLEMING: Continue around the table. Right here. Lynn? MS. BAILEY: Thank you, Mr. Chair. Can you tell us in a nutshell how your system works in terms of a recount and the ability to isolate one particular race for a
11 12 13 14 15 16 17 18 19 20 21	MR. MURPHY: Yes. REPRESENTATIVE FLEMING: Nancy? MS. BOREN: (inaudible) REPRESENTATIVE FLEMING: Turn your mic on. MS. BOREN: At the end of the voting day, would the election workers certify this contest or is that part of the post-election process? So before certification of an election, at what point do you look at the marks to determine undervotes, overvotes, votes that are on the ballot?	10 11 12 13 14 15 16 17 18 19 20 21	But it's really more of a decision for the jurisdiction. You know, our job, I think, in this process is to present you guys with the tools to do whatever you need to do in the easiest way possible. REPRESENTATIVE FLEMING: Continue around the table. Right here. Lynn? MS. BAILEY: Thank you, Mr. Chair. Can you tell us in a nutshell how your system works in terms of a recount and the ability to isolate one particular race for a deeper look.
11 12 13 14 15 16 17 18 19 20 21 22	MR. MURPHY: Yes. REPRESENTATIVE FLEMING: Nancy? MS. BOREN: (inaudible) REPRESENTATIVE FLEMING: Turn your mic on. MS. BOREN: At the end of the voting day, would the election workers certify this contest or is that part of the post-election process? So before certification of an election, at what point do you look at the marks to determine undervotes, overvotes, votes that are on the ballot? MR. MURPHY: It depends on the state's	10 11 12 13 14 15 16 17 18 19 20 21 22	But it's really more of a decision for the jurisdiction. You know, our job, I think, in this process is to present you guys with the tools to do whatever you need to do in the easiest way possible. REPRESENTATIVE FLEMING: Continue around the table. Right here. Lynn? MS. BAILEY: Thank you, Mr. Chair. Can you tell us in a nutshell how your system works in terms of a recount and the ability to isolate one particular race for a deeper look. MR. MURPHY: Yeah. Yeah. So that's a great
11 12 13 14 15 16 17 18 19 20 21 22 23	MR. MURPHY: Yes. REPRESENTATIVE FLEMING: Nancy? MS. BOREN: (inaudible) REPRESENTATIVE FLEMING: Turn your mic on. MS. BOREN: At the end of the voting day, would the election workers certify this contest or is that part of the post-election process? So before certification of an election, at what point do you look at the marks to determine undervotes, overvotes, votes that are on the ballot? MR. MURPHY: It depends on the state's rules. You know, we've worked with jurisdictions	10 11 12 13 14 15 16 17 18 19 20 21 22 23	But it's really more of a decision for the jurisdiction. You know, our job, I think, in this process is to present you guys with the tools to do whatever you need to do in the easiest way possible. REPRESENTATIVE FLEMING: Continue around the table. Right here. Lynn? MS. BAILEY: Thank you, Mr. Chair. Can you tell us in a nutshell how your system works in terms of a recount and the ability to isolate one particular race for a deeper look. MR. MURPHY: Yeah. Yeah. So that's a great question. I usually tell this example when we

2

3

4

5

6

7

8

9

10

11

12

13

14

15

16

17

18

19

2.0

21

22

23

24

25

1

2

3

4

5

6

7

8

q

10

11

12

13

14

15

16

17

18

19

2.0

21

2.2

23

24

25

clerk so it was his first election and we were -they were using our system for the first time. So there was a lot of firsts in this election for him, and it was at the end of the night. There was about three contests at the local -- you know, small contests that were within a three- or four-vote difference.

And in Colorado, they adjudicated all of their overvotes during the election process, that they do their vote-by-mail and they do early-voting. So they had looked at all of the overvotes that our system pulled up to make sure that they applied to state law. And his first reaction at the end of the night, at two in the morning when he realized that there were these three -- three contests were less full, all of that -- all of those ballots I want to rescan to make sure that we counted everything correctly. I want to -- I was like: That may not be the best idea at two in the morning. Why don't we look at the dashboard first.

And we were able to go through each contest in about ten minutes and look at every vote that we counted, look at every vote that was counted as an overvote that they had adjudicated and

classified as an overvote, look at everything that they had changed, and look at every uncaptured ballot where there wasn't a vote for that particular candidate but to look to see if there was anything in there that could be interpreted as intent.

Page 166

Page 168

And in about ten minutes, he looked at all three contests and said: I'm going to bed. I'm fine. And when the candidates came in the next day, he showed them the dashboard and they shook hands and they said congratulations because he was able to show them the math behind the tabulation number, and they saw very quickly that there wasn't anything there that they were going to be able overturn with.

REPRESENTATIVE FLEMING: Judge, you look like you have a question.

JUDGE MCCOY: What about ballot-marking stations, booths for voters to actually privately mark these ballots? Is that something that comes with the package, or are we going to have to deal with that issue separately?

MR. MURPHY: No, that's part of the system that we would provide. I think there are probably going to be a lot of things from

Page 167

Page 165

1

2

3

4

6

8

10

11

12

13

14

15

16

17

18

19

2.0 21

22

23

24

25

1

2

3

4

5

6

7

8

9

10

11

12

13

14

1.5

16

17

18

19

20

21

2.2

2.3

24

25

whatever vendor you guys decide to go through from an infrastructure perspective that the jurisdictions will have to, you know, use to upfit their precinct voting, ballot booths, you know, little ballot booths or one of those things. There's a lot of options out there, but we've got a few that we think are good, both, you know, high cost and, you know, top of the line, and, you know, low-cost versions. So it depends on what you guys prefer.

MS. HOLDEN: Yes, I'm Deirdre Holden, Paulding County election supervisor in Dallas, Georgia. I have two questions. First question is when we were listening to our panels, there was a discussion of when that ballot is put through the tabulator if there is an overvote, does it kick that ballot back out and give that voter the opportunity to correct that?

MR. MURPHY: Yes, ma'am. Yep.

MS. HOLDEN: Second question: Currently with the system that we have in Paulding, I do have ballots -- I will tell you we print all of our ballots. I know that that would not be a reality to have one of those in all precincts for different counties. It wouldn't be for me

because I know how much I paid for it. There is a setup fee that when we're done with our ballots

that we have to pay, but there's also a cost per

ballot.

Now, if we go all paper, I have a precinct that has over 15,000 voters. Now, I'm going to have to have 15,000 ballots there, but we know all 15,000 of those people are not going to show up. To me, that is going to be an extra cost burden on the counties to pay for ballots that we're basically going to put in the shredder. So that's a concern that I have. I am a metro county but I still have to think about my sisters and brothers around the state that don't have that extra money to just basically put into a shredder, you know, after the election's over with. That's one of my concerns.

And I don't, you know -- I know all the election people at the table have spoken but I do have concerns with that because my biggest concern, number one, is that that voter does get to walk away knowing that who they voted for counted and it's tabulated correctly, but I also have to look at it on our side of how much this is going to cost us on the county level. So that

Page 169 Page 170 1 was one thing. 1 in plenty of time. We do not charge per ballot. 2 2 I guess my question is is there an We just charge a flat software fee for both of 3 3 additional price per ballot with your company? those systems and for the hardware, so ... 4 Will we have to pay 39 cents per ballot or 45 4 REPRESENTATIVE FLEMING: Good question. cents if it's color? That's what I would like 5 5 Bill, good presentation. 6 for you to answer for us. 6 MR. MURPHY: Thank you, sir. I appreciate 7 MR. MURPHY: Yeah. Yeah. That's not an 7 that. 8 uncommon concern with folks moving from a DRE to 8 MR. MONDS: I have a question. 9 a paper system. We hear that all the time. Our REPRESENTATIVE FLEMING: Who's that? Oh, 10 ballot-on-demand system we have in, essentially, 10 okay. 11 two flavors. We have one that would be in a 11 MR. MONDS: John Monds. 12 check-in mode where you're printing off a ballot 12 What will the voter see once their ballot is 13 as the voter comes up to the registration desk 13 scanned that shows them that they voted for 14 and is checked in by a poll book that we 14 exactly what shows up in the ballot? 15 integrate with, you know, your poll book of 15 MR. MURPHY: Yeah. So on the precinct --16 choice and to make sure that that ballot is of 16 REPRESENTATIVE FLEMING: Hold on. 17 the correct style. 17 John, I'm not sure I heard that question. 18 We also have a more enterprise ballot 18 Can you repeat it as you understood it, 19 management system that would print out Test X 19 Bill. (phonetic), you could print ballots in bulk. So 2.0 MR. MURPHY: Yeah. So you asked what do the 2.0 21 21 voters see -rather than printing out 15,000 ballots, you 22 know, for a precinct that has 15,000 registered 22 MR. MONDS: Once --MR. MURPHY: -- as how our system has 23 voters, you can print out half of that and then 23 24 24 tabulated their ballot? if it gets low you can print out more on demand 25 25 MR. MONDS: Right. Once it's on the for your central location and send it out to that Page 171 Page 172 1 scanner, what will voters see? An example being humidity and moisture in a ballot and your 2 George Smith, will it show the voter their vote 2 scanners being able to scan those ballots in 3 was for George Smith? 3 high-humidity situations? MR. MURPHY: No, not in the precinct. In MR. MURPHY: I live in Tampa, Florida and 4 4 5 the precinct, we only notify the voter for grew up in Charlotte, North Carolina so I'm familiar with what you're talking about. We grew 6 overvotes. It's configured along the alerts. We 6 7 can alert for overvotes. We can alert for 7 up as an audit system in, you know, a kind of 8 undervotes. Most people don't do undervotes. 8 vote-by-mail environment. So our system is a lot q But the accessible voting system would allow the q more tolerant of ballots that may not be 10 voter on the touchscreen to preview their votes 10 perfectly formed or may be a little bit bloated 11 before they print the ballot and inspect the 11 because of the summer weather. So we have not 12 ballot after it's been printed. Once they've put 12 seen any instances of that being an issue. 13 it through the tabulator, it is cast as they've 13 I think paper -- the paper decision that you 14 submitted it unless it's an overvote in which 14 make -- you know, we like to tell people that we 15 case it would kick back and then you could spoil 1.5 give you a lot more flexibility on the types of 16 that ballot or they could submit it if they 16 paper you can use in an election, but paper is 17 choose to do so. 17 one of the things that contribute to a factor 18 REPRESENTATIVE FLEMING: Bill, thank you so 18 like that. 19 much. 19 So we would work with you guys to make sure 20 MR. MURPHY: Thank you for everything. 2.0 that through the testing process, you know, that 21 **REPRESENTATIVE FLEMING:** Yes? 21 we're coming up with the best stock that works 2.2 JUDGE MCCOY: One quick question. 2.2 for your client because we know that it is 23 REPRESENTATIVE FLEMING: Judge? 23 sometimes challenging. 24 JUDGE MCCOY: Has anything ever been brought 24 REPRESENTATIVE FLEMING: Bill, thank you so 2.5 to your attention about the South Georgia 25 much. We're going to move on to our next --

Page 174 Page 173 1 $\mathbf{MR.}$ $\mathbf{MURPHY:}$ Thank you very much for the 1 poll workers. I used to be the director of 2 2 time. Thank you. elections in Jefferson County, Missouri. It's in 3 REPRESENTATIVE FLEMING: Thank you. 3 St. Louis. And one of the things poll workers 4 4 Unisyn, we're going to give you all time to have always asked me during training, they said: get set up, and we'll start the clock when you're Wes, don't skip any steps. So when I speak to 5 6 ready to go. 6 you today, I am not skipping any steps. So when 7 (Pause) 7 I say the poll worker simply plugs it in and 8 REPRESENTATIVE FLEMING: All right. We're 8 turns it on, that's all they have to do. 9 going to get started now with our next Our touchscreen, we call it the FreedomVote. 10 presentation. This is Unisyn Voting System. Did 10 You'll see how it is deployed right now with the 11 I pronounce that right? 11 legs, a privacy shield. I'm going to have my 12 MR. WAGNER: Yes, sir. 12 coworker Mark, he's going to remove the shield so 13 REPRESENTATIVE FLEMING: I'm going to turn 13 we can all get a look. 14 it over to you and let you introduce yourself. 14 To turn this unit on, plug it in, turn it 15 MR. WAGNER: Very good. Thank you all for 15 on. Mark, he's already done that. He simply 16 giving us the opportunity to come and visit with 16 lifted the tablet into its current position. The 17 you a little bit today. One of the things that 17 tablet does have four positions. The vertical 18 we want to emphasize is poll-worker setup and how 18 position would be most beneficial to voters with 19 easy it is for poll workers to use our system. 19 disabilities that require a wheelchair, but you You saw us wheel in the ballot box, on top of it can lay the tablet completely flat. The 2.0 2.0 our digital scanner. The poll worker is simply 21 21 FreedomVote takes approximately 15 seconds to set 22 going to plug it in and turn it on. 22 up. The ballot box is about three minutes 23 23 because it is a computer. I am going to do the introductions in a 24 second, but I want to start with that because, 24 Our digital scanners are on the Linux 25 25 again, your poll workers are probably like my platform, 256-bit encryption. Our touchscreen, Page 175 Page 176 1 the thing I want you to know about that is the 1 you're looking at less than five minutes to set 2 components, the tablet, the printer, those are 2 up. 3 commercial off-the-shelf, what we call COTS. In 3 Okay, so I have with me today -- this is 4 the event that a voter or poll worker breaks the 4 Dustin Vanderburg. Dustin is the vice president 5 5 of Adkins Election Services. Adkins is a tablet -- I have not seen that happen, but if 6 they would, we would simply replace the tablet. 6 Missouri company. We have customers all through 7 You don't incur the cost of replacing the entire 7 the Midwest. Adkins has been in business for 75 years. 8 unit. 8 q Also, because it is tablet technology, we q This is my coworker Mark Carter. Mark has 10 are offering the benefit to your voters with 10 just joined our team recently. Mark has had a 11 disabilities, with visual disabilities, the 11 long career with Democracy Live. So Mark has 12 screen-reader functionality. What we have found 12 real expertise with voters with disabilities and 1.3 is that braille is not enough, not any more. 13 UOCAVA voters. 14 We're going to show that to you today. And my name is Wes Wagner. I am the former 15 It's just printing out the opening reports. 1.5 director of the Washington County clerk from 16 Again, poll worker, they simply plug it in and 16 Jefferson County, Missouri. I held that position 17 turn it on, this is the opening report. It gives 17 for 11 years. Prior to that, I served in the 18 you the opportunity to print multiple copies. Missouri legislature for eight years as the 18 19 There's a place at the bottom for the poll 19 ranking member on the elections committee. 20 workers to sign. I would recommend to you to 2.0 Okay, so let's go a little bit out of order 21 have every poll worker at your precinct sign it. 21 and I want to show you absentee ballots first. 2.2 If you have six poll workers -- three Democrats, 2.2 REPRESENTATIVE FLEMING: Oh, hold on a 23 three Republicans -- everybody should just sign 23 second. MR. WAGNER: Yes, sir. 24 and attest that we're starting at zero. When we 24 REPRESENTATIVE FLEMING: You served in the 25 walk into the precinct and we're ready to go, 25

Page 177 Page 178 1 House or the Senate? 1 soda machine. 2 MR. WAGNER: I served in the House. 2 You see how quickly Mark is sliding the 3 REPRESENTATIVE FLEMING: Oh, you're a good 3 ballot in. That one's backwards. There's a 4 4 little green light. You may not be able to see guy. Go ahead then. 5 MR. WAGNER: Threw me off track. 5 it in the back of the room. The green light says REPRESENTATIVE FLEMING: I'm sorry. I was 6 6 it's ready to have ballots inserted. And it's having a timing issue. My bad. 7 7 just that quick. MR. WAGNER: Okay, so what Mark is holding 8 8 Okay, then Mark is going to grab this ballot 9 is a typical absentee ballot that you would send 9 because the other voters sometimes don't follow 10 to someone who was going to be out of town on 10 the instructions, and we have voters that they 11 vacation. Our system can accommodate an 11-inch 11 liked Donald Trump and they liked Hillary Clinton 12 ballot, 14-inch, 17-inch, 19-inch, printed front 12 so they voted for both of those candidates, 13 and back. The voter is simply going to take a 13 right? And so they colored in the circle for 14 marker and color a bubble of his or her choice, 14 both candidates. 15 send it back to the election office. We're going 15 So Mark is going to insert it into the 16 to adjudicate that outvote and make sure that all 16 digital scanner. It's going to be rejected and a 17 of the requirements have been met. And the 17 little slip of paper is printed off. That little 18 election official in the office is simply going 18 slip of paper -- if you decide to use a paper 19 to feed the ballot into the scanner in any 19 ballot at the precinct level, that little piece 2.0 orientation. It doesn't matter faceup, facedown, 2.0 of paper will indicate to the voter at the time 21 21 backwards, forwards, doesn't matter. You just of the casting of the ballot where the mistake is on the ballot. And so that one should say --22 have to lay it flat like a dollar bill in a soda 22 23 machine. And when I do poll-worker training, 23 overvote for sheriff is what that should say and 24 that's absolutely how I explain it because that's what we're showing you. 24 25 25 everyone seems to understand a dollar bill in The reason we think that is important is Page 179 Page 180 1 because a lot of jurisdictions have what we call notes I'm guessing. So why did the voter do 2 2 "busy ballots." In Missouri, we have a lot of that? Why did the voter scratch out that 3 constitutional amendments on the ballot. It is 3 candidate and vote for somebody else? Well, 4 the same time as our congressional members and 4 because they only received one absentee ballot in 5 5 governor and so on. the mail. Same process. The ballot's going to 6 That little ticket will allow the voters to 6 be rejected. You know, this scenario, what we 7 look immediately to determine where the mistake 7 would recommend that you to do, you go ahead and 8 was made. If this happened at the precinct 8 staple or paperclip that slip that indicates q level, the voter would simply take that ballot, q where the overvote has taken place. You would 10 bring it back to the poll workers who would spoil 10 simply grab a new ballot out of the filing 11 it, put it in a spoiled-ballot envelope, issue 11 cabinet, if we're talking about in our office, 12 the voter a second ballot and therefore get a 12 and faithfully duplicate that ballot and slide it 13 second chance and comply with federal law. If 13 through the scanner. 14 that voter says: You know what, I really do like Okay. I want to show you our electronic 15 Donald Trump and Hillary Clinton, I want to vote 1.5 poll book. This is an iPad. We work with a 16 for both of them, the whole screen will allow the 16 company called Tenex, T-e-n-e-x, and Mark is 17 voter to checkmark the box and accept the ballot. 17 going to -- we're going to do a little 18 Now what will happen is the votes, the incorrect 18 role-playing here. Okay. Let's show everybody 19 vote, the overvote will not be counted but the 19 the home screen first. Your poll workers are 20 rest of the ballot will. So the voter will not 20 going to be on this particular screen all day --21 be penalized for the correct selection. 21 red, yellow, and green. 2.2 Okay, Mark is holding in his hand the same 2.2 Mark, do you want to fold it? 2.3 23 scenario. This is an overvote and the voter MR. CARTER: Sure (demonstrating). 24 wrote us a note on the ballot. Those of you who 24 MR. WAGNER: Then just unfold it. 25 have dealt with paper have seen all kinds of 25 That's literally all your poll workers have

Page 181 Page 182 1 to do. Mark is going to demonstrate that the 1 year of birth, voter ID number, all the 2 information is customizable. 2 tablet flips back and forth. There's a reason 3 for that. Because I am a poll worker on this 3 So Mark's going to complete the check-in side of the table and when I check you in, we're 4 process. And you may not be able to see but 4 5 there's a little printer in there. The printer 5 going to ask for your signature. The screen is 6 going to reorient itself. We're going to flip 6 has printed out an authorization-to-vote slip 7 that iPad to voters on the other side of the 7 that has a QR code. That QR code does not have 8 table. That's what we're going to show you. 8 your social security number, no birthdates, no 9 Okay. So Mark the voter, we've asked him 9 name, no addresses. It's simply your ballot 10 for his identification. The poll worker selects 10 style. We are going to use this QR code to turn 11 the green driver's license scan. It activates 11 on our touchscreen. This is how most voters in 12 the camera on the iPad and the iPad is going to 12 Georgia are going to vote. 13 scan the barcode on the driver's license. We, as 13 So, Mark, do you want to hold it under the 14 poll workers, are going to ask that voter if 14 left corner just under the green light. 15 their information is correct. If it is, we're 15 Now, that barcode that Mark had in his hand, 16 going to get their signature. 16 that is no longer any good. I would recommend to 17 Mark, do you want to show them that it's --17 you, as a former election official, keep all of 18 (Adjusting iPad) 18 those barcodes. You want to keep those for 19 MR. WAGNER: Okay, perfect. 19 auditing and reconciliation purposes. But if for some reason you didn't keep that and a voter left 2.0 It was upside down for the voter. Now it's 2.0 21 correct. The voter has signed and we're going to 21 and threw it on the sidewalk, that particular 22 issue the ballot. 22 barcode is no longer usable. 23 Now, on that particular screen, we're 23 Okay, on the first screen, Mark, press 24 looking at name, address, party affiliation if 24 start. 25 25 Yeah, I know it's a little difficult to see you want that on there, date of birth or just the Page 183 Page 184 1 there in the back, but here's the list of wants to vote for me. No, he doesn't want to 2 candidates. Mark's going to use his fingers to 2 vote for me. He's continuing his -- okay. select the candidate. He didn't like his choice. 3 3 This particular screen, here's an example of 4 He wants to vote for somebody else. Our Δ what happens if 30 people sign up for congress, 5 touchscreen will not allow you to vote for 5 not all of their names are going to fit on the 6 someone else until you deselect and then 6 screen. Our system that we are offering, even if 7 7 you vote for the first -- this is a vote for reselect. The reason I think that's important is 8 8 because sometimes voters have a tendency to drag three for city council. Even if you vote for the 9 their hand down the front of the screen -- I've q first three, our system will not allow you to 10 seen that numerous times -- and they accidentally 10 navigate to the next race. Our system protects 11 11 change their vote as their hand drags to the the voter and protects the candidates. Our 12 bottom. 12 system forces you to recognize that there were 13 13 candidates to be seen at the bottom. At the very bottom of the screen, there's a 14 couple of arrows that allow you to go forward or So, again, even if you've selected the 15 backwards. My mom and dad use the arrows at the 1.5 candidate at the top, we don't want you to move 16 bottom, but you can also use your finger because 16 on until you've seen everybody. I always use an 17 it is a tablet to navigate back and forth. 17 example of a newspaper. You may not want to read 18 Mark's going to go the next screen. He's 18 the comics but we force you to pass through the 19 going to choose someone for, I believe, attorney 19 comics to get to the sports section. 20 general. He likes his choice so he goes to the 2.0 Okay. So Mark is happy with his selections. 21 next screen. Either with his finger or with the 21 He is on a constitutional amendment. All we want 2.2 arrows, he's going to continue to vote. If he 2.2 you to recognize there is that there's more text 23 doesn't like his choices, he may choose write-in. 23 and we want that voter to recognize that there's 24 If you touch write-in, a keyboard comes up. 24 more text at the bottom of the screen. Once he's 2.5 Mark's going to enter my name because I know he 2.5 reached the end of his ballot, he's going to

There is nothing to do on the FreedomVote. This

Page 185 Page 186 1 choose "done" at the bottom. Here is the review out of the machine. 1 2 screen. He is reviewing all of his selections. 2 Voters have a chance at this point to review 3 If he's not happy with any of those at any time, 3 their selections. They're not locked into it. 4 he can touch any one of those races and he comes 4 If they like their choices and are satisfied, right back to that race, but he can change his 5 they're simply going to lay their ballot into the 5 6 mind. So you can change your mind a million 6 slot like a dollar bill in a soda machine. 7 times. Any change that you make is going to be 7 In a normal precinct set up, just so we're 8 in blue. So it's a way for a voter to keep track 8 clear, you would have any number of FreeVotes. 9 of any changes. So you would have four or five or ten or twenty, 10 Mark, will you do an undervote for me, 10 but you would only have one additional scanner. 11 please. 11 Just so we're clear on that point. 12 MR. CARTER: Sure. 12 Mark's going to lay it flat like a dollar 13 MR. WAGNER: Choose any race, don't select 13 bill in a soda machine. Doesn't matter faceup or 14 anyone. Any time you see red, red is a courtesy 14 facedown. 15 to you, saying you didn't make a selection for 15 I heard a question earlier I wanted to 16 sheriff. Obviously, our system does not require 16 address. The question was how I know that that 17 you to vote in every race. If you just want to 17 machine is faithfully counting my selections. As 18 come in and vote for governor or vote for 18 an option on that screen, if you want it to, it 19 president, that's fine. We've made you review 19 will display your choices on that ballot. You 2.0 all of your choices and that's the sizzle to our 2.0 can see it right there at the time of insertion, 21 21 okay? steak, which is on the system that you have now, 22 your voters are going to touch the word "cast," 22 As the ballot is inserted through the 23 they get in the car, they drive home. Our 23 digital scanner, a digital image is taken of that 24 system, we're going to have you touch the word 24 ballot. We're going to talk a lot about that 25 25 "print" and here comes your review ballot right here in just a second. Page 188 Page 187 1 Okay, Dustin, can I use you? is simply a ballot-marking device. It does not 2 One of the things our company is very proud 2 retain any of your selections. It's a very 3 of is our working relationship with the 3 expensive pencil is what is it. disability community. And so the voter -- let's 4 Δ So Mark, all he did was lay a tablet down, 5 say the voter comes in and it's obvious that the 5 we'll put the lid on it, and that's all you have 6 voter's going to need to use the screen-reader 6 to do. The digital scanner -- I want to show 7 functionality. That ability can be given to the 7 everybody that Mark -- we give you a ballot with 8 voter at the time of check-in with the electronic 8 the word "close" on it. That will be in the q poll book. With that little slip that's printed q poll-worker supplies. They simply slide it 10 from the electronic poll book what would happen 10 through the machine. It'll then ask you if you 11 is when you scan it, it will turn on a 11 want to close the election and print the results. 12 touchscreen. And right now we did not make the 12 If the poll workers would lose that for some 13 screen go black, but it will (demonstrating). 13 reason, there is a hidden button on the screen 14 There we go. 14 that the poll workers could select, enter the 15 (Recording played) 1.5 password, and prints the results. I'm not sure who asked it earlier, but these 16 MR. WAGNER: The series of taps and swipes 16 17 is how the voters with visual disabilities are 17 would be the unofficial results. Just so we're 18 using their iPads and their own lives. We 18 clear, on election night we will report 19 incorporate that technology as part of our 19 unofficial results. The ballots inside the 20 system. We are very proud of that. 2.0 ballot box, the box itself has plenty of 21 Okay. So the election is over. Election 21 opportunities for a Democratic/Republic padlock, 2.2 day is over, and we're ready to close our 2.2 lots of security seals. So it's really going to 2.3 23 equipment, we're ready to go home, I've been a be up to the administrator as to what you want to 24 poll worker for 15 hours, I'm going to go home. 24 do with the ballots. Do you want to have the

25

poll workers break the seals and bring all of the

Page 189 Page 190 1 ballots in on election night? Do you want to 1 barrel key. There's a security seal that he's 2 2 already broken. He will remove the lid. There's leave them in the box and have the election 3 3 commissioners break the seals? We're very a thumb drive, 256-bit encryption. That thumb 4 flexible in what we're offering. 4 drive will come back to the office on election 5 night where it's downloaded into a laptop not 5 Okay, so election night, we reported -- or a 6 hundred percent reported and now it's Wednesday, 6 networked. The thumb drive itself takes 7 Thursday, and we're doing our post-election approximately three seconds to download the 8 audits. I know you all dealt with a -- or are 8 results. You can't make a mistake and download 9 becoming comfortable with a term called the results twice, okay? 10 "risk-limited audits." If y'all don't know what 10 So now the election is over and we have all 11 that means, please find out because it's so 11 of the thumb drives in our office, all of the 12 critical to what we're doing here. 12 thumb drives have been downloaded to a laptop. 13 I'm a voter who -- I put my ballot into the 13 The thumb drives contain digital images. Every 14 ballot box. How do I know this thing counted my 14 time you put a ballot through the ballot box, a 15 vote correctly? I'm going to show you how. 15 picture is taken of your ballot and we don't know 16 Dustin has a little mini scan on the table set 16 it's yours. It's all anonymous, but a picture is 17 up. Yes, we do offer a central scan for big 17 taken. 18 counties like Fulton, but we offer a mini scan 18 In the post-election auditing process, we 19 which may be a more economical choice for smaller 19 call an auditor -- so Dustin's going to be my --2.0 counties. Lunch is over, the results are on a my driver. I would recommend to you, as a former 2.0 thumb drive. 21 21 election official, that you have a Democrat and a 22 Do you want to do that, Mark? 22 Republican sitting here in front of the monitor. 23 MR. CARTER: Sure. 23 Our software's going to ask you what precinct do 24 24 you want. So Dustin and his bipartisan coworker MR. WAGNER: Mark is simply going to lift 25 25 the screen out of the way. He's going to use a are going to choose a precinct. He's going to Page 191 Page 192 1 choose a city. Now, our software is asking you voting system juju has integrity, that the 2 how many ballots do you want to look at from the 2 results are fair and square. 3 city. You can look at them all. You can look at 3 If I can take five seconds and get on my 4 a small percentage. Dustin's going to choose 4 soapbox, elections are not about winners. 5 50 percent. He's going to select right there 5 Elections are about losers. They are. That's 6 (demonstrating). Perfect. 6 what makes our country the best country in the 7 Okay, so you'll notice in blue that word 7 world because the losers always accept the 8 says "unprocessed," right there at the top. It 8 results. It's not about the winners; it's about q says unprocessed. Dustin's going to choose the 9 the losers. 10 first one. On the left side of the screen is the 10 Okay, Dustin's going to show you the 11 ballot. On the right side of the screen is how 11 adjudicator feature, something we're very proud 12 our software interpreted your selections. They'd 12 of. I want to show you a couple of things. 13 better match, right? So in this scenario, we 13 Let's talk about UOCAVA ballots. For the people 14 voted for Dwight Eisenhower for president, right 14 in the audience, I'm talking about military, 1.5 there (indicating), and at the very top, 1.5 overseas citizens. When they send their ballots Eisenhower is reflected. That is your 16 16 back to us, it's usually on copy paper. That's 17 risk-limited audit. 17 how we get it. We, as election officials, are 18 Dustin, want to do another one? Another --18 forced to pull it out of the filing cabinet, get 19 MR. VANDERBURG: Okay. 19 a marker and color in the circles. 2.0 MR. WAGNER: -- next process. No 2.0 What if I showed you a way that you can 21 selections, look at that (indicating). No 21 eliminate human intervention and do it all 2.2 circles were colored in for any voters so no 2.2 electronically? UOCAVA ballot comes back, we 23 selections were reflected. You may see a yellow 23 scan it through our scanner. Just like the 24 color that's reflecting a write-in vote. This is 24 process I showed you before, Dustin is going to 2.5 a way to quickly and accurately ensure that the 2.5 open up this ballot. There's the ballot

Page 193 Page 194 1 (indicating). At the top in red -- I know you 1 is accurately reflected electronically. Those 2 2 can't see it, but at the top it says: Can't results are dumped into the system, a report -- a 3 3 verify that this is a ballot. It doesn't know if breadcrumb report is printed out that you can 4 it's my kid's artwork from school, doesn't know 4 simply staple and attach to the original UOCAVA if it's a newspaper article. Just knows it's a ballot for accounting purposes. That was just 5 6 piece of paper. 6 used -- this process that I described was just So what we're offering to you is the ability 7 used in the Kansas gubernatorial primary two 8 to recognize that's a UOCAVA ballot. Over on the 8 weeks ago. 9 right our software asked you to pick a precinct. REPRESENTATIVE FLEMING: Wes, I know we've 10 Dustin's going to do that. Then he's going to 10 got a little less than five minutes left for you 11 choose what ballot style is appropriate for that 11 so I don't want to interrupt you, but I do want 12 UOCAVA voter. And he's simply going to 12 to give you the option to save time for questions 13 adjudicate this ballot with his bipartisan 13 if you like, okay? 14 teammate, right? This person wanted to vote for 14 MR. WAGNER: And feel free to jump in. 15 Abraham Lincoln for president. You'll see the 1.5 We're here for this, so ... 16 dialogue box that comes up. He wanted to vote 16 REPRESENTATIVE FLEMING: Let's do it at this time --17 for -- is that Senator Barry Fleming or Peggy 17 18 Fleming for attorney general. I think it's 18 MR. WAGNER: Absolutely. REPRESENTATIVE FLEMING: -- if that's okay. 19 Peggy. 19 $\textbf{REPRESENTATIVE FLEMING:} \quad \textbf{You were doing good}$ 20 2.0 Questions from members of the panel. I'll start 21 21 with one and I asked the same one earlier. Do there for a while. MR. WAGNER: (indiscernible) 22 22 you know -- and if you don't, I understand. Do 23 Dustin adjudicated the vote for Peggy 23 you know how much it would cost the state of 24 Fleming for attorney general. Now that voter's 24 Georgia to implement your system in all hundred 25 25 right there in the corner. That voter's intent and fifty-nine counties? Any estimate? Page 195 Page 196 1 MR. WAGNER: I hate people that don't answer polling places, small. 2 questions. I mean, again, I think the first 2 REPRESENTATIVE FLEMING: Small. And the 3 presenter was accurate. It just depends on your 3 other one may be an absentee ballot? I don't 4 RFP. Δ think I understood. 5 5 REPRESENTATIVE FLEMING: Okay. MR. WAGNER: We just wanted to show you that the FreedomVote ballot and the absentee ballot 6 MR. WAGNER: If you all decide that counties 6 7 in excess of a certain number of voters should 7 both can go through the same scanner. REPRESENTATIVE FLEMING: Same scanner, 8 have a big central scan --8 q REPRESENTATIVE FLEMING: Right. 9 got cha. MR. WAGNER: -- that may be a different 10 10 Questions as I go along. I'm going to start 11 price point than if you say counties with, say, 11 on this side this time. 12 less than 10,000 buy a smaller -- mini scan is 12 Sara, were you about to raise your hand? Go 13 what we call it. 13 ahead, Sara. REPRESENTATIVE FLEMING: Sure. 14 14 MS. GHAZAL: So you showed us how the 15 MR. WAGNER: You're going to decide what 1.5 absentee ballots are audited. Do you also have a kind of service you want from our company. Our 16 16 demonstration of how a live in-person vote would 17 company prides itself on election-day support. 17 be audited? 18 That's a big service we provide. 18 MR. WAGNER: Yeah. Maybe I wasn't clear 19 REPRESENTATIVE FLEMING: One other quick 19 earlier on your question. If a ballot at the 20 question. The machine printed out a small piece 2.0 precinct, at the time of insertion, if you wanted 21 of paper. You also had a bigger piece of paper, 21 it to, on your screen it will show you your 2.2 we could see that. Which is going to be the 2.2 ballot that's being inserted. It will hold your 23 printout from the machine, bigger or smaller? 2.3 ballot in suspension until you say accept or MR. WAGNER: So the FreedomVote ballot is 24 24 reject. If you look at that screen and say: 25 what your voters are going to experience at the 25 Boy, I really didn't want to vote for that

Page 197 Page 198 candidate, you could hit "reject," and the ballot 1 1 other if they're close by. Obviously, you're 2 will come out. Take it back to the poll worker 2 going to have at least two, maybe three iPads in 3 and get a new opportunity. 3 a polling location. The idea that a husband and MS. GHAZAL: But during the risk-limiting 4 wife come in to vote, wife can check-in with this 4 audit, how would that work? one, I'm helping the husband. They are talking 5 MR. WAGNER: So during the risk-limiting 6 6 through a bluetooth. So that's not Internet. 7 audit the thing you have to remember, every 7 Just so we're clear, that is not the Internet, 8 ballot whether it's absentee, early, election 8 but they are talking through a bluetooth. When 9 day -- when I say every, I mean every -- every the husband checks in with me, his name will show 10 ballot is going to go through a digital scanner. 10 up as checked in here. 11 Every ballot has a digital image captured. Every 11 Now, Missouri, our rules allow communication 12 ballot can appear as part of the risk-limited 12 between this iPad and central office. So during 13 audit, that process. You can visually inspect 13 my time, I could sit at my desk and the newspaper 14 every ballot. 14 would call and I could tell them accurately how 15 REPRESENTATIVE FLEMING: Judge, do you have 15 many people had voted in a particular 16 a question? 16 jurisdiction. I can see, you know, the husband 17 JUDGE MCCOY: Obviously, we'll need more 17 and wife had checked in. REPRESENTATIVE FLEMING: Sara, did you have 18 than one poll book in a precinct. How do they 18 19 sync or how do you know that somebody's already 19 a quick follow-up? You don't? Okay. Senator? 2.0 voted? Somebody comes through and then goes and 2.0 21 21 gets back in line to another poll worker and SENATOR STRICKLAND: How many scanners do 22 tries to vote again. How do those sync? 22 you have per voting booth because it looks like 23 MR. WAGNER: That's a great question. So 23 it'd take -- it could take a little bit longer to 24 the iPads have what they call bluetooth. 24 scan and actually review your ballot at the time. 25 25 Bluetooth is about distance. They talk to each How many of those scanners do you have to have Page 199 Page 200 1 per -- voting booth I'm calling that, I guess? MS. BOREN: Right, but on election day? 2 MR. WES: So every precinct is going to have MR. WAGNER: Again, up to you. Missouri, we 3 one scanner, right? You could have a hundred of 3 were allowed that connection. I'm not trying to 4 these, a thousand of these at a location. If you 4 twist your arm one way or the other. I found it do what we call "full ballot review," that's what beneficial for me to have inquiries and for 5 you're -- sure, you could have people standing 6 6 trying to -- I'm sorry, go ahead. I'm just 7 there, you know, they're looking at their ballot. 7 saying we're trying to really kind of prevent the 8 8 Sure, that could happen. potential voter fraud from somebody going from q SENATOR STRICKLAND: So you don't have 9 poll to poll if you want this frozen out. If 10 situations where you have to have more than one 10 they voted at the school, you don't want them 11 11 showing up at the church and try to vote. scanner per precinct? 12 MR. WAGNER: Only if you wanted more than 12 REPRESENTATIVE FLEMING: Dr. Lee? 13 13 DR. LEE: So this is more like a usability one. 14 REPRESENTATIVE FLEMING: Nancy, did you have 14 question. So the small printout that you print 1.5 a question? 1.5 out from the tablet machine, have you done any MS. BOREN: How would your iPad --16 16 user study to see how likely the user is 17 REPRESENTATIVE FLEMING: Turn your 17 bothering to actually verifying because they come 18 to the section -microphone on. 18 19 MS. BOREN: How is your iPad populated with 19 MR. WAGNER: You're asking me how long it 20 the data? 2.0 would take a voter --21 MR. WAGNER: Through your VR system in your 21 DR. LEE: No. Have you done a study to find 2.2 office. 2.2 out how likely a user is actually verifying and 23 MS. BOREN: But is it connected? 23 then scanning because it's very different from MR. WAGNER: It will be when we download the 24 24 hand-marked where you have voters really 25 information initially. 25 carefully commit, whereas you're using digital

Page 201 Page 202 1 DR. LEE: Right. devices to make such an event and print it out, 1 2 MR. WAGNER: -- that we can security-seal how likely is a user actually verifying? 2 MR. WAGNER: I am from the "Show-Me" state. 3 3 the ballot, the ones that are cast on election DR. LEE: Yeah. day or early or absentee. No human being can get 4 Δ MR. WAGNER: Voters, they want to know that 5 to those because they're security sealed. If we 5 6 their vote is accurately reflected on the 6 end up in a recount in front of a judge, we can 7 equipment. So, yes, I see them. Yeah, they 7 honestly say when we raise our hand: Judge, no 8 stand there and they look at it. That's a good 8 one's tampered with these ballots since election 9 thing. night. 10 DR. LEE: No. No. I'm not asking -- I'm 10 I use this example all the time. It's like 11 not asking what you believe. I'm asking whether 11 when you go to the doctor, the doctor might take 12 you've done a user study. 12 an x-ray of your arm before he uses a scalpel to 13 MR. WAGNER: Oh, no, we have not. 13 open you up. We're giving you an x-ray through 14 DR. LEE: Thank you. And also, because you 14 our auditing software of what's inside that 15 actually secure the ballots in, you know, the 15 ballot box so a human being doesn't actually have 16 physical device, right --16 to touch it. And I hope I answered it. I get 17 MR. WAGNER: Right. 17 your point. DR. LEE: And then if you want to have the 18 18 REPRESENTATIVE FLEMING: Wes, what state is 19 option that supplies a digital image sometimes 19 in your user system? What state is in your user people say I don't want to be hampered, manually system? 2.0 2.0 check their ballots. Again, so similarly user 21 21 MR. WAGNER: All through the Midwest: 22 study, right? So these small pieces of paper, 22 Missouri, Iowa, Kansas. We have --REPRESENTATIVE FLEMING: Several. Okay. 23 how easy do people find to go through those? 23 24 MR. WAGNER: Well, it may a little tangent 24 MR. WAGNER: Arizona. REPRESENTATIVE FLEMING: This system that 25 25 but the part that I like is $\ensuremath{\text{--}}$ Page 203 Page 204 1 you're showing us today? directions over to the church. There's some 2 MR. WAGNER: Yeah, we have approximately A bells and whistles in that, but I would encourage 3 hundred and sixty accounts in Missouri and Kansas 3 you baby steps first. REPRESENTATIVE FLEMING: You had one last 4 and Iowa. Δ 5 follow-up, Cynthia? REPRESENTATIVE FLEMING: Any statewide? MR. WAGNER: We do not have statewide. MS. WELCH: Yes, and this is real quick. 6 6 7 REPRESENTATIVE FLEMING: Okay. Can -- on the ballot marker, is that the 8 Yes, Cynthia? Quick question? 8 largest screen tablet that we could connect to q MS. WELCH: I have two questions as it 9 that system, or ... 10 relates to the poll book. The first one is on 10 MR. WAGNER: Yes. 11 direct -- we talked earlier about directing 11 MS. WELCH: Okay, thank you. 12 voters to the correct precinct and making sure 12 MR. WAGNER: We could increase the font, 13 that they're not disenfranchised. Will the poll 13 just so you know that, on the screen. 14 book allow us to tell people which precinct they REPRESENTATIVE FLEMING: Amy? 15 are to vote in? 1.5 MS. HOWELL: Quick question on the printout MR. WAGNER: Yes. for individuals. Does that -- is there a way to 16 17 MS. WELCH: Without it being connected to 17 enlarge the font on those, the individual 18 the Internet? verification? 18 19 MR. WAGNER: Yes. So I am at the wrong 19 MR. VANDERBURG: Yes. REPRESENTATIVE FLEMING: Wes, a good 20 place. I should be at the church, okay? So you 2.0 21 scan my driver's license, wrong location. So 21 presentation. Thank you so much. I appreciate 2.2 it's going to direct me to the right location. 2.2 you being here. 23 In Missouri, where it's really nice, we get that 23 (Applause) 24 redirect. If you do have an Internet connection, 24 MR. MONDS: Representative Fleming? I'm 2.5 you have Google maps, you can text the driving 2.5 sorry.

Page 205 Page 206 1 REPRESENTATIVE FLEMING: John, you're going 1 Shelly. I'm with Smartmatic. First off, I want 2 2 to make me run over. You know I'm going to to thank the state of Georgia, secretary of 3 3 charge you for this, right? All right, quick state's office, and the SAFE Commission for question, John. giving us this opportunity to meet with you 4 4 MR. MONDS: We're in the process of saying 5 today. 5 6 that you're selected sometime in 2019 or 6 What I'm going to do is I'm going to tell 7 whatever. How long would it take to implement 7 you a little bit about the company Smartmatic, 8 the system throughout the state? 8 then I'll turn it over to my colleagues: Ed 9 MR. WAGNER: I suspect it's true for all of 9 Smith who is our director of services and James 10 the vendors. We're already all making 10 Long. James is the project director for a recent 11 preparations now. 11 contract with LA County which is the largest 12 REPRESENTATIVE FLEMING: Good question. 12 county in the United States. Thank you, John. 13 13 So Smartmatic, we are a global company. I 14 Wes, thank you very much. 14 don't know if you can see it, but the light blue 15 Our next presentation, as they pack up, will 15 depicts where we have offices. The darker text 16 be Smartmatic. And we'll let these good folks 16 is where we have supported elections. We have 17 break down and we'll get our next set up and get 17 supported elections on five continents. We are started. 18 18 the largest elections company in the world. 19 (pause) 19 So to look at some of the numbers, clearly 20 REPRESENTATIVE FLEMING: All right. We're 2.0 from all of the work we've done, we've supported 21 3.7 billion ballots cast. The elections that we 21 going to go ahead and get started with our next 22 presentation. This is Smartmatic. 22 have supported, 62,000 candidates have been 23 And I'm going to turn it over to you and ask 23 elected. In of all this activity and this 24 24 you to introduce yourself. history, we have not ever been breached, no vote 25 25 MR. SHELLY: Sure. Sure. My name is Kevin was ever changed, it's always been very Page 207 Page 208 1 successful. 1 7,000 islands. We use motorcycles to get the 2 So this is just a sample of some of our 2 equipment over there, and I think in some of the 3 clients. I mentioned LA County. This was 3 slides from before, we actually used donkeys. 4 awarded to us in June of this year. LA County 4 But what we did for the customer was just -has 5.5 million voters. It's larger than 40 of 5 REPRESENTATIVE FLEMING: Do you use 5 the states in our nation. It's a very, very big 6 6 elephants too? 7 opportunity for us. In Belgium, we are in the 7 MR. SHELLY: I don't know --REPRESENTATIVE FLEMING: (indiscernible) --8 midst of a 15-year contract to run their 8 q elections. In the Philippines, we have a history q MR. SHELLY: That's --REPRESENTATIVE FLEMING: That was going to 10 of supporting their elections, and I've got a 10 11 video that I will show you that kind of depicts 11 (indiscernible). 12 everything that we did to support our customer. 12 MR. SHELLY: That might be a best practice 13 And it's not to say that we'll face some of those 13 next time because they're probably more effective 14 challenges here in Georgia, but I think it does 14 than donkeys. But, again, you know, I think 15 show what we do to support our clients in their 15 there's 55 million voters, 62,000 -- 55,000 candidates. So it was just an enormous 16 requirements. And of course, we've got a legacy 17 of supporting elections in the United States. 17 undertaking and here are the numbers. 18 So let's go to the video. 18 (Video image projected) 19 (Technical difficulties) 19 MR. SHELLY: Okay, at this point, I will 2.0 MR. SHELLY: We can run elections but we 2.0 turn it over to Ed Smith, the director of United 21 can't run a video. It's right there. So it's 21 States services. 2.2 not going to ... 2.2 MR. SMITH: Thank you, Kevin. 23 All right. So we don't have sound so I'll 23 Once again my name is Ed Smith. I'm ad lib. 24 24 director of US global services. Today we're 25 Literally, we deploy voting equipment to 2.5 bringing to you a voting system that has four

they wrote VVSG 1.0. And that was written in

Page 209 Page 210 1 pieces of hardware. We're starting with an 1 scanner, the 1800 Plus. We have over 92,000 of 2 electronic poll book, the VIU-800 which serves as 2 these deployed in the Philippines, and as you saw 3 a statewide electronic poll book. It also serves 3 with some of the competitive offerings, the voter 4 to activate voter cards in the polling place. 4 will mark in private a paper ballot, put that in the slot, and use the screen to review the 5 And once a voter is credentialed, you can 6 scan their voter ID in an integrated scanner and 6 selections. And the nice, large, red and green 7 make out this smart card with this encrypted 7 buttons to either cast their ballot or bring it 8 information. 8 back to correct any errors. 9 They'll walk that over to an A-4 series 9 All of this hardware is underlaying and 10 ballot-marking device. We have deployed 5,000 of 10 supported by our election management platform. 11 these in Belgium. It's a tried-and-true 11 And the election management platform is comprised 12 ballot-marking device. As you can see, it's very 12 of five pieces that run seamlessly as one piece 13 self-contained. It's lightweight. And we'll 13 of software. 14 offer it here in the state of Georgia with a 14 The first is the election configuration 15 cut-and-drop feed path on the right-hand side 15 system and it's, along with the results 16 and, where needed, accessibility pieces on the 16 management system, comprised of what you 17 left-hand side. And the voter will touch the 17 traditionally think of as an election management 18 screen, they will make their selections, review 18 system where the election configuration system is 19 their selections, and then they can review and 19 doing ballot layouts, ballot proofing, and 2.0 verify their selections on the voter-verified machine programming, and the results management 2.0 paper audit trail. We'll talk about that a 21 21 system is doing the results aggregation and 22 little bit more in a moment. 22 reporting. But we've added to that three 23 If the state so chooses to go with paper 23 additional components. 24 24 ballots, we do offer both precinct scan and The first is election-night reporting which 25 25 central count scan. This is our precinct offers a finer grain reporting facility and also Page 211 Page 212 1 population of your county and state websites. 1 2005. Keep that in mind, 2005. They updated 2 2 To that we have added Election-360. And those to VVSG 1.1 which are the current operative 3 Election-360 offers both the opportunity to 3 standards in 2015. 4 examine your election on election day in real Δ Now, do you think that the threat 5 time and understand things like polling-place 5 environment to the voting system has changed 6 wait times, if machines are down and in need of 6 since 2005? Yes, indeed, it has. And so there's 7 repair and provide help-desk support and in 7 a huge advantage to the state by selecting a 8 post-election audit and forensics. 8 system that has started its development against q Lastly online ballot delivery provides a q these newer standards with their higher 10 portal for the voter to log in, get their ballots 10 requirements for security and their higher 11 printed, and turn it back in via mail or by hand. 11 requirements for accessibility. And we're the 12 The state rules allow they are a printed ballot. 12 only folks with that. 13 So that is the system we are bringing to you 13 We recognize because of our worldwide 14 today. As we advance, we'll look in a little bit 14 deployments, as Mr. Shelly pointed out earlier, 15 more detail. 1.5 some very unusual threats here. We can only say First off, let's talk about security because the parties don't necessarily trust each other, 16 16 17 it's on everybody's minds, right? We have the 17 political parties, but in other countries that's 18 only system that you're going to see here today 18 certainly taken to a different level. And 19 that from its inception was built to comply with 19 threats like voter coercion and stuff exists that 20 VVSG 1.1. You might ask: Well, what's VVSG 1.1? 2.0 have forced us to take a deeper and more 21 So there were the original voting system 21 comprehensive look at security than perhaps other 2.2 standards promulgated by the Federal Election 2.2 systems that you'll see. 23 Commission in 1990. Those were updated in 2002 23 And we recognize that it's a combination of 24 and then when the EAC came along, also in 2002, 24 people, processes, technology, communication,

2.5

governmental policy, all of those things come

21

2.2

23

24

25

and security. You hear that a lot at the federal

federal level and it really was the conversation

accessibility or you have security. And so what

I've been working on for the past two years is

level. I spent a good amount of time at the

that we engaged in the most: when you have

August 30, 2018 Page 213 Page 214 1 together to create security in addition to the 1 vote on back home and that creates confusion. 2 2 So uniform system, uniform machine allows higher degree of inherent security in these 3 devices. 3 for some serious education advantages. It also 4 So we're bringing forth today -- and it's a 4 allows for uniform equipment maintenance, spare pleasure to coming before you -- in particular 5 parts and supply chain that are all the same. 5 6 this A4 ballot-marking devices. So speaking 6 All of your technicians across the state are 7 today just briefly, it is a device -- once again, 7 trained to deal with one and only one of the same 8 we've deployed 5,000 of these in Belgium. It is 8 device. So there's certain advantages there as 9 for in-person both early and election day. 10 I know on your request for information this 10 You don't need ballot on demand. These 11 would be Voting Method 2. And when you have 11 units store all of the ballot styles for a given 12 ballot-marking devices as the sole option for 12 election. So as envisioned by the request for 13 people who are voting, you get a number of 13 information, voters from any part of the county 14 advantages. One is a uniform early and 14 can go to any vote center and vote early 15 election-day voting experience. It's also a 15 regardless of if that vote center's across the 16 uniform poll worker experience so it will 16 county or their nearest vote center because all 17 minimize your poll worker training. It also 17 of the styles are contained inside the units. 18 minimizes and aides your voter education and 18 We do not tabulate from barcodes. It's a 19 outreach. 19 sensitive subject. It's come up. I'm on 20 If, for instance, different counties are 2.0 Twitter. I see it every day. You probably do 21 21 voting on different technologies or you have too. So we are taking the human and readable 22 different machines, when voters come from outside 22 part of the VVPAT, the tape that comes down, and 23 the Metropolitan Atlanta area, downtown Atlanta, 23 once a person accepts it, it's cut off and 24 24 to work, they see machines on billboards and it dropped in a bag. And we are doing optical 25 25 may not be the same machine they're trying to character recognition on that tape and tabulating Page 215 Page 216 1 it from the human readable just as a person basically to bridge that gap and to bridge that 2 verified. We're not tabulating from barcodes. 2 gap with this solution. So let's start first with the election 3 So once again, the same as Georgia voters 3 4 are doing now, they come and they get Δ management platform as mentioned. This is a 5 5 centralized platform. By centralized, I don't credentialed, they activate the unit and make 6 their selections. Ultimately, they print the 6 want you to get the impression that this all 7 7 networked and, you know, on the Internet. What VPAT tape, review that, and cast their ballot. 8 But it's a much better technology, a much better 8 we mean by centralizing, that each of these q graphics, user experience, more modern, certainly 9 proponents, all five of them, were developed at 10 more secure. 10 the same time, using the same user interface and 11 So with that, I'll turn it over to my 11 the same user experience. 12 colleague James Long. 12 So across the whole platform as you interact 13 MR. LONG: Again, I'm James Long. Some 13 with these different systems, you'll get the same 14 people may recognize me. I used to work here in 14 experience. Nothing is bolted onto the system or 15 Georgia quite some time ago. I've made it around 1.5 an add-on. It was all developed from the ground 16 the country and now I'm back here. up to meet the growing security concerns and 17 So what I want to talk to you about is our 17 accessibility concerns of the community. 18 effort the past couple of years has been to 18 This is collaborative software as well, 19 basically bridge the gap between accessibility 19 meaning that within the election configuration

20

21

2.2

23

24

2.5

system this is where you put in your candidates

and all of that information. You can have

counties where there's a lot about

several client relationships over your larger

ballot-proofing or a lot of machines that you can

create. You can have several clients to create

20

21

2.2

23

24

25

This is very modular so you can put whatever

you want on the backside to meet your individual

jurisdiction's needs. This one's configured to

confirmation card. It goes inside so it works

just like any other poll book. You select a

this looks like. So this is the voter

work with a card given to a voter so that is what

August 30, 2018 Page 218 Page 217 1 these machines from an open format like 1 You don't have to insert the information again 2 2 ballot-proofing format. That's streamlining the for your districts, you just create a new 3 process, making it quicker. 3 election. It loads all of the previous data, for 4 your jurisdictions and precincts are laid out, 4 So let me show you two things real quick on the election platform. First thing I want to 5 all of that information. And you can modify the 5 6 show you -- this may be more of interest to, you 6 information of course from election to election, 7 know, the secretary of state's office -- we 7 polling centers, et cetera. But this allows you 8 understand that you create all of your ballots 8 to manage it more centrally. 9 centrally. These ballots are created, you know, So I mentioned ballot-proofing. The screen 10 at the secretary of state's office and 10 is a little whited-out here, but what you'll see 11 distributed down to the election jurisdiction for 11 here is an interactive view of the ballot. So 12 deployment on the machines. 12 what you can do here is you can check out some 13 So right now you currently use a system 13 ballot styles because, as I said, this is 14 which requires you to create a database for each 14 collaborative. You can check out the ones you 15 jurisdiction copy and you have to copy to the new 15 want for review. 16 jurisdiction or you have to -- so you have to 16 You can perform that review by adding 17 copy for a new election or you have to put all of 17 comments anywhere you want to on the ballot. It 18 this information in again, and this can introduce 18 will also identify any errors that the machine 19 state integrity issues, et cetera, et cetera. 19 itself has identified, saying there's probably 2.0 2.0 one issue here, like this ballot where you have a Our system allows you to add every 21 21 jurisdiction to a single platform. You can contests rolling over different pages and into 22 manage those jurisdictions, you can share 22 the margin. You can correct those issues right 23 information between those jurisdictions, and 23 here (indicating). All of your actions that each 24 24 user does -- each user has a log-in, so there's centrally for contests, you just put the 25 25 candidates in once from election to election. no one log-on for everyone. Their actions are Page 220 Page 219 1 logged here and this ballot is either picked back candidate, you get your card, you give it to the 1 2 2 up for more design help or accepted. All that's voter. 3 locked over here. 3 So let's walk through a few screens here. 4 So let's talk about what's in a precinct 4 So these are the kind of screens that you should 5 5 because this is what the voter receives. This is be seeing right here. So you insert your card. 6 their interaction. As Ed indicated, we have this 6 Move to the next slide. 7 electronic poll book system. It's designed in a 7 Here are some options that you can add. 8 way to be extremely lightweight and it's arranged 8 These are configurable, what you want to be able q to have two different sides. q to initialize for the voter before they get to 10 The first side is basically your poll-worker 10 the polling station. The idea here is to let the 11 side, and then we call this the voter side. So 11 voter be as independent as they're capable of 12 this is configurable to whatever that 12 being. 13 jurisdiction needs. If they require signatures, 13 So you can to go ahead and pass up these 14 a signature pad can be added here. If they 14 options to the machines. It's audio voting, but 15 require authorization to vote, like in Ohio, you 1.5 they need to connect their own sip-and-puff 16 can print out a receipt so that they can take 16 device. And the instructions will change on the 17 that to the polling station to get their ballot 17 screen based on these options as well. So the 18 and continue the process. 18 user is given a just generic list of instructions

19

2.0

21

2.2

2.3

24

25

of how to interact with the machines. It's

audio, et cetera, et cetera.

audio. All the instructions are on the different

this card to the voter, and they'll come to this

machine here. What you see is what we idealize

here for George. This is a -- basically, it's a

So once you've created the card, you'll give

Page 222 Page 221 1 digital interface with a cut-and-drop, 1 but you can change these throughout the 2 2 voter-verified, paper-ready, so what you'll see experience. 3 to the right. All the accessibility controls are 3 So let's say you get into the experience, 4 on the left. Δ but you don't know what to expect. If you've 5 never voted on this and you think that yeah, the 5 And so the voter, just like they do right 6 now, will insert the voter card. One difference 6 text will be fine, I don't have to read it, and 7 here is that they can insert this card any you get in there and you realize the text is a 8 direction they wish. It will activate the 8 little small for me, so you can adjust it. I'll 9 system. show you that in just a moment. 10 So this is the screen. We'll insert the 10 Language, again, you can, you know, be a 11 card. We have offered many different languages. 11 pretty proficient English-speaker and decide when 12 I believe that only Gwinnett County has an 12 you get in there, maybe I want to see it in a 13 alternative language requirement here, which I 13 different language. The help is contextual as 14 believe is Spanish, so Spanish can be added in 14 well. It's not just a generic help. It's -- it 15 here. No problem. 15 tries to anticipate where you are in the process 16 We go to the voting experience. One thing I 16 to provide you help. It's not just a generic, 17 want to point out is -- oh, here it is. I want 17 just something out of a PDF or something to count 18 to talk to you real quick about this voting 18 the vote. 19 experience. This is where we've vested a 19 The next thing you see here is the contest 2.0 tremendous amount of time. So this is laid out 2.0 navigation. It tells you the number of contests, 21 21 intentionally into basically three zones. We which contests are relevant, allows you to 22 have the top zone here (indicating) which is 22 navigate back and forth through the contests. 23 where all of your help, accessibility, and 23 You have the contest name pretty large here. I 24 24 language features are presented. So want to draw your attention right here 25 25 accessibility, should that be your disability, (indicating). These are the instructions. Here Page 223 Page 224 1 we have included this feedback in this. MR. LONG: Sir? 2 So we've worked with disability experts 2 REPRESENTATIVE FLEMING: We're getting real 3 across the country and Princeton University as 3 close to the five-minute mark, so I just wanted well to find a better way to address the plain 4 4 to let you know. 5 language requirement. So you'll see that term 5 MR. LONG: Thank you. I'm going to speed creep up in a lot of documentation, a lot of 6 6 this up real quickly. So you see that it changed 7 accessibility guidelines saying use plain 7 here. You have zero selections, contests fully 8 language, and then you see this two-page 8 vot.ed. q definition of what plain language is. q So let's go to the next. 10 So in that effort, what you will not see in 10 I print it out real quickly. Got some 11 our system are technical terms that you normally 11 accessibility features. I just want to point 12 see in an election of lingo like under- and 12 out, we also offer small text as well. This 13 overvote, vote for one. We try to guide the 13 ballot is -- the word's not going to come to me, 14 voter by talking to them in a voice that would 14 but, anyway, it's kind of counterintuitive and, 15 normally converse. 1.5 you know, large text would work better for some 16 So here we have one option. So this says 16 people so we could do that. 17 vote for one. So we said: Vote for one. You 17 Let's go here to some of the usability 18 have one selection left, meaning that you haven't 18 features. We'll white this over. One thing I 19 made any selections yet. And the contest is 19 want to show you is in messaging. You have 20 unvoted. So we present this in three different 2.0 here -- this is a message, again, you won't see 21 ways to help guide the voter through the process 21 the word "undervote." This is where the 2.2 to ensure that they know at all times where they 2.2 undervote contest -- it tells you what happened 23 are in the voting process. 23 and the consequences of you continuing. 24 24 So let's vote for someone real quick. Keep going. 25 REPRESENTATIVE FLEMING: James? 25 We have the review screen. This lets you

Page 226 Page 225 1 modify your selections. You can go back to your 1 the state does want to go a different direction 2 2 contest and come back forward without having to than to go the paper route, we offer other 3 navigate back and forth through the ballot. 3 options as well, which is the paper scanner. 4 4 It -- you know, I could demonstrate it. You've This is the paper record that we'll print from the system. You'll see there is a QR code 5 already seen two of them. If you mark a paper 5 6 for more rapid auditing or processing. But, 6 ballot, it scans, it has a review screen. The 7 again, this here, the text is what is actually 7 voter can review the choices and accept the 8 interpreted. This is what is read back to the 8 ballot. 9 voter using its accessible session, and this is Yeah, this is basically the end of the 10 also what is tabulated from when the voter 10 presentation. Just want to close and say, you 11 accepts the ballot. It prints when it's 11 know, we're, you know, a full-functioning 12 accepted. 12 elections company. We offer logistic support, 13 And this is not visible to the voter, but it 13 manufacturing, training services. 14 ensures that you can do one-to-one ballot for 14 So for further brevity here, we'll open it 15 risk-limiting audits. It will print a code on 15 up for questions. 16 the ballot. The code has no associations to any 16 REPRESENTATIVE FLEMING: James or whoever, 17 voter or anything. The voter never sees it 17 do you have any idea how much it would cost 18 prior. It's the last thing it prints before it 18 Georgia to implement one of these systems? 19 cuts the paper and drops it into a receptacle. I 19 MR. LONG: I'm just a tech. 2.0 want to make sure that that's clear that this 2.0 MR. SHELLY: So I anticipated that question. 21 21 isn't reel-to-reel where you could potentially So I think I have seen in the newspapers or 22 violate voter privacy. It actually cuts and 22 articles that there was numbers as low as 23 drops into a large container that automatically 23 30 million, which was primarily paper, and then I 24 shuffles. 24 think there was an upper limit of a hundred and 25 I want to kind of just do this quick. If 25 fifty million. Page 227 Page 228 1 REPRESENTATIVE FLEMING: I've seen those. design as well? 2 MR. SHELLY: We can fit in there. Certainly MR. LONG: Yeah, so the same record that 3 it would depend on the density of the machines, 3 comes out of the computer that you would tabulate the configuration of the machines. You know, it off of would be (indiscernible), so you wouldn't 4 Δ 5 5 lose any accessibility features. The cost -would depend on the requirements in the RFP, but 6 without giving you a number, which is I know what 6 DR. LEE: I'm talking about the ballot 7 you want, we would be very competitive in the RFP 7 design. Ballot design. 8 8 MR. LONG: Yeah. Yeah. You can load any when it comes to technology, past performance, q and price. q ballot design the state requires. To show the 10 REPRESENTATIVE FLEMING: No, I understand 10 cost differences, the amount of equipment, you 11 the range and I appreciate that. That's the 11 need more of this than you need of that. 12 range I've heard people talk about. 12 REPRESENTATIVE FLEMING: Coming on around, 13 I'm going to start on this side of the room. 13 Sheila, do you have a question? 14 Doctor? MS. ROSS: Out of curiosity, which way did 15 DR. LEE: Just so I understand, so 1.5 Los Angeles go? Paper? Or did they use a machine? And how much did it cost Los Angeles 16 paper-scanning-based technology, that would be 16 17 \$30 million range versus we go with the fancy 17 Count.v? 18 tablet, it will be upwards of a hundred-and-fifty 18 MR. LONG: So the technology in Los 19 million dollars; is that right? 19 Angeles -- so the first thing that I would say, 20 MR. SHELLY: Yes. I mean, so that's the low 2.0 Los Angeles centrally tabulates so they went with 21 end to the high end. This piece of equipment 21 the paper route. So it was a digital interface 2.2 would have a cut-and-drop printer, okay, so that 2.2 that prints on a thermal piece of paper that's 23 would be additional. And this is the poll book. 23 eight and a half by eleven. So it prints the selections of the voter and the QR here 24 DR. LEE: So you go into paper scanning 24 25 solution. Do you have support for the ballot 2.5 (indicating), and then it goes into a secure

2.2

23

24

25

This side of the table? One more pass. Amy?

the instance when a paper ballot is used, they

are still for individuals with disabilities who

MS. HOWELL: Point of clarification. So in

August 30, 2018 Page 229 Page 230 MR. SHELLY: No. We -- we were awarded this 1 receptacle in which they gather it electronically 1 2 2 contract in June of this year. and take it back to central to tabulate from the 3 precinct tablet. 3 MS. ROSS: So when will your first election REPRESENTATIVE FLEMING: Estimation of the 4 4 be so we can watch it? cost for Los Angeles you think as far as --MR. SHELLY: So there's going to be some 5 MS. ROSS: What would be estimated and how 6 6 intermediate mock elections ... 7 much did it cost to get them online? MR. LONG: So the first time it will be MR. LONG: I think the total procurement, 8 voted is September of next year, '19. So that 9 because there is design work here -- it's a will just be a pilot. It will be used in the 10 custom solution, they don't have it -- it's not 10 local election in November of next year, but its 11 like we took it off the shelf and gave it to 11 full-metal deployment will be for the 2020 March 12 them -- was two --12 primary. MS. ROSS: Thank you. 13 MR. SHELLY: It was 200 and I think the 13 14 initial --14 REPRESENTATIVE FLEMING: Over here on this 15 MR. LONG: 280. 15 side? Lynn? 16 MR. SHELLY: Well, the 280 is -- that would 16 MS. BAILEY: Thank you. Would you please 17 include several years of maintenance and 17 explain to me then how the QR code is used? 18 everything. But the base years of the contract, 18 MR. LONG: Sure. The QR code --REPRESENTATIVE FLEMING: Remind us what the 19 I think, are like 230, but it's a very different 19 contract because we're actually doing the 20 QR code is, Lynn. You're too smart for some of 2.0 21 21 software development for them and the warehousing 115. 22 and cards and the maintenance. I mean, it's 22 $\boldsymbol{\mathsf{MR}}.$ $\boldsymbol{\mathsf{LONG}}\colon$ Do you have the slide to the 23 pretty much end to end. 23 image. Keep going. 24 MS. ROSS: Have you not had an election with 24 Here, that's a QR code. 25 25 REPRESENTATIVE FLEMING: Okay. them yet? Page 231 Page 232 1 MR. LONG: So it stand for quick response. have access needs? You're still getting the 2 You can embed a lot more data in that than you 2 touchscreen in addition? 3 can in your typical barcode. 3 MR. LONG: We don't necessarily recommend 4 So this barcode is used several different 4 having the -- your -- you know, you're ultimately 5 5 ways. You can use this for quickly tabulating putting an additional barrier in front of someone 6 using a third-party auditing system, meaning like 6 that already has barriers to vote. Because they 7 a system that doesn't tabulate the same way that 7 have come to this machine first to get their 8 8 printed ballot or to get their marked ballot. we do. So unless you hire some independent q auditing agency that wanted to, you know, scan it q Then you have to take that ballot to another 10 or do a recount for you, so you can use the QR 10 machine. 11 code for that. 11 Now, this one could tabulate for you as 12 We use the QR code, you know, predominantly 12 well, but then you have two machines that have to 13 just for those features and just for auditing 13 consolidate at the end of the night, which, you 14 features. Internally, before the ballot is cast, know, it might not be an issue for you as well, 15 we take the content of the QR code, we compare it 1.5 so ... 16 to the OCR text and to what was contained in the 16 There's many way to arrange it, but if you 17 machine buffer before it was printed. We compare 17 did it in a traditional fashion and you treat 18 all three of those together to ensure that the this only as an accessible machine, you are going 18 19 data and the QR code matches what was printed on 19 to introduce the issue of barriers. 20 the tape. 2.0 MS. HOWELL: Okay. So your solution is they 21 REPRESENTATIVE FLEMING: Coming on around. 21 use a paper ballot. How do they provide access?

2.2

23

24

25

MR. LONG: So if they require consolidation,

most of those jurisdictions, you know, will do

exactly that. They have it print from here and

have the voter take it to another machine. A

Page 233 Page 234 1 machine like this usually can't validate the 1 presentation of Election Systems and Software. 2 2 ballot in the same way that this can. It has no So I'm going to turn to you and ask you to 3 accessible, you know, controls on it for the 3 dazzle us. MR. CAMERON: Great. 4 voters. So after it's been cast, they can't Δ actually verify it. It's just something that the REPRESENTATIVE FLEMING: All right. 5 6 counties exempted, the jurisdictions exempted. MR. CAMERON: We will do our best. Now, we can tabulate it and we can treat it REPRESENTATIVE FLEMING: Welcome. Welcome. 8 just like it is a ballot. And you can have this MR. CAMERON: Thank you, Representative 9 in addition to, but, you know, there's other Fleming and members of the commission. My name 10 procedural barriers. 10 is Jeb Cameron with Election Systems and 11 MS. HOWELL: Thank you. 11 Software, and we brought today, in response to 12 REPRESENTATIVE FLEMING: Okay. Gentleman, 12 your RFI, a system that we think will be a great 13 we appreciate it. We know you had to work 13 solution for the state of Georgia. 14 through some technical difficulties. You had to 14 I've got a couple members of our team here 15 integrate with a system that was already here. 15 and I'll briefly introduce them. We have Mac 16 We understand that's difficult so we appreciate 16 Beeson. Mac is a vice president of regional 17 you working through that. Good presentation. 17 sales from North Carolina. And we have 18 Thank you very much. 18 Miss Kathy Rogers, senior vice president of 19 All right, next up. Next we will have 19 governmental relations from down on the coast, 2.0 2.0 right outside of Savannah. I saw Kim Carlisle Election Systems and Software. And we're going 21 21 floating -- there she is. Kim Carlisle is one of to allow them to break down and allow Elections 22 Systems and Software to set up. So we'll stand 22 our account managers from here in Columbia 23 in recess for a moment. 23 County. 24 24 (Pause) Like I said, my name is Jeb Cameron. I am a 25 REPRESENTATIVE FLEMING: We have our next 25 regional salesperson. I grew up an hour and a Page 235 Page 236 1 half south of here, in Swainsboro, Emanuel 1 around Georgia here. We have Alabama, South 2 County. I live in Cobb County now. 2 Carolina, North Carolina, Arkansas, West 3 I'm going to turn it over to Mac and Mac's 3 Virginia, several customers in this area with 4 going to give you a little introduction to our 4 statewide implementation. 5 company. We'll talk a little bit about what you But what we want to spend our time on today 6 see in front of you and then we would like to 6 is talking about this voting system. We're so 7 really focus our time on the equipment itself and 7 proud of this system that we're showing you 8 how this solution would work for county election 8 today. We call it the power couple. Why is it q officials, for poll workers, and most q the power couple? Because this is the system 10 importantly, for voters. Thank you. 10 that's revolutionizing the election business 11 MR. BEESON: All right. Thank you, Jeb. 11 todav. 12 So, again, my name is Mac Beeson, regional 12 We've got our DS200 precinct scanner. I'm 13 sales manager with Election Systems and Software. 13 going to start talking about that in just a 14 And briefly, a lot of you are very familiar with 14 little bit here. 15 our company, but for you that are not, we'll talk 1.5 So this system was built entirely with the 16 a little bit about Election Systems and Software. 16 poll workers in mind. So what makes this so 17 We are a US-based company and we are focused 17 simple? Literally all a poll worker has to do in 18 entirely on US-based elections. We've been in 18 the morning is look at the screen. It'll 19 business for around 40 years. We're 19 automatically turn on, automatically print your 20 headquartered in Omaha, Nebraska, have over 450 20 zero tape, and you're ready to go. We have poll 21 US employees. We are currently in 42 states. We 21 workers standing up and giving us ovations in 2.2 have a lot of experience with statewide 2.2 training class because they did not realize a 2.3 23 implementations, statewide roll-out voting voting system could be so simple for them to get 24 systems. Currently we're the statewide vendor in 24 started. 25 12 states, including several that are right 25 The DS200 is a digital scanner that takes a

Page 237 Page 238 1 digital image of the ballots that are scanned. 1 ballot. If they want to cast that ballot, they 2 2 can actually do that as well. But it takes about Beyond the ease of use for the poll workers, 3 3 we've got a lot of things that are very two seconds to take a digital image of the ballot 4 4 and so at the end of the night, after you close attractive for others as well. You see this very large touchscreen here. Great interaction with the polls, bring the results back to the 5 6 the voters. We've talked about with this system 6 elections office, not only do you have a paper 7 you can actually use it for full-size paper 7 ballot here with all of your selections, all of 8 ballots that are marked with a pen. 8 the voters' selections, you also have a digital 9 So in this case, I've marked a ballot. We 9 image of every single ballot. And you also have 10 run it into the scanner and you can go with any 10 the software, the image of the digital -- the 11 orientation. Put it in faceup here. It takes 11 digital image of the ballot, you have the vote 12 about two seconds to scan the ballot. This was 12 cast record, and you have exactly how the system 13 an overvoted ballot. Again, you've got a large 13 interpreted that ballot. 14 touchscreen that notifies the voter that we've 14 You've seen a lot of different -- you've 15 got this issue. We keep the ballot into the 15 already seen a lot of demonstrations of systems 16 throat of the scanner so if the voter to call a 16 here. We're focusing on while the voter is in 17 poll worker over to assist, they don't -- they're 17 front of the machine, letting the voter make the 18 not notified of how the -- what the voter -- how 18 decision that they overvoted. We want it to 19 they marked the ballot. 19 resolve right here in front of the voter. Let 2.0 In this particular case, it says clearly in 2.0 the voter make that change and rescan their 21 ballot. 21 the contest for favorite agricultural product in 22 Georgia, you have two choices, and you made two 22 We don't want you back at the back end of 23 choices and you're allowed one. So then the 23 the system having to go through a bunch of images 24 24 and make changes. We want to provide the voter voter has two options. Hopefully they will 25 25 return the ballot and spoil that and get a new with as much information as possible. This Page 240 Page 239 1 system right here, if it does not recognize the 1 the day that poll workers are going to have to 2 marks or if it's an overvoted ballot, it's going 2 change. 3 to be presented back to the voter and the voter 3 In this particular configuration, we use, like I said, full-size paper ballots and very 4 then has an opportunity to correct that error, 4 5 not election officials back at the end of the 5 simple set-up for the voters throughout the day. night trying to do that. Very easy for the poll workers and this system is 6 6 7 So, again, the DS200, very simple for the 7 well-tested and well-used all over the US. Large 8 poll workers. Like I said, you literally lift a 8 jurisdictions like New York City. We have small 9 screen, print your zero tape, it's ready to go. 9 counties in Nebraska with less than 200 10 Another feature of this system that we 10 registered voters. This system is proven and by 11 really like is that at the end of the night, you 11 far the largest, most widely-used precinct 12 don't have poll workers getting on their hands 12 scanner in the US. 13 and knees, having to get these paper ballots. 13 All right, now I'm going to turn it over to 14 All of the ballots go into a blue bin and at the 14 Jeb to talk a little about the ballot-marking 15 end of the night, literally, the poll worker just 1.5 universal device. MR. CAMERON: Thanks. 16 has to shut the bin, pull the ballot box out, and 16 17 then this has wheels and a handle so all the poll 17 We wanted to spend the time focusing on the 18 workers have to do is lock this box and bring it 18 DS200 first, and the reason I demonstrated that 19 back to the elections office. Poll workers are 19 first is because across the configurations that 20 never physically touching the ballots. 2.0 we're talking about, and of course, in response 21 Also the media on the DS200 uses a USB thumb 21 to your RFI, we know that the state of Georgia is 2.2 drive so it's an encrypted, secure thumb drive. 2.2 looking at a couple of different configurations: 23 There's no batteries for the components for poll 23 A straight paper system, ballot-marking devices

24

25

workers to have to deal with. There's no rolls

of paper or anything that's printing throughout

24

25

for all voters, or sort of a hybrid system of the

two where maybe early voters vote on the

20

21

2.2

23

24

25

August 30, 2018 Page 241 Page 242 1 ballot-marking device and on election day all 1 vote, go through the check-in process, vote, and 2 2 cast their ballot just like every other voter voters would get a paper ballot. 3 3 So we want to focus on the DS200 first within the precinct. 4 because this is where the tabulation happens In addition to the ExpressVote, we also have 4 across all three of those configurations. We'll 5 our ExpressPoll, our electronic poll book 5 6 talk next about our ballot-marking device which 6 check-in system, okay? 7 is the ExpressVote. 7 So at this point, I'm going to go through 8 We call this a universal system, a 8 sort of the voter experience. And I had talked 9 ballot-marking device and ADA device for all of 9 about the DS200. I'm going to go through a 10 the voters. And that's important because what's 10 check-in process. I'm going to go to our 11 unique about the ExpressVote is that it is 11 ballot-marking device and mark a ballot for us, 12 designed as an ADA device. It creates 12 and then I'm going to tabulate, okay? 13 ADA-accessible ballots, but it's also designed 13 So at the ExpressPoll, the check-in process 14 for all voters to use. 14 happens just like it does today. If I'm a voter, 15 So we'll go through a demonstration of this 15 I'm going to come in, I'm going to show my ID. A 16 in just a second, but, again, know that only the 16 poll worker is going to validate that I am a 17 ExpressVote Voting System, every single ballot 17 voter in the state of Georgia, in the county 18 that is created and displayed is an ADA ballot. 18 where I am coming to vote. And they're going to 19 There is audio attached to every single ballot, 19 look me up on the ExpressPoll and they're going 2.0 to validate my information. And then they're and that's very important for voters with 2.0 disabilities who don't want to be called out at 21 21 going to give me something that will activate the 22 the check-in process for having to receive a 22 ballot-marking device so that I can start the 23 special ballot. They don't want to have to go to 23 process of marking my ballot. 24 a different voting unit within the voting 24 So we're going to do that here. We're going to look up a voter. We're going to validate that 25 25 location to vote their ballot. They want to Page 243 Page 244 1 voter, and the poll worker's going to insert into 1 We're going to make selections simply by 2 a printer what we call an ExpressVote 2 touching our choice for each race. Down here on 3 voter-activation card, okay? This started out 3 the bottom of the screen, we do have the zoom blank. Whenever I insert it into the printer, 4 4 option here. We have the high contrast that was 5 5 the information that it printed at the top is mentioned earlier today. We're going to change 6 basically the ballot style that applies to me, 6 the screen from color to straight black and 7 okay? 7 white. And just like today, we go through the 8 8 screen, we make our selections. We cannot So, again, the check-in process is the same q for the voter, instead of receiving what we q overvote in any races, just like we heard 10 received today in the state of Georgia, that 10 earlier. 11 little yellow voter access card, this will 11 And at the end, we'll get to our review 12 replace the yellow voter access card. Same 12 screen. And on the review screen, it shows each 13 information that's on the yellow voter access 13 one of those races and each one of the selections 14 card. Not showing personal information here, no 14 that we made from the choices. And I know it's 15 social security number or blood type or anything 1.5 hard for you to see, but there is a race down 16 else. It's simply the key that unlocks the unit 16 here at the bottom of this letting us know that 17 and pulls up the ballot that is special to me, 17 it needs our attention. And when I notice that I 18 okay? 18

So the voter receives their activator, steps 19 over to the ExpressVote. We're going to insert 2.0 it here. And just like today where we insert our 21 yellow voter access card, this is what's going to 2.2 start our voting process. When we do that, it 23 pulls up our ballot. First race appears on the 24 screen. There are instructions as well. 25 see that okay, this was a race where we could vote for two, but I only voted for one, okay? So

I essentially undervoted in that race. And I

could continue just as before and I could choose

to make only one selection in that race. At any

time I want to go back and change anything on the

review screen, I can do so simply by touching

that race, making an additional selection. And

2.2

23

24

25

waste in this particular scenario.

So I think somebody asked earlier about,

well, I've got a lot of voters, when I go to a

turnout. We're going to pre-print all of these

paper system, I'm going to get a 15 percent

August 30, 2018 Page 245 Page 246 1 when I touch that, it goes back to the review 1 hard copy record of all the selections that we 2 screen and highlights the changes that were made, 2 just made on the ExpressVote on our 3 okay? 3 ballot-marking device, okay? 4 So at this review point, we can continue to 4 Now, at this point, we still haven't cast 5 our ballot. We're still in the review process, 5 make changes as long as we need to, okay? Once 6 we are satisfied we've reviewed all of those 6 okay? If we see something that may be inaccurate 7 selections, we press next. And here's where it's on that record or we feel like there was 8 a little different than it is today in the state 8 information that we didn't see or there was a 9 of Georgia. Typically, we go through and we make mistake made or an undervote we made, because we 10 our selections, we review our selections, and 10 haven't cast our ballot, we can still go through 11 we've reviewed, we're satisfied with what we've 11 a process of creating a paper ballot, okay? 12 done, we usually touch the button that says "cast 12 If we wanted to understand the content or 13 vote -- or "cast ballot," okay? 13 have a selection read back to us by an audio 14 With the ExpressVote, instead of touching 14 ballot, we could simply reinsert this card -- and 15 "cast ballot," we're going to touch "print card," 15 if you don't mind, I'm going to take that back 16 okay? And when we do that, the ExpressVote is 16 from you. We can reinsert this card into the 17 going to take that same activator that we 17 ExpressVote, and when we do, it will take us 18 inserted and it's going to give us a review of 18 right back to that review screen and show us each 19 each one of the races and each one of the 19 one of those races and each one of the selections 2.0 selections that we made. If we did not make a 2.0 that we made, okay? And in addition to seeing it 21 selection in the race that race will still 21 on the screen, we can also listen to it via 22 appear, and there will be an indication on our 22 headphones, okay? 23 written record -- if you want to pass that 23 But, again, if we're satisfied, we've 24 24 around -- that basically says, "No selection reviewed all of our selections, then we're ready 25 25 made, " okay? So at this point, the voter has a to cast our ballot. And when we do so, we step Page 247 Page 248 1 over to the DS200, any orientation, slide it in paper ballots. With this blank card -- piece of 2 there to the top, scanning dial-up, please wait. 2 paper, if you don't use them all on the election, 3 Thank you for voting. Your vote has been 3 you can use them the next election. There's no 4 counted, okay? Δ waste associated with that as well. And we're 5 5 As far as any additional information on the using a full flat piece of paper that's half of a 6 DS200 ExpressVote, ExpressPoll, we'll open it up 6 ballot. There's no rolled up piece of paper or 7 7 to any questions y'all have. paper rolls that have to be changed by poll 8 MR. BEESON: Let me just add something real 8 workers. There's no COTS printers that you have q quick too. Our ExpressVote Universal Voting q to put ink and toner and things like that that 10 Device is running on battery right now. All of 10 poll workers have to deal with. It is a thermal 11 these systems -- both of these have internal 11 printer that's inside the ExpressVote. There's 12 backup batteries so if the power goes out, we can 12 nothing the poll workers have to deal with or 13 continue voting. So there's no additional 13 change. 14 components you have to buy. You're looking a 14 And with that, we'll open it up with 15 system here, there's no UBS or no internal 1.5 questions. REPRESENTATIVE FLEMING: Mac, how much would 16 batteries or anything like that. You have them 16 17 already in the system, so -- and, again, there's 17 it cost the state of Georgia to implement a 18 no printers. The paper we used here is thermal 18 system like this? 19 paper -- it's basically the half of a full-size 19 MR. BEESON: Well, we just responded to the 20 ballot, thermal piece of paper so there's no 2.0 RFI. It was three different options in there,

21

2.2

23

24

25

and the range is somewhere between 20 million on

the low end to right under a hundred million on

REPRESENTATIVE FLEMING: You said Alabama,

the high end, depending on how many units.

South Carolina, what else around us?

Page 250 Page 249 1 MR. BEESON: North Carolina, Arkansas, West 1 your system that you're demonstrating is not the 2 2 Virginia. same as the one that Georgia is using currently, REPRESENTATIVE FLEMING: And do y'all have 3 3 correct? 4 MR. CAMERON: Correct. statewide application in those areas where everybody uses the same machine? DR. LEE: Second question I want to clarify 5 MR. BEESON: That is correct, yes. 6 6 is that when you demonstrated the paper ballot, REPRESENTATIVE FLEMING: Who's been using 7 you scan the ballot, you said it's an error, it's 8 the equipment the longest of those? 8 overvote. The voter can -- just using the MR. BEESON: Most of these customers bought 9 touchscreen to register the correct vote, right? 10 a new system around the same time Georgia did, 10 You do that when you introduce some discrepancy 11 but most of them around 2005 or 2006. They all 11 between the virtual record versus the paper 12 implemented them about the same time. 12 record, so how are you going to deal with this in 13 REPRESENTATIVE FLEMING: Who's the last one 13 the audit process? 14 that implemented? 14 MR. BEESON: Yeah. If I understand your 15 MR. BEESON: We just won the Delaware so --15 question correctly, so what we provide on the 16 MS. ROGERS: Maryland. 16 screen is we notify the voter that it's an 17 MR. BEESON: Okay, Maryland would be the 17 overvoted ballot. In terms of a ballot that's undervoted, if it's blank, it's a mismarked 18 statewide that we just rolled out, yes. 18 ballot. So then the voter has a choice to cast 19 REPRESENTATIVE FLEMING: Okay. As we go 19 around the room here. Dr. Lee? 20 that ballot or to return it and go correct the 2.0 DR. LEE: (inaudible) 21 21 situation. So if it's an overvoted ballot, you 22 REPRESENTATIVE FLEMING: Dr. Lee, turn your 22 will need to spoil that one, get another piece of 23 23 paper and mark it if they didn't intend to mic on. 24 24 DR. LEE: Okay, yeah. Yeah, so couple overvote. 25 25 questions. First one is I want to make sure that DR. LEE: But suppose he chooses to just Page 251 Page 252 1 cast it? Then in the audit process, what would 1 MS. ROGERS: You might be referring to the we do? 2 2 internal audit of systems today, how it logs 3 MR. BEESON: So if that voter wants to cast 3 that. It will show you every action that's an overvoted ballot, they're totally allowed to 4 4 captured. In post-election, we have election do that. That particular contest wouldn't be 5 officials today who will use that audit-log data 5 counted and in all of the other contests the 6 6 to determine how they can improve the election 7 ballot would be. 7 process of a certain poll. They can take that DR. LEE: Thank you. 8 8 data and say we need more voter education in this q MR. CAMERON: In reference to the audit q particular area. A lot of voters overvoted on a 10 there, I mean, I think the important thing to 10 particular ballot. So that capability exists now 11 note also is that post-election when county 11 within our technology. 12 election officials are going through a 12 DR. LEE: Okay. 1.3 post-audit, there will be an audit of any of 13 REPRESENTATIVE FLEMING: Okay. Going around 14 those votes that the voter overvoted. It does 14 the room here. Questions? As I move back to 1.5 provide you an audit of that ballot. It shows 1.5 this side over here? Lynn? 16 you that that voter did actually intend to cast 16 MS. BAILEY: Thank you. So when processing 17 the ballot as it was even though they were given 17 absentee ballots on regular paper, there is a 18 the choice to --18 different type of device or is it the same 19 DR. LEE: (inaudible) 19 device? And what's the scan speed for those REPRESENTATIVE FLEMING: Dr. Lee, turn your 2.0 20 ballots? 21 mic on again. 21 MR. CAMERON: That is a great question. 2.2 DR. LEE: Sorry. I was unclear how you 2.2 Thank you for asking that, Lynn. In response to 23 actually record the action that the voter 23 the RFI, in addition to the DS200 scanner that actually chose to miscast it. So how is that you see here, we also -- and this is something 24 24 2.5 captured? 25 that at a personal level that I'm excited about

know that would be something that Paulding County

Page 253 Page 254 1 for the state of Georgia. Having worked as a 1 counts the hand-marked absentee ballots and 2 county election official in both a small county 2 ExpressVote components for that matter as well at 3 and a large county, I like that we are able to 3 a speed of close to 300 ballots. 4 offer different types of scanners for different 4 Did that answer that question? sizes of counties. We know that, you know, 5 MS. BAILEY: Yeah, thank you. especially in a place like Georgia where you have 6 6 MR. CAMERON: Great. Thank you. 7 all the way from Appling County to Fulton County, REPRESENTATIVE FLEMING: Jeb, I have a very 8 I'm excited that we're able to offer high-speed 8 important question for you. Instead of it coming 9 options from medium- to large-size counties. 9 in red and gray, will it come in red and black? 10 So in response to our bid, we did do the 10 MR. CAMERON: As a UGA graduate, we will 11 DS200 for, you know, the vast majority of the 11 color this however the state wants it. 12 counties in the state that are considered small. 12 REPRESENTATIVE FLEMING: I will be more apt 13 So in this county, for example, Judge McCoy may 13 to color it red and black than I would anything 14 have a couple hundred absentee ballots to count 14 else. 15 at the end of the election. You can use the 15 All right, the judge has a serious question. 16 DS200 in your office to scan those ballots. 16 JUDGE MCCOY: Couple of questions. First of 17 Lynn, you asked the question. In a place 17 all, I'm not clear on the ballot marker, the 18 like Richmond County, in addition to the DS200, 18 receipt. The paper comes back out and the voter 19 we also have our DS450 which is one of our 19 says this isn't right or I want to change that. 2.0 high-speed scanners, and it counts anywhere 2.0 I saw you reinsert it. If that voter makes a 21 between a hundred to two hundred ballots a 21 change, what happens to the paper? MR. CAMERON: That's a great question. 22 minute, okay? 22 23 23 That's a great clarifying question. Whenever I We also have for the Fulton Counties in the 24 world, Cobb Counties, Gwinnett Counties, DeKalb 24 reinsert it to review, know that that is a marked Counties, we have our DS850. And our DS850 25 25 ballot. It's already been printed as a record. Page 255 Page 256 1 So if I were to reinsert a ballot that's already would have to have because we have several 2 been marked into the ExpressVote, I can't make thousand absentees, but does that counter take a 3 any changes at that point. It's simply going to 3 digital image of those ballots --MR. CAMERON: Yes. 4 provide us a review of what has already been Δ MS. HOLDEN: -- for auditing purposes? 5 marked on a ballot. MR. CAMERON: Absolutely. So the DS200, 6 So I do my record and I say no, I think I 6 7 see a mistake. The state would use the same 7 DS450, and the DS850, all, as they are tabulating 8 8 procedures that are in place today. For spoiling and scanning are taking a digital copy, front and 9 a provisional ballot, for example, you would q back, of every ballot that's being scanned. 10 create a spoiled ballot, you would go to the 10 So back at election central, when y'all are 11 ExpressPoll, reissue a card, and that voter can 11 doing post-election audits, you can look within 12 begin their marking over. 12 the election management software itself. Every 13 JUDGE MCCOY: One other question. Are the 13 image of the ballot and a cast-vote record, side 14 votes embedded in a barcode? Is there a -by side, to show you here's the image of the 15 MR. CAMERON: The selections are represented 1.5 ballot, and then here is how the software itself 16 on the ballot marked -- any votes that are cast, 16 interpreted that ballot. 17 any ballots marked on the ExpressVote are 17 But most importantly, in addition to the 18 represented by a barcode in addition to the 18 digital image and the cast record, you also have 19 hand-readable text that appears on the ballot as 19 all of the hard copies of the ballots that could 2.0 well. 2.0 be audited postelection. 21 REPRESENTATIVE FLEMING: Okay, any more 21 MS. HOLDEN: Next part of my question is 2.2 questions? Deirdre? 2.2 with this system or any of the other systems that 23 MS. HOLDEN: I want to go off what Lynn was 23 we've seen, is this going to help in the logic and accuracy testing? Is it going to be 24 asking with the high-speed counters because I 24

2.5

simplified more than what we have to do now?

that blue ballot bin, the memory device, the

Page 257 Page 258 1 Because, you know, it could take -- in Fulton 1 go through an opening process on 30 units and 2 2 County, it would take them weeks. It takes us a part of that opening process is you are printing 3 couple weeks to do that. So will the process of 3 tapes, zero tapes on 30 units, and they are 4 the testing of the machines be simplified with 4 verified that each unit has a zero count at the these new systems? beginning of the day. Throughout the day voters 5 MR. CAMERON: It will. And the important 6 6 are voting on those 30 units. 7 p.m. rolls 7 thing is you're going to continue to test the 7 around, it's time to close down the precinct. 8 most important part of what happens on election 8 Your poll workers now are going to go 9 day which is, of course, the tabulation itself. 9 through the process of closing down 30 units and 10 You will test the ballot-marking devices to 10 they're going to end the election on 30 units. 11 make sure when you talk about things like 11 Then they're going to print three copies of the 12 barcodes, that the barcodes are representing the 12 results tape on the 30 units, and then they're 13 correct selections that are being made in that 13 going to remove the memory device out of 30 units 14 ballot-marking device. 14 and they're going to bring those tapes, those 15 Let me put it in a nutshell and let me talk 15 memory cards back to your office. And then 16 about election day real quick, opening and 16 you're going to go through the process of 17 closing procedures to kind put in a nutshell how 17 uploading 30 cards to get the results for that precinct. 18 this kind of consolidates down based on what we 18 19 do today. 19 Let me tell you in a nutshell how this is a 2.0 2.0 little different, okay? You may have -- let's So today let's say, Ms. Holden, in your 21 21 largest precinct, how many touchscreens do you say, you take that same precinct. You may 22 employ? 22 have -- if you do a one-to-one ballot-marking 23 23 MS. HOLDEN: Thirty. device for the touchscreens that you have today, 24 24 MR. CAMERON: Thirty? Okay. So let's take you'll have 30 touchscreens, ballot-marking 25 25 that precinct. In the morning, your poll workers devices for the precinct. You may have one, you Page 259 Page 260 1 may have two scanners depending on the volume of 1 tapes back to your office. Instead of uploading 2 that precinct, okay? 2 30 memory cards, you're uploading one or two. 3 The opening process for the ballot-marking 3 Does that give you kind of a high-level idea of 4 device, because it does not tabulate, is to Δ what we're talking about when we're simplifying 5 5 simply open the security door and power it off. the process, not just for you but for your poll 6 That's it. There's no printing zero tapes from 6 workers as well? 7 7 MS. HOLDEN: Thank you. here because there is no tabulation that's done 8 8 MR. CAMERON: Sure. here. q So you've consolidated down the opening q REPRESENTATIVE FLEMING: John? 10 process for 30 units to one single or two units 10 MR. MONDS: I have a question about the 11 11 at your precinct. Same goes for the closing digital scanners. Now, you said that possibly in 12 process. 12 the polling precinct you have one or two of 13 To power down the ExpressVote and close out 13 those. And in your demonstration I believe you 14 the election on the ExpressVote, you simply said that if a voter was unsure that they wanted 15 reopen that security door and you turn it off. 1.5 to change their ballot, that they could do that, 16 That's it. There's no tapes you have to get. 16 and my question would go to would that possibly 17 There's no memory devices that need to come back 17 cause any backups, you know, in a polling place 18 to election central. Instead, here, with the if you have a voter that's standing there taking 18 19 DS200, you open the security door, there are two 19 a long time, you know, making their decisions if 20 buttons for your poll workers. One says power. 20 you only have one or two of those? And is that 21 One says close poll. And when they touch "close 21 your recommendation that there will only be one 2.2 poll," three copies of the results tape are 2.2 or two digital scanners in a polling place? 23 automatically going to generate out of the DS200, 23 MR. CAMERON: Yes. Most precincts across 24 okay? Then they bring, just like Mac showed you, 24 the US have chosen a system that's one scanner in

2.5

a polling place. We have a few in New York

25

And as they breakdown and Hart sets up, we will

be in recess for a moment.

August 30, 2018 Page 261 Page 262 1 City -- I have some locations that use two. 1 and, again, it's just -- you know, some states 2 2 Fairfax, Virginia has 800,000 registered voters. will do a phased-in approach, some states will go 3 They use one in most of their polling places. 3 everyone at the same time. And we would work 4 The digital scan technology in the system is so 4 with you all on what the best plan based on your good, you could scan the ballots -- it's about 5 timelines is, and we've got the team ready and 5 6 two seconds to scan the ballot. 6 available to get it done in the time frame you And then it's really one options for -- or 7 need us to. 8 two options for the voter if they overvoted a 8 Thank you. 9 ballot. If they cast it or return it. So then REPRESENTATIVE FLEMING: All right? All 10 they would move away from the scanner and then go 10 right, Sheila has our last question. 11 back to the check-in. 11 MS. ROSS: Thank you, Mr. Chairman. I'd 12 MR. MONDS: And then my other question is 12 just like to piggyback on one of John's questions 13 going back to deliverability on the scanner. On 13 which is in the 42 states that you have active 14 the time frame of implementing and changing the 14 and rolled out already, what is the average 15 whole system, what kind of time frame would we be 15 voting time for the voter? 16 looking at? 16 MR. BEESON: We've done some studies on --17 MR. CAMERON: Well -- and we have a lot of 17 especially we have a lot of experience with 18 experience rolling these out statewide, and, you 18 customers moving from DREs to this type of 19 know, different -- often we're given shorter time 19 system. And if we're talking usually going from 2.0 a DRE to ballot-marking, we're seeing the times frames than everyone would like, sometimes we 2.0 21 have more time. I would say with us being the 21 all very similar to the time it takes to load it 22 largest US manufacturer, we've got a great supply 22 on a DRE as the time it takes to load it on a 23 chain. We're preparing for a really large number 23 ballot-marking device. So very similar to what 24 of jurisdictions to buy new equipment next year, 24 you're used to today. 25 25 and we're planning now for something like that, MS. ROSS: Did you actually do studies on Page 263 Page 264 1 that or is it just ... (Pause) 2 MS. ROGERS: First I want to say I have 2 REPRESENTATIVE FLEMING: All right. If 3 tried to study that but it becomes difficult 3 everybody will come on back and find their place, because ballot size is different all across the we will begin with Hart InterCivic. 4 4 5 country. Georgia's done a pretty good job of I'm going to turn it over to you. Please trying to reduce amendments and summary language 6 6 introduce yourself. Good to have you today. 7 on their ballots. Not everyone is that good. 7 MR. BROXTON: Thank you, Mr. Chairman. My 8 8 name is Dwayne Broxton with Hart InterCivic. We just recently had an election in another q state where there were, like, hundreds and q It's good to be here today. I've worked with 10 hundreds of ballot decisions because of some 10 Hart beginning of this year, prior to that I 11 precinct committee races. So it does depend on 11 worked with the state of Georgia (indiscernible) 12 the ballot length as to how long it actually 12 election night reporting system. 13 takes a voter to cast a ballot. 13 So today, we're going to take some time and 14 But Mac's right, if the ballot size is 14 talk about who we are as a company. I think that 15 similar to today, then you wouldn't really see 1.5 Hart may be new for some of you. And we're also 16 any degradation in time. going to talk about the Verity Voting Platform. 17 But I apologize. It is a hard question to 17 And we're going to talk about the paper ballot 18 quantify because of ballot complexity across the 18 and also we'll walk you through a quick 19 states. 19 demonstration of our software. 20 REPRESENTATIVE FLEMING: Gentlemen, Mac, 2.0 Unfortunately, Sean Phillips had to go back 21 Kathy, thank you for a very good presentation. 21 to Texas because of a family emergency this 2.2 Appreciate your being here today. Thank you. 2.2 morning. Again, my name is Dwayne Broxton. I'm 23 Our next presenter will be Hart InterCivic. 23 the regional sales manager.

24

25

So for those of you who have not heard of

Hart, we have been in business since 1912,

21

2.2

23

24

25

superior to the vendor that they left.

So we talk about how we do that.

Communicate, we'd like to help. Our VP of

with current clients, talking about what are

operations spends about half of his year meeting

their issues, what are they going through, what

August 30, 2018 Page 265 Page 266 1 printing ballots. I don't think there's anyone 1 Statewide implementation experience: 2 2 Oklahoma and Hawaii. So let's talk a little bit else that we've seen today that can say that they 3 have been around in the elections for that period 3 about both of these states and why I think it's 4 of time. Δ important for Georgia here today. The state of 5 Hawaii, which we handled their elections, does 5 And as you notice as you look at the 6 timeline, throughout all of that, we introduced 6 everything except hire their election workers. 7 the first DRE in 2000. We were the first digital 7 From soup to nuts, we run the elections for the 8 ballot in 2002. In 2011 -- and why I point that 8 state of Hawaii. 9 out is because it's pretty important. We were Oklahoma's a little bit different. For 10 the first company to actually have a survey. And 10 Oklahoma, we support them as they need. They 11 we're going about what we got from the survey and 11 have regions similar to your regions that you 12 why it was important. 12 have here. I think they have 11 as opposed to 13 2015, we came up with the Verity Voting 13 you have 13. We train their technicians to be 14 Platform for our customers. So you'll notice 14 able to actually do some of the repairs to their 15 that we've got a footprint all over the United 15 equipment. We don't -- and we'll talk about 16 States, and that's important. And Georgia is 16 maintenance as we get into the presentation. 17 looking to pick their next voting hardware 17 Why this is also very important, both of 18 vendor. You definitely want to pick someone that 18 these two states are top-down states and they're 19 has experience. 19 paper states. So we have the experience with 20 From Hawaii to Virginia and a lot of states 2.0 states that are top-down and use paper ballots. 21 21 in between, you'll notice that we're in those Again, proven experience: Our largest county, 22 states. We have over 800 jurisdictions served 22 Harris County, Houston, Texas, 2.3 million 23 and Texas is where we're headquartered, in 23 voters. Our smallest county, Kenedy County, 24 Austin, Texas. We also manufacture our equipment 24 Texas has 208 registered voters. 25 25 in Austin, Texas as well. So I say this essentially, the make up of Page 267 Page 268 1 counties, large counties, small counties, and 1 are their challenges. We've taken that feedback 2 everywhere in between, we services those 2 and put it into action. 3 counties. 3 The Verity Voting Platform which is why I'm 4 So just to let you know, our VP of 4 here today. So every vendor that's been here in 5 5 operations is not actually Pete Lichtenheld, it's front of you, at some point in time had a 6 Dr. Phil. And why I put that out there, it's 6 decision to make around 2011, 2012. Ten years 7 pretty important because, you know, working with 7 after Harvey, we had the experience of running 8 states and counties, Dr. Phil talks about 8 the elections -- I'm sorry, I said Harvey. I q communication and that's very important and we're q live in Houston. It's on my mind. Ten years 10 going to get into why that's important. So our 10 after HAVA, we realized that we got a lot of 11 customers rate us 95 percent of overall customer 11 feedback and HAVA was a great starting point. 12 service. The biggest number there is a hundred 12 But in that ten years, from talking to our 13 13 clients, we learned a tremendous amount about percent. 14 So there are roughly 4,000 jurisdictions 14 elections and how we can process better. So 15 nationwide. Out of those 4,000 jurisdictions, 1.5 instead of bolting onto existing technology, we 16 you know, as you can imagine, in the industry 16 took a blank sheet of paper and we decided to 17 some people move from one vendor to the next. 17 come up with the Verity platform. Easy, modern, 18 Those counties or jurisdictions that have chosen 18 trusted. 19 to moving to Hart have rated our services far 19 So, again, we took that blank sheet of

2.0

21

2.2

23

24

2.5

paper -- there we go, a blank sheet of paper, and

we took feedback from our clients, came up with

easy. As we walk through a demonstration, we're

going to talk about the user interface. They're

the Verity platform, and here's what makes it

all similar, they're all the same.

print out ballots in the precinct on demand.

Page 270 Page 269 1 So once you train the election worker on 1 biggest number there, 6.4 million people have 2 2 this piece of equipment, they're going to voted on the Verity platform. And, again, that 3 3 understand how to operate this piece of equipment is a new platform, first implemented in 2016. So 4 4 in that short period of time, we've been able to as well as the scanner. The compact design, as you'll notice, our 5 gather 6.4 million registered voters. 5 6 ballot box on top here (indicating) at the very 6 Common platform for adaptability. If 7 end. It's an ADA-accessible height. It's a 7 there's one thing I want you to take away from 8 collapsible ballot box, 17 pounds, breaks down to 8 this platform, it's common platform adaptability, 9 about 6 inches. what that means to Georgia. 10 You'll also notice the hardware. All of the 10 I've talked to many people in this room and 11 pieces that you see in front of you come in a 11 I know that Georgia financially is in a very good 12 suitcase with the tablets protected inside of the 12 position. You don't have to go out and buy the 13 suitcase. You've got three different pieces in 13 cheapest voting system just because it's the 14 front of you. This is called the Verify 14 cheapest voting system. You've done a very good 15 controller. This is a full-working device. It 15 job and right now, 2018, you can afford to go out 16 allows the election worker to manage the polling 16 and maybe spend that a hundred million dollars, a 17 place from your desk, from your setup. 17 hundred fifty, hundred seventy, whatever the 18 This is the Verity Touch Duo. This is a 18 price tag may be once you decide. 19 ballot-marking device. This allows you to keep 19 Where are you ten years from now? the DRE experience and add a paper trail. 20 Purportedly in 2019, 2020, your counties, some of 2.0 21 21 And this of course, the last piece, is the your smaller counties have to go out and purchase 22 scanner. And we're going to get into all of 22 equipment, okay? And even if that pendulum 23 these a little bit more later. 23 swings from where it is is right now where 24 24 So Verity by the numbers: We're in 11 everyone's talking paper, we can go back to DREs 25 25 in ten or fifteen years. This platform will states, 92 jurisdictions, 4,100 precincts. The Page 271 Page 272 1 allow you to convert this scanner into a DRE. 1 That's exactly what it sounds. And when the 2 Let me say that again and why that's 2 voter is checked in, you're able to look up their 3 important. Right now, we offer an initial 3 ballot style and print their particular ballot 4 investment, you're going to try your best to make 4 there in the precinct, eliminating the waste of 5 5 preprinted ballots. They take that ballot and sure every county, every jurisdiction has the 6 equipment that they need, the proper 6 then put it directly into a scanner. 7 7 configuration. But sometimes populations change, Now, the option that you see in front of you 8 voters move from one county to the next. You 8 today is what's considered in the industry a 9 can't predict in 15 years down the road where 9 hybrid concept. Again, taking a ballot-marking 10 you're going to be. 10 device, adding a piece of paper to it, which is 11 11 thermal, after they vote, they will be able to We're the only system that allow you to be 12 able to do that, to convert one piece of hardware 12 actually see. And here's where it's going to be 13 into other as a county needs at a fraction of the 13 a little different. I'm going to walk around so 14 cost of actually going out and purchasing new you all can see this. You'll notice a full-size 15 equipment. 1.5 ballot even though it's a contest and the 16 Let's talk paper. One thing that Hart is 16 candidates on the paper. You'll also see that QR 17 not going to tell the state of Georgia to do is 17 code in the corner. 18 exactly how you should spend your money. We're 18 Let's talk about all of it. We read the 19 going to give you options. We support an entire 19 contest in character off the paper. In this 20 voting platform, all forms of paper, whether 20 code, there is nothing that ties the contest or 21 we're talking preprinted ballots, which is 21 the candidate or the voter inside that code. 2.2 essentially preprinting the ballots, and a 2.2 This code strictly allows this piece of paper, 23 scanner in a precinct along with an accessibility 23 the ballot, to be put into the scanner. There's 24 device. There's also the option to actually 24 nothing in here that, again, reveals the voter,

25

the contest, or the candidate in that barcode.

2.0

q

2.2

Page 273

So this is a bad picture of a screwdriver, I apologize, but this is to talk a little about our maintenance plan. We don't lock you into a maintenance plan. All you need is a Phillips-head screwdriver to change the battery in the bag.

So there are two batteries. There's a bot-spot battery which powers the tablet itself

So there are two batteries. There's a hot-spot battery which powers the tablet itself, and also there's a battery for the motherboard. Now, having talked to people in Georgia, I understand that some counties have different resources. I think what we would do is work with the state of Georgia in 13 different regions to be able to actually train roaming technicians throughout the state of Georgia, closest to the models we have on loan.

Now, if the state of Georgia wants to spend the money for a maintenance contract, we'll do that, but I think the more responsible way fiscally is to actually train you all to be able to handle some of the light repairs. We can always send major repairs back to Hart.

We're going to talk a little bit about security. We call it defense in depth. If you think about back in medieval times in a castle,

you had different levels of security. You had an open field, you can see any intruder coming from miles around. You have a moat and you also have the drawbridge and the wall.

Page 274

So the first thing in security is the physical access. Key locks, you'll notice on all of our hardware we have key locks, sometimes on a handle, tamper evidence seals. So inside here -- you can't see it from where you are, I apologize -- we have what's called -- like everyone else, we have a removable flash drive. That's where the media and the vote's going to be stored. On actually, this piece that we see today, it's under a lock. It can also be a tamper evidence seal.

We also have what's port obfuscation. Now, what that means essentially is this. Our cable is not the standard wiring for our cables. As the data is transmitted from one piece of hardware to the next, it's actually so the wires are scrambled. So no one will be able to come and take it. The cable bought at Walmart, Radio Shack and that's just taken into the back assuming you'll be able to get information off of it.

Page 275

2.0

q

1.5

2.2

One of the most important parts of this is actually people and procedures. All of your election administrators will tell you this. Hiring the right people, coming up with the right procedures. You're going to go from right now using DREs and paper. That's going to be a lot different than what most people in most elections have experience. So it's going to be important that Georgia sits down with a partner that has the experience and can bring best practice to the state on the people and procedures you need to have in place.

So we'll go through these very quickly. Threat modeling, walled-off security protocols, attack service reduction. This essentially is a custom Windows 7. It's industrial-strength Windows 7, not typical to what you would go on your computer at Best Buy and purchase. It's industrial strength, industrial grade. We basically only use the components of Windows that we need for our operating system.

When you start, this starts the kiosk system mode, you do not have the ability to have solitaire or any other applications you would like to.

Page 276

Whitelisting. So essentially what we do, we don't blacklist. For those of you that are unfamiliar with the term, blacklist is essentially knowing what threats are out there and making sure that those threats can't get into the door. Well, as soon as you actually publish that, those are old threats.

So what we do, our system only allows you to use what's actually coded for it to use. You can't actually load anything onto these systems, again.

Secured boot. Again, they boot up. They boot in the kiosk mode. When they boot up, they're actually able to tell if they've been tampered with. One of the things that's out there — and we'll talk about the hacking of election equipment. I think we all understand at this point that the system is air-gapped. There's actually no way to actually hack on to any of our equipment — probably most of the vendors will say the same — from the Internet. They just don't have the hardware, the internal hardware, to get online.

Well, also with the secure boot, if someone tried to actually sit down at the system and get

2.2

23

24

25

insert.

access code and a piece of paper.

Punch in your access code. Go ahead and

So you'll see here that the voter has

correctly inserted the piece of paper that's

August 30, 2018 Page 277 Page 278 1 into the system, it would basically shut down the 1 them, if it is, quote/unquote, hacked, as soon as 2 hardware. 2 you take that to the central count or the 3 3 Two-factor authentication. Something you workstation, you'll know right away that that 4 was -- that somehow that flash drive became have versus something you know. There's a 4 5 security key and a password key, exportable hash 5 corrupted. You will simply go back to the 6 files, and we'll get into the role-based access 6 scanner, download the results again, and take it 7 and control. So it's based on permission levels 7 to your central count. 8 at the county level and the state level and 8 Now (indiscernible) encryption standards, 9 credentials. You basically can control who has 9 data in motion, again, human readable, tamper 10 access to what -- that's essentially what we're 10 evidence seals, I think we've got over that. 11 saying -- at state level, even into the counties 11 Let's talk about the ballots again. I think 12 you have the ability to lock out people. 12 I mentioned this earlier. Again, that QR code, 13 And also this: You can see who has accessed 13 nothing ties the voter to this piece of paper. 14 the data, just as important. If someone goes in 14 You can't see the contest, you cannot see the 15 with their password, you can know what functions 15 candidates. Let's vote. 16 they performed. Password management, again, will 16 Bethany, if you would come up. 17 give you best practices on password management, 17 So, again, I'll walk through it quickly. 18 system log-in auditing. 18 The hardware you have in front of you, this is 19 Permission levels, we've gone through that. 19 what we call the Verity controller. Again, this 2.0 Human readable data, this is important. Our 2.0 allows the election worker to actually manage the 21 21 keys, our flash drives are basically encrypted. precinct. I have it facing you right now, but in 22 But if you stick that in, you've gotten access to 22 the precinct -- in the polling location, it would 23 it, you will actually be able to read the votes. 23 turn around, facing the election worker. This is 24 What you will not be able to do is change them. 24 a ballot-marking device and again that is the 25 25 If you do somehow figure out a way to change precinct scanner. Page 280 Page 279 1 So right now, you'll notice -- this may be a 1 creating a check mark, let's her know that it was 2 little difficult for you to see -- these two 2 accepted. 3 pieces communicate right now to send the data. 3 Go ahead and vote. Yeah. 4 The reader is not -- so this piece of paper in Δ So you can't see the screens from where you 5 here -- the voter has already voted. This is 5 are but as she's voting, on the left-hand side of 6 going to happen when you move to paper. Because 6 the screen, it gives the voters instructions to 7 of the DRE experience they experience now, it's 7 every single screen. So the voter always knows probable the voter's going to walk away and leave 8 8 exactly what to do. If they have any questions, 9 their ballot sitting right here. q they will see it on the left-hand side of the screen. All of our screens, again, you can 10 Now, what you'll see, after a couple of 10 11 seconds, it will let an election worker know, 11 adjust the contrast and the font size. 12 okay, that this voting terminal is not ready to 12 For contests that have more than two 13 be used. 13 choices, not until you mark both choices will it 14 So, Bethany, if you want to vote. 14 actually appear green. So once she's actually 15 What she's doing is actually creating a 1.5 gone over her choices, she has the option to 16 voter access code. That's a voter access code 16 print. It's going to ask her twice if she 17 (indicating). That essentially makes sure that 17 actually wants to print the record. 18 when a voter goes to the ballot-marking device, 18 This is her ballot, the same ballot I showed 19 they vote the right ballot style. The election 19 you earlier. And she'll walk over to the 20 worker is going to hand the voter that voter 20 scanner, place her ballot on the scanner, she's

21

2.2

23

24

25

voted. And similar to the other systems you've

seen here today, if we were talking hand-marked

The error screen says that you cannot scan $\ensuremath{\text{--}}$ it

Okay, perfect. So there's an error screen.

paper ballots ...

Page 281 Page 282 1 let's the voter know right away what's going on. REPRESENTATIVE FLEMING: Okay. 1 2 2 MR. BROXTON: They may do what I did, it's There's a paper jam. Contact your poll worker. 3 REPRESENTATIVE FLEMING: She forgot to vote 3 quite possible, probable even. Once it locks 4 for me. That's what the problem is. 4 into place, it lines up. REPRESENTATIVE FLEMING: Dwayne, how much 5 MR. BROXTON: Could be exactly what it was. 5 6 REPRESENTATIVE FLEMING: Yeah, that's it. 6 would it cost the state of Georgia, in y'all's MR. BROXTON: Unfortunately, that's a estimate, to implement this all across a hundred 8 problem for the scanner. That was a poll-worker 8 and fifty counties? Any guestimates there? 9 issue by the way. It could happen. It's MR. BROXTON: Absolutely. So if we're 10 probably exactly like that. The scanner wasn't 10 talking pure paper, you're talking roughly around 11 placed on top of the ballot box. That never 11 \$40 million for a pure paper-based system. If 12 happens, right? 12 you're talking a hybrid, similar to what you've 13 Lynn, that never happens? Probably not. 13 heard, around a hundred-million dollars. And 14 And she's voted. 14 printing the ballots at the poll location, 15 Any questions? 15 somewhere in between. 16 REPRESENTATIVE FLEMING: So in that case, 16 What we would need, as probably every other 17 the machine, the scanner knew it wasn't in the 17 vendor here, was the correct configuration of not right place? 18 18 just precincts but polling locations. And Fulton 19 MR. BROXTON: Correct. So the ballot box --19 County precincts, the polling locations may be REPRESENTATIVE FLEMING: Ah, it lines up. different than some of your smaller counties 2.0 2.0 MR. BROXTON: It lines up. There's a 21 21 here. Your metro counties may have combined 22 locking mechanism right here that locks into 22 super precincts at a polling location, and in 23 place. So an election worker sets up. It's as 23 those places you may absolutely think about a 24 simple as pulling this white cord to lock it into second scanner, whether it's preprinted ballots 24 25 25 place. or a hybrid system. Page 283 Page 284 1 REPRESENTATIVE FLEMING: Dwayne, you've -- I if you go back to a DRE and you no longer need a 2 think you began to touch on this. It's something 2 scanner or if you decide to go another version of 3 that's been brought up today. I think Dr. Lee 3 paper just -- if you decide to go to preprinted 4 mentioned it a time or two, but what about the Δ ballots and you wouldn't need either one of 5 5 flexibility of the system as we move forward into these, you can convert those to scanners. Complete flexibility across the platform. 6 the future. You know, as Georgia has different 6 7 needs or the industry demands change, how about 7 Fiscally, ten years from now, you also don't 8 that? 8 know where Georgia will be. I think Georgia will q MR. BROXTON: So I'm going to go over this 9 probably be in a pretty good place. I'm sure you 10 again. Thanks for the question. Right now it's 10 all feel the same. What if you're not and you 11 not just Georgia, it's all across the United 11 still have these concerns about your hardware and 12 States. Everyone's going to paper on some form, 12 your platform? 13 whether it's preprinting the ballot, printing the 13 REPRESENTATIVE FLEMING: I'll start over 14 ballot at the poll location, or hybrid. here on this side and work my way around the 15 Ten years ago, no one saw going back to 1.5 table. See if there's any questions. 16 paper or very few people saw going back to paper. 16 Nancy? 17 Where are we going to be ten years from now? No 17 MS. BOREN: The first step that you do --18 one can tell you. I can tell you probably this 18 MR. BROXTON: Yes. 19 with some certainty, as you go back to paper, 19 MS. BOREN: -- does that contain voter data? 20 there will be some people that remember paper 2.0 MR. BROXTON: No. 21 from before, and they may even say: You know 21 MS. BOREN: Okay. Where do you get the 2.2 what? Maybe we want to go back to the DRE. 2.2 voter data for the code to create the ballot? 2.3 23 That -- those calls are going to be out there MR. BROXTON: So what happens, the voter 24 just like the calls for paper right now. What 24 comes in, they check-in at the electronic poll 25 the Verity Voting Platform will allow you to do, 2.5 book, similar to what you've seen earlier. And

Page 285 Page 286 1 we've worked with Tenex, Know.ink, and many of 1 already been said here today -- they have never 2 the poll books that are out there. Once that 2 really voted so they actually cast this into the 3 3 voter gets checked-in, they get their ballot scanner. I think everyone understands that. 4 4 style. You can come over and the election worker So any point along the process, depending on how Georgia wants to do it, you can spoil this 5 can manually input that or they can use a 6 bar-code scanner. Now, we suggest using a 6 ballot and then they would have to base it on 7 bar-code scanner that would print out from your 7 your policies and procedures to get it back in 8 electronic poll book. They scan the barcode, it 8 line to vote Democrat or Republican. 9 prints out -- it's called the access code. The Or even -- again, this is a full ballot with 10 access code is essentially their ballot style. 10 the contest, and they say: You know what? I 11 So if they go to the ballot-marking device, 11 don't want to vote for Beverly Davis any more, 12 they punch in the access code, and I'll use the 12 I've changed my mind. Spoil the ballot, start 13 old access code. And you can see it turns red 13 all over again, and they will cast their vote. 14 because this code has already been used. So a 14 REPRESENTATIVE FLEMING: John, that will be 15 voter won't be able to come back and use the code 15 Democrat, Republican, or Libertarian, right? Is 16 and try and vote and again. Or even go to 16 that all right? 17 another precinct and try to use this code. 17 MR. MONDS: In my opinion (indiscernible). REPRESENTATIVE FLEMING: I just want to make 18 Does that answer your question, Ms. Boren? 18 sure we got that. 19 MS. BOREN: Yes. And so in a primary if a 19 voter changes their mind and they want to vote 2.0 MS. BOREN: One last question. 2.0 21 21 Democrat instead of Republican or vice versa, REPRESENTATIVE FLEMING: Sure, Nancy. Go 22 they go back to the beginning and get another 22 ahead. 23 code? 23 MS. BOREN: I'm sorry. 24 24 MR. BROXTON: Correct. I'm glad you asked So the first step, will it contain every 25 that question because a voter -- and I think it's 25 ballot style in their county for early voting, Page 287 Page 288 1 and then secondly, can it be programmed for a the contests and the character. You'll see 2 precinct to only contain ballot styles in that 2 barcodes but they're essentially -- they're just 3 precinct? 3 to line the paper with the scanner, make sure $\boldsymbol{MR}.$ $\boldsymbol{BROXTON}\colon$ The first answer is yes. The 4 4 we're reading the correct contest and the marks 5 program only contains ballot styles at a on the paper. 6 particular precinct. 6 The second part of your question was about 7 That's a question I'll honestly have to get 7 this QR code. Again, this only contains the 8 back to you because I don't know the answer to 8 information that you see at the top of the paper 9 that. I think that it can, but I want to give 9 which is the precinct and the date. 10 you the right answer. And I apologize. If Sean 10 DR. LEE: Why do you need that? Why make a 11 were here with me, we would know that right away. 11 difference between the hand-marked versus a 12 But I don't know, I'll have to get back. I will 12 printed-out ballot? Why have the QR code there 13 get an answer to you today. 13 on the side? 14 MS. BOREN: Sure. Thank you. 14 MR. BROXTON: Why is there a QR code on 15 REPRESENTATIVE FLEMING: Going around the 1.5 this? 16 room. Dr. Lee? 16 DR. LEE: Yeah, and not on the hand-marked 17 DR. LEE: Thank you. So can you clarify 17 ballot. 18 which user uses the QR code. In particular if a 18 MR. BROXTON: On the hand-marked ballot we 19 user hand-marked ballot, do I also have QR code 19 still have voting on the hand-marked ballot. 20 and where does that come from? 2.0 It's essentially used to scan to line it up here. 21 MR. BROXTON: Okay. So let's start with the 21 The QR code here is just to really use for the 2.2 hand-marked ballot. If you have a hand-marked 2.2 further precinct information. I think I'm 23 ballot, there is a QR code on all of our ballots. 23 misunderstanding the question. 24 On all of our ballots, we are going to read what 24 DR. LEE: But then if I go to the precinct, 2.5 you see on paper. We're actually going to read 2.5 I use hand-marked ballot, and you said I don't

Page 289 Page 290 1 have a QR code. Why not? Because you said QR 1 In the central count situation -- and we 2 2 don't have the software displayed but you would code is containing the precinct information. So 3 why is it different between hand-marking versus 3 essentially be able to pull up all ballots that they have an issue with. It will be flagged. 4 ballot machine printing? Δ MR. BROXTON: Well, on the hand-marked 5 And let me mention how our central count looks a 5 6 ballot, you do have codes on the side which will 6 little different than what you've mainly heard 7 contain precinct information. Is that -- am I 7 here today. You do not have to presort your 8 answering your question correctly now? So you'll 8 absentee ballots. You're able to just take all 9 still have a version of coding on your of those ballots, put them into central count, 10 hand-marked ballot. Am I ... 10 and they will sort based on their precinct. When 11 DR. LEE: Yeah (inaudible). 11 it comes to adjudication, those ballots are 12 REPRESENTATIVE FLEMING: Cynthia, hold on. 12 flagged, they are put in the separate box where 13 I'm going to go to Lynn and then we'll come back 13 you can actually pull up each individual ballot 14 to you on this side. 14 and basically adjudicate voter intent at that 15 MS. BAILEY: Thank you. So can you address 15 16 how your system in the central count environment 16 REPRESENTATIVE FLEMING: Okay, Cynthia's 17 would adjudicate an overvoted ballot. 17 going to have our last question. MR. BROXTON: Okay, absolutely. So let's 18 18 Cynthia? first start with -- if you're talking hand-marked 19 19 MS. WELCH: Real quickly. I want to confirm ballots, before I get to central count, if you'll 2.0 the steps that a voter will go through when they 2.0 21 21 allow me that, the voter will actually be able to come in to vote. One, they would go to the 22 correct because it will not take overvotes here. 22 e-poll book, and from that step they will go to 23 It will allow them to overvote if they choose to 23 the machine here to get the ballot code. but it will not be counted. And you can force 24 24 MR. BROXTON: Correct. 25 25 MS. WELCH: And from the ballot code, they the undervote. Page 291 Page 292 1 would go to the ballot marker and from that 1 incorrect ballot style, how do you prevent that 2 point, they go to the tabulator? 2 between the three stations? MR. BROXTON: So let's make sure I 3 MR. BROXTON: Yeah. So you can actually --3 understand your question. If they punch in the 4 depending on how you feel works best for your 4 5 5 efficiency, you can actually have the person wrong code? 6 that's checking them in also operating the 6 MS. WELCH: Right. The wrong ballot and 7 election management poll book, this device, as 7 access code here, based on the paper that they 8 well. 8 received, it's the incorrect ballot style -q So it can be separated out or it can be 9 MR. BROXTON: Okay, so --10 right -- we have counties that actually have this 10 MS. WELCH: -- how could that be corrected 11 one election worker checking in the voter and 11 before vou --12 also administering the access code. Now, once 12 MR. BROXTON: Couple different --13 that voter gets the access code, they would then 13 MS. WELCH: -- let the voter know? 14 move to a ballot-marking device. However, your MR. BROXTON: Couple different things. So 15 precinct will have total (indiscernible) figure, 1.5 this code is only good at the polling location. they will be there after they've voted and go to 16 16 If they put in a wrong code that was not issued 17 the scanner. 17 by this, they would not be able to vote here. 18 MS. WELCH: Okay, so here where they get the 18 MS. WELCH: Okay. 19 access code, and the voter comes over to the unit 19 MR. BROXTON: But let's take the second half 20 to do the balloting --2.0 of your question because I think there was a 21 MR. BROXTON: Ballot-marking device? Yes. 21 question there that how are we able to catch if 2.2 MS. WELCH: Right. Explain to us if someone 2.2 there's something wrong on the ballot. They 23 put in the wrong code. If you don't use the 23 actually have a paper ballot, before they scan 24 scanner and we punch the number in there and we 24 it. And I think another question I heard earlier 25 put in the wrong number and give the voter the 2.5 in the day was wait times, what we've seen when

Page 293 Page 294 1 people actually use either a preprinted ballot or 1 provide the electronic poll book. That would be 2 a ballot printed at the polling location. 2 another company that would have to partner with 3 3 Generally speaking there's not a big issue with VO11. 4 waiting at the scanner because they actually have 4 MR. BROXTON: Correct. And we've been a paper ballot in their hand. They've got 5 partnering with a company called KNOW.ink which I 5 6 something they're actually physically holding. 6 think some of you are familiar with. Tenex, 7 They're reviewing the contests and the we've been partnering with them all over the 8 candidates. 8 United States. Does that answer your question? Thank you. REPRESENTATIVE FLEMING: You were left 10 MS. WELCH: Yeah. 10 11 JUDGE MCCOY: Mr. Chairman, one quick 11 short-handed today, you did a great job. We 12 12 appreciate it, thank you. question. 13 REPRESENTATIVE FLEMING: Yes, Judge. 13 MR. BROXTON: Thank you, sir. 14 JUDGE MCCOY: So you totally rely on the 14 REPRESENTATIVE FLEMING: All right. 15 poll worker to manually enter a code in there to 1.5 And our last presentation will begin 16 get the right ballot style. 16 momentarily. We'll standing in recess with 17 MR. BROXTON: No, sir. I'm glad you asked 17 Dominion Voting making a presentation for us. (Pause) 18 again. We actually have a scanner. So this 18 19 scanner, which you just heard, this actually 19 REPRESENTATIVE FLEMING: All right. If 2.0 eliminates the human error of the poll worker. 20 everyone would make their way back to their seat, 21 21 When they get that access code or that QR code it is the presentation we've been waiting for all 22 from the electronic poll book, they scan it and 22 day, the last one. 23 that pulls up their ballot style, and that will 23 We appreciate you being here and I'm going 24 actually print the access code. 24 to turn it over to you and we'd love to hear from 25 JUDGE MCCOY: But your company does not 25 vou. Welcome. Page 296 Page 295 1 MR. HORACE: Good afternoon, Chairman, and through IT management. 2 good afternoon, Commission. My name is Matt 2 Finally, Mitch Kedrell, his title is system 3 Horace. I'm the chief security officer for 3 support specialist and he has vast experience since 2003 and he is a resident of Gwinnett 4 Dominion Voting Systems, and in that role I'm 4 5 responsible for Dominion's enterprise-wide 5 County, Georgia. I introduce to you Dominion Voting Systems. 6 security, cyber security, and physical security, 6 7 information technology, and all things security. 7 DR. COOPER: Thanks, Matt. 8 As you know, Dominion is US owned and we're 8 And it's so great to see in the room the q very experienced in executing statewide q commission and the members of the public, our 10 implementations. We most recently received the 10 fellow vendors. I know it's been a long day, so 11 support of the state of Louisiana, our latest 11 let's get on with it. 12 acquisition, and it is my honor today to 12 As Matt said, I'm Eric Cooper, I'm the 13 introduce to you to our team of professionals. 13 director of product strategy for Dominion Voting 14 First, Dr. Eric Cooper, he is our director 14 Systems. And what we have back here is every 15 of product strategy. He has worked in elections 1.5 piece of equipment that's necessary to run an for over 13 years, including software and election. I would say it's an election in a box, 16 17 hardware development as well as on-site election 17 but we have a couple of boxes. 18 support, including the creation and management of Just to give you a brief overview, I'm going 18 19 election projects and election-day activities. 19 to run through our product offering, a little bit 2.0 Mr. Scott Tucker, customer relations 2.0 about the company, and then we'll get into the 21 manager, he's been in the elections industry for 21 hands-on demonstration. 2.2 seven years. He's held positions as regional 2.2 So about us, Dominion Voting was founded in 23 manager, national trainer, and now as customer 2.3 2003. We're an experienced, dedicated, team of professionals. We're more than just a vendor, 24 relations manager. He has an IT background for 24 25 15 years in various roles from customer help desk 2.5 we're an elections partner. We have six offices

24

25

are being stored and verified on a paper audit

Next. We also have our central count

trail by the voter.

Page 297 Page 298 1 throughout North America, including over 250 1 engineering requirements and at the end of the 2 2 employees, 1,200-plus individual customers, and day, the equipment that you see out here on the 3 3 table. over a hundred thousand units in the field. 4 This is our US footprint. It changes pretty Δ Democracy Suite: This is our core sweep of 5 rapidly but I believe we're currently in about 35 5 products. It drives the entire election process. 6 different states. Statewide implementations in 6 Everything from building a ballot, voting and Louisiana, Nevada all but one county, New Mexico, 7 tabulating the ballots, reporting results, and 8 Colorado all but four counties, and Alaska. auditing results. It's simple. It's simple, The key thing there is Louisiana. They have it's flexible, it's efficient. The same system 10 a very similar model to Georgia and whereby the 10 that you see here, we feel those jurisdictions 11 state election authority actually programs all of 11 that have, you know, maybe one or two thousand 12 the different parishes centrally, programs all of 12 voters over jurisdictions that have several 13 the tabulators and then delivers that 13 million registered voters, same platform, same 14 election-day equipment after going through 14 hardware, same software. 15 last-minute accuracy testing to the individual 15 Core advantages: It is a single election 16 parishes. So it's a very similar model to what 16 database. If you're looking at statewide for 17 Georgia does. 17 multiple counties, we start with a single 18 My key role as director of product strategy, 18 template database that has most of the 19 I have an engineering background. I was 19 jurisdictional information and then we can spawn 2.0 previously the vice president of engineering for 2.0 individual projects for each individual county, 21 Squillion Systems. I've migrated into a role 21 but all of that data resides in a single 22 that's more customer focused. So my job is to 22 database, all right? It's a powerful, flexible 23 meet with our customers, look at the market, look 23 ballot, laid out design engine. It can handle a 24 at what's on the horizon as far as products and 24 variety of ballot types and slate types, 25 services and then turn that back into actual 25 referenda, various styling elements for both Page 299 Page 300 1 paper and our touchscreen interfaces. And it's 1 offering and that's this Canon G1130. Again we 2 an easy tabulating program. So we can define 2 started to consolidate our focus on commercially 3 multiple tabulators. Those for early voting have 3 off-the-shelf available components. We do have 4 all of the precincts available, all of the ballot 4 two proprietary scanning devices, but the rest of 5 5 styles. We can also filter those down into the equipment is off-the-shelf, including the individual precincts with just those ballot tablets, including the VVPAT, voter verified 6 6 7 styles or a combination thereof if you have 7 paper audit trail printer, and the BMD printer is 8 polling locations that have multiple precincts as 8 an HP as well. q well. q And then finally we do have a digital 10 So in person, this is the core of our 10 education system as well, and this a way of 11 in-person voting solution. It includes the 11 adjudicating not just voter intent issues for 12 ImageCast X, which is the touchscreen interface. 12 vote-by-mail ballots or absentee ballots but also 13 We call it the ImageCast X because the X is 13 write-ins and any cast in precincts or any 14 configurable. On either end of the table, this 14 combination thereof. 15 is the ImageCast X in a ballot-marking device 1.5 Finally, we do have a remote accessible configuration. And on the other end is the 16 16 vote-by-mail product also used for UOCAVA voters, 17 ImageCast X in a DRE with a voter-verified paper 17 and this is an online presentation that's secure, 18 audit trail configuration. 18 has full accessibility features, and prints at 19 But again, it's the same voter interface, 19 home a ballot that can be mailed, faxed, or 2.0 same programming, it's just whether you're 2.0 e-mailed back into the central jurisdiction and 21 getting the ballot that needs to be scanned in 21 scanned on our equipment as well. 2.2 our ImageCast precinct scanner or if the results 2.2 And we do have a very robust results

2.3

24

25

tallying reporting module. This is for all of

statement of casts reported for campusing as well

your election night reports but also your

3

4

5

7

8

9

10

11

12

13

14

15

16

17

18

19

2.0

21

22

23

24

25

1

2

3

4

5

6

7

8

q

10

11

12

13

14

15

16

17

18

19

20

21

2.2

23

24

25

Page 301 as any extracts that may be used for a web-based 2 recording, whether it's at the county or state level as well. And then our final module is we do offer a ballot augmenting solution for printing ballots 6 at your precinct or in a central office. And like most of our equipment, it's very scalable.

So if you have a small jurisdiction that's not

printer that's around \$300 all the way to a very

printing any of their own ballots, we have a

large, robust, high-volume printer that's a

little more expensive. Some of our core technologies -- so all of our scanning solutions implement what's called a dual threshold. So when you are actually marking a hand-marked ballot, here (indicating), voters may not have, especially absentee, used the right kind of pen or filled the ovals in completely and legacy systems, there was a well-identified issue where it was a single level, anything below that was not a vote, anything above that was a vote, and the problem was is that when you would write on that margin, multiple scans of the same ballot

could actually lead to different results. By implementing the dual threshold, we have a lower ballot, anything below that lower ballot is not a vote. We have an upper ballot, anything above that is a vote. In between is what we call an ambiguous mark. So we're saying that we're not going to determine outright whether that's a vote or not. In the precinct if you have a hand-marked ballot, the voter is presented an opportunity to clarify the voter intent, and for an absentee voter, that kind of vote will go through our adjudication system for voter intent.

Page 302

Page 304

And then finally we have our AuditMark. again, whether it's the VVPAT, whether it's our in-precinct scanner that's scanning a ballot-marking device ballot or a hand-marked ballot, we're taking a digital image of the front and back of the ballot, but at the end of the image, we're appending a text record of how the scanner interpreted that ballot when it was scanned. So it's a fully traceable and auditable record of how that ballot was handled at scan time. And you'll see that a little bit later when we actually get into the adjudication process.

And then finally we do have a ballot audit-and-review module, and this is, again, sort

Page 303

1

2

3

4

5

6

7

8

10

11

12

13

14

15

16

17

18

19

2.0

21

22

23

24

25

2

3

4 5

6

7

8

9

10

11

12

13

14

1.5

16

17

18

19

20

21

2.2

23

24

25

of outside of our system. It allows members of the public, election officials to actually filter and view subsets or entire elections where the ballot image is and compare those against the past voter records and also the AuditMark.

This system was used in the only statewide risk-limiting audit that's been conducted. That was in Colorado. The first one was done in 2016 and they just did a second statewide in the most recent election.

Security: So we take basically a holistic approach to security. It's multiple levels. It's both software- and hardware-based and also policies and procedures and best practices. And we put that throughout our entire product suite. Things like voter access, poll-worker access, we use two-factor authentication for all of that kind of access. We have robust signed blogs for all of the activity that happens on the machines. And, again, at the end of the day, we have the AuditMark for how that ballot was cast and interpreted and scan done.

We do industry best practices for secure protocol, including code obfuscation, penetration testing, and we are up to the latest 1.1 VVSG

security guidelines.

Cyber security, again, we look at the entire system, and we have developed our security approach looking at all of the threat factors that are out there.

Next.

So we have an ongoing focus. Obviously we have a chief security officer who's overseeing all of this activity. We have an ongoing focus both for our products and also for our company. Security is not just our equipment, it's also the people that work for our company. We're constantly reviewing and enhancing those security models and we are continuing to partner on not just with election administrators but also government DHS, FBI as threats become identified in the election system.

Final aside here, it's kind of a company motto, it's tower of partnership. We're not just a vendor that's going to sell you something and walk away at the end of the day. All of this equipment that you see up here was actually developed in conjunction with our customers.

We have the first iteration of the ImageCast that was done in partnership with Denver County

Page 305 Page 306 1 in Colorado. We then took the base system to 1 a hand-marked ballot, the voter fills in bubbles. 2 2 Michigan and we worked with the customers there Simply goes up to the device, inserts it. If 3 and made customizations, modifications based on 3 there are any additions, if it's an overvote, if 4 the needs. We did the same thing the following 4 it's a blank ballot, the voter will be alerted. year in Nevada for a full implementation. We are 5 The computer is saying that this is a blank 5 6 currently doing that with Louisiana as well. So 6 ballot and at that point I can return the ballot 7 it really is a partnership, we're not just a 7 and make a modification or if I'm happy and I 8 vendor. 8 want to maybe cast a protest ballot, I simply hit 9 That's the end of the fun stuff, so the 9 "cast," and it drops into the box. This device 10 actual voting experience. The first is we will 10 can also be configured for a full ADA review, so 11 start with the ImageCast ballot-marking device. 11 it gives an audio review of the ballots inserted 12 So I'm a poll worker, I've turned on the machine 12 for those voters with disabilities. 13 and before I can do anything with the machine, I 13 We have another precinct-based offering over 14 have to provide a poll worker access card and a 14 here. It's the ImageCast Evolution. It's very 15 secure pin. 15 similar to the ImageCast Precinct, but this is an 16 (Technical difficulties) 16 all-in-one accessible device as well. So if I 17 DR. COOPER: I think I had two different 17 put a blank ballot in this device as an 18 cards with two different versions here. While I 18 accessible voter, I can then use an audio-tactile 19 get the right card, we'll move on here briefly. 19 interface or a touchscreen to actually make my 2.0 So if we were using hand-marked ballots selections. There's an integrated printer that 2.0 21 21 here, the hybrid solution where you have both a will actually mark the ballot, rescan it, provide 22 ballot-marking device and hand-marked ballots in 22 a review to the voter and then cast the ballot. 23 the precinct, you have two different precinct 23 Waiting on the poll worker card. 24 24 Oh, found the right poll worker. Two-factor scanning options. 25 25 The first is the ImageCast Precinct. So for authentication is something you have, the card, Page 307 Page 308 1 something you know which is the pin, so I enter 1 contrast level. So again, this is all voter 2 that. It's not the right one. 2 controlled. If I'm a fully disabled voter, we 3 (Technical difficulties) 3 also do have a handset that's configured over DR. COOPER: All right, so we're going to 4 4 here, and this allows you to interact with the 5 have to move on. 5 device and get audio feedback and use various Let's talk about the voting process. I'm a 6 6 keys to progress through the ballot. We also 7 voter that comes into the precinct. We do not 7 support sip-and-puff and two paddle -- two switch 8 8 paddles as well for navigating the ballot. have our own e-poll book but we do directly q interface with several third-party poll books, q So it's a pretty standard touchscreen 10 including Tenex, Votec, and Know.ink. So they 10 interface that we're all sort of familiar with. 11 can directly program our voter access cards 11 Couple key things: Obviously, this is my 12 through their e-poll book. 12 hardware. So things like screen calibration are 13 So as a voter, I would come in, I would go 13 things of the past. It's much like your phone. 14 up to the check-in station. They would look my 14 You never have to calibrate the screen on your 15 name up in the e-poll book, program the card, and 1.5 phone. You don't have to calibrate these tablets 16 then the voter is sent to the device. Once they 16 either. It's high-resolution and, again, I can 17 put in their card, they're displayed the ballot 17 change the size of the font at any time. 18 that they're eligible to vote on. And again, the 18 To make a selection, I simply choose 19 interface is the same between VVPAT and the BMD 19 anywhere within the candidate area. The nice 20 version of the ICX. 2.0 thing about touchscreen interface is it prevents 21 There are several disability-related items, 21 overvoting. If I want to modify my selection, I 2.2 including if you have multiple languages, the 2.2 simply deselect and modify. And I can move 23 voter can choose their language at will and 2.3 throughout the ballot making my selections, toggle back and forth. I can choose text size 24 24 including brightness, and then I can go to my 25 for low visual acuity, and I can also change the 25 ballot review, and, again, it shows each

Page 309 Page 310 1 selection that I've made. If I skip the contest, 1 results report is automatically printed on the 2 there's clear indication to the voter that no 2 same paper audit trail record. So all of those 3 results are included with the individual records selection has been made. If I want to go back to 3 4 that, I can simply choose that contest. It'll as well. 4 take me back to that and I can make my selection, 5 So we're having a little trouble with our 6 back to review, and the final step is to cast my 6 security. That's the problem with -- when you 7 ballot and it will print the record of my vote in 7 have too much security then you can get in a bad 8 clear text on the voter-verified paper audit 8 spot. 9 trail. Through our system, we have the ability to 10 The voter has the opportunity to verify 10 have individual keys for each device. We can 11 those results and to modify them at this point if 11 have consolidated keys at a given precinct 12 they want to. If they're happy with that, they 12 location, or we can have a unified key. So you 13 simply print the next page. And, again, I'm in 13 can have access to all of the devices with a 14 the larger font here so the font size on the 14 single poll worker card. 15 voter-verified paper audit trail is also larger. 15 Again, the interface -- I'm going to move on 16 And if I'm happy with all of the selections, I 16 just for time. The interface is exactly 17 simply hit "accept," and now that vote has been 17 identical to the one I just displayed but instead 18 cast. 18 of printing the record on a voter-verified paper 19 Again, this is a direct-report electronic 19 audit trail, it prints each ballot on a standard 20 device with a paper audit trail so the results 2.0 eight-and-a-half-by-eleven sheet of paper. This 21 are stored on secured media behind locked and 21 comes out, again, off the off-the-shelf HP 22 sealed doors. At the end of the day, you would 22 printer. The voter can then verify their results 23 take those USB sticks out, bring them down to the 23 here before inputting it into our ImageCast 24 central office for tallying and tabulation. 24 precinct scanner. 25 25 When I close the polls on this device, a And, again, whether it's hand-marked or a Page 311 Page 312 1 ballot-marking device, both can be scanned and tablets. So tablets that are on the crash carts, 2 tabulated in our ICP. so high-impact environments. We have partnered REPRESENTATIVE FLEMING: So let me go ahead 3 3 with them to provide these devices for us. They guarantee a minimum of 10-year life delivery of 4 and start asking a question --Δ DR. COOPER: Sure. 5 the units themselves and then 20 years for parts REPRESENTATIVE FLEMING: -- if I may. 6 6 and any other issues with the tablets themselves. 7 DR. COOPER: Yeah. 7 REPRESENTATIVE FLEMING: So what would be 8 REPRESENTATIVE FLEMING: Something that I 8 the range for the state of Georgia to implement q think you pointed out. So the printer and the q such a system and one of these versions of the 10 tablets, these are -- I think the word you used, 10 system in all hundred and fifty-nine counties? 11 "off the shelf?" 11 DR. COOPER: I'll be able to give a very 12 DR. COOPER: Yes, sir. 12 similar answer that all of the other vendors have 13 REPRESENTATIVE FLEMING: Explain that. So 13 given. I mean, it really depends on the 14 you can just buy printers from different implementation obviously. So to put some bounds 15 locations and ... 1.5 on that, if we look at the RFI that we responded DR. COOPER: Well, for some of the devices to and we stuck with all 27,000 units, you're 16 17 you can. So this is a standard HP printer. So 17 looking somewhere north of a hundred million 18 you can buy it at OfficeMax. If your printers go dollars. 18 19 down at the end of the day and for some reason 19 Based on our experience in other states and 20 you don't have a spare, you literally can go to 20 similar implementations, I don't think that you 21 Office Depot and buy it off the shelf. 21 would need all 27,000 units. If you did a hybrid 2.2 The tablet's -- it is commercially 2.2 approach, obviously the number of units would be 23 available. It's with a company called Avalue. 23 less, so you're looking at a number around somewhere between 40 and 50 million. 24 We do not manufacture the devices, they do. They 24 REPRESENTATIVE FLEMING: All right. Let's 25 have large experience with medical device 25

	Page 313		Page 314
1	go around the table. At this point, I'll start	1	DR. COOPER: How do you?
2	over here.	2	DR. LEE: How readable is that paper?
3	DR. COOPER: And as you are asking	3	DR. COOPER: It conforms to the latest VVSG
4	questions, I'm going to just	4	quidelines for as far as minimum and maximum
5	REPRESENTATIVE FLEMING: Please.	5	print size.
6	DR. COOPER: bring up one more thing.	6	REPRESENTATIVE FLEMING: And as we come on
7	REPRESENTATIVE FLEMING: Absolutely, as we	7	around the table, yes, Cynthia?
8	move our way into our questions.	8	MS. WELCH: So on the unit here, has the
9	Dr. Lee?	9	voter cast their ballot?
10	DR. LEE: Yes.	10	DR. COOPER: Yes. Once they hit that final
11	REPRESENTATIVE FLEMING: Turn your	11	"accept," the vote is actually cast.
12	microphone on.	12	MS. WELCH: So what's the purpose of
13	DR. LEE: To clarify, when you show voting	13	verifying if they can't take it back at that
14	on this machine and you showed us a paper trail,	14	point?
15	but you only show the image. So the voter will	15	DR. COOPER: Because it is still a
16	not be able to verify again his actual physical	16	paper-based system. The official record is
17	paper trail.	17	what's printed on the VVPAT vote and that's what
18	DR. COOPER: Yeah, they can't put their	18	the voter is verifying.
19	hands on it, but they can verify it through the	19	MS. WELCH: Okay, thank you.
20	window and look at the text that's on there, and	20	REPRESENTATIVE FLEMING: All right. Going
21	if they're an accessible voter, the scan of the	21	around. Nancy?
22	text is actually what generates the audio for	22	MS. BOREN: So what can happen on elections
23	review.	23	will happen on elections, right?
24	DR. LEE: Okay. So how readable is that	24	DR. COOPER: Absolutely.
25	paper trail?	25	MS. BOREN: So obviously on that first
	Page 315		Page 316
1	machine, it and you mentioned that there's a	1	the voter even before they start to cast that so
1 2	machine, it and you mentioned that there's a unified card and a card assigned specifically to	1 2	the voter even before they start to cast that so that either they can change the paper roll, or
2	unified card and a card assigned specifically to	2	that either they can change the paper roll, or
2	unified card and a card assigned specifically to that unit	2 3	that either they can change the paper roll, or what we've seen in our implementation in Nevada
2 3 4	unified card and a card assigned specifically to that unit DR. COOPER: There can be, yes, but that's	2 3 4	that either they can change the paper roll, or what we've seen in our implementation in Nevada is that they actually keep a couple of extra
2 3 4 5	unified card and a card assigned specifically to that unit DR. COOPER: There can be, yes, but that's not how it's configured, yes.	2 3 4 5	that either they can change the paper roll, or what we've seen in our implementation in Nevada is that they actually keep a couple of extra complete VVPATs that are, you know, with fresh
2 3 4 5	unified card and a card assigned specifically to that unit DR. COOPER: There can be, yes, but that's not how it's configured, yes. MS. BOREN: Right. It depends on how you do	2 3 4 5 6	that either they can change the paper roll, or what we've seen in our implementation in Nevada is that they actually keep a couple of extra complete VVPATs that are, you know, with fresh tapes in them that are locked and sealed so that
2 3 4 5 6 7	unified card and a card assigned specifically to that unit DR. COOPER: There can be, yes, but that's not how it's configured, yes. MS. BOREN: Right. It depends on how you do it. So you, I'm assuming, as a supervisor, reset	2 3 4 5 6 7	that either they can change the paper roll, or what we've seen in our implementation in Nevada is that they actually keep a couple of extra complete VVPATs that are, you know, with fresh tapes in them that are locked and sealed so that then they can just basically hot-swap those.
2 3 4 5 6 7 8	unified card and a card assigned specifically to that unit DR. COOPER: There can be, yes, but that's not how it's configured, yes. MS. BOREN: Right. It depends on how you do it. So you, I'm assuming, as a supervisor, reset the cards so that you were then able to turn on	2 3 4 5 6 7 8	that either they can change the paper roll, or what we've seen in our implementation in Nevada is that they actually keep a couple of extra complete VVPATs that are, you know, with fresh tapes in them that are locked and sealed so that then they can just basically hot-swap those. MS. BOREN: Thank you.
2 3 4 5 6 7 8	unified card and a card assigned specifically to that unit DR. COOPER: There can be, yes, but that's not how it's configured, yes. MS. BOREN: Right. It depends on how you do it. So you, I'm assuming, as a supervisor, reset the cards so that you were then able to turn on that machine, correct?	2 3 4 5 6 7 8	that either they can change the paper roll, or what we've seen in our implementation in Nevada is that they actually keep a couple of extra complete VVPATs that are, you know, with fresh tapes in them that are locked and sealed so that then they can just basically hot-swap those. MS. BOREN: Thank you. REPRESENTATIVE FLEMING: Going around.
2 3 4 5 6 7 8 9	unified card and a card assigned specifically to that unit DR. COOPER: There can be, yes, but that's not how it's configured, yes. MS. BOREN: Right. It depends on how you do it. So you, I'm assuming, as a supervisor, reset the cards so that you were then able to turn on that machine, correct? DR. COOPER: Correct.	2 3 4 5 6 7 8 9	that either they can change the paper roll, or what we've seen in our implementation in Nevada is that they actually keep a couple of extra complete VVPATs that are, you know, with fresh tapes in them that are locked and sealed so that then they can just basically hot-swap those. MS. BOREN: Thank you. REPRESENTATIVE FLEMING: Going around. Okay, Lynn?
2 3 4 5 6 7 8 9 10	unified card and a card assigned specifically to that unit DR. COOPER: There can be, yes, but that's not how it's configured, yes. MS. BOREN: Right. It depends on how you do it. So you, I'm assuming, as a supervisor, reset the cards so that you were then able to turn on that machine, correct? DR. COOPER: Correct. MS. BOREN: And so you can only do that from	2 3 4 5 6 7 8 9 10	that either they can change the paper roll, or what we've seen in our implementation in Nevada is that they actually keep a couple of extra complete VVPATs that are, you know, with fresh tapes in them that are locked and sealed so that then they can just basically hot-swap those. MS. BOREN: Thank you. REPRESENTATIVE FLEMING: Going around. Okay, Lynn? MS. BAILEY: I have one.
2 3 4 5 6 7 8 9 10 11 12	unified card and a card assigned specifically to that unit DR. COOPER: There can be, yes, but that's not how it's configured, yes. MS. BOREN: Right. It depends on how you do it. So you, I'm assuming, as a supervisor, reset the cards so that you were then able to turn on that machine, correct? DR. COOPER: Correct. MS. BOREN: And so you can only do that from the main	2 3 4 5 6 7 8 9 10 11	that either they can change the paper roll, or what we've seen in our implementation in Nevada is that they actually keep a couple of extra complete VVPATs that are, you know, with fresh tapes in them that are locked and sealed so that then they can just basically hot-swap those. MS. BOREN: Thank you. REPRESENTATIVE FLEMING: Going around. Okay, Lynn? MS. BAILEY: I have one. REPRESENTATIVE FLEMING: Thank you.
2 3 4 5 6 7 8 9 10 11 12 13	unified card and a card assigned specifically to that unit DR. COOPER: There can be, yes, but that's not how it's configured, yes. MS. BOREN: Right. It depends on how you do it. So you, I'm assuming, as a supervisor, reset the cards so that you were then able to turn on that machine, correct? DR. COOPER: Correct. MS. BOREN: And so you can only do that from the main DR. COOPER: From the election management	2 3 4 5 6 7 8 9 10 11 12 13	that either they can change the paper roll, or what we've seen in our implementation in Nevada is that they actually keep a couple of extra complete VVPATs that are, you know, with fresh tapes in them that are locked and sealed so that then they can just basically hot-swap those. MS. BOREN: Thank you. REPRESENTATIVE FLEMING: Going around. Okay, Lynn? MS. BAILEY: I have one. REPRESENTATIVE FLEMING: Thank you. MS. BAILEY: Can you tell me the data that's
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16	unified card and a card assigned specifically to that unit DR. COOPER: There can be, yes, but that's not how it's configured, yes. MS. BOREN: Right. It depends on how you do it. So you, I'm assuming, as a supervisor, reset the cards so that you were then able to turn on that machine, correct? DR. COOPER: Correct. MS. BOREN: And so you can only do that from the main DR. COOPER: From the election management system, yes.	2 3 4 5 6 7 8 9 10 11 12 13	that either they can change the paper roll, or what we've seen in our implementation in Nevada is that they actually keep a couple of extra complete VVPATs that are, you know, with fresh tapes in them that are locked and sealed so that then they can just basically hot-swap those. MS. BOREN: Thank you. REPRESENTATIVE FLEMING: Going around. Okay, Lynn? MS. BAILEY: I have one. REPRESENTATIVE FLEMING: Thank you. MS. BAILEY: Can you tell me the data that's contained in your QR code? DR. COOPER: Yes, I can. So there's a variety of data. So there is a digital
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	unified card and a card assigned specifically to that unit DR. COOPER: There can be, yes, but that's not how it's configured, yes. MS. BOREN: Right. It depends on how you do it. So you, I'm assuming, as a supervisor, reset the cards so that you were then able to turn on that machine, correct? DR. COOPER: Correct. MS. BOREN: And so you can only do that from the main DR. COOPER: From the election management system, yes. MS. BOREN: Okay. The capacity of the paper	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17	that either they can change the paper roll, or what we've seen in our implementation in Nevada is that they actually keep a couple of extra complete VVPATs that are, you know, with fresh tapes in them that are locked and sealed so that then they can just basically hot-swap those. MS. BOREN: Thank you. REPRESENTATIVE FLEMING: Going around. Okay, Lynn? MS. BAILEY: I have one. REPRESENTATIVE FLEMING: Thank you. MS. BAILEY: Can you tell me the data that's contained in your QR code? DR. COOPER: Yes, I can. So there's a
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	unified card and a card assigned specifically to that unit DR. COOPER: There can be, yes, but that's not how it's configured, yes. MS. BOREN: Right. It depends on how you do it. So you, I'm assuming, as a supervisor, reset the cards so that you were then able to turn on that machine, correct? DR. COOPER: Correct. MS. BOREN: And so you can only do that from the main DR. COOPER: From the election management system, yes. MS. BOREN: Okay. The capacity of the paper printer for the VVPAT?	2 3 4 5 6 7 8 9 10 11 12 13 14 15	that either they can change the paper roll, or what we've seen in our implementation in Nevada is that they actually keep a couple of extra complete VVPATs that are, you know, with fresh tapes in them that are locked and sealed so that then they can just basically hot-swap those. MS. BOREN: Thank you. REPRESENTATIVE FLEMING: Going around. Okay, Lynn? MS. BAILEY: I have one. REPRESENTATIVE FLEMING: Thank you. MS. BAILEY: Can you tell me the data that's contained in your QR code? DR. COOPER: Yes, I can. So there's a variety of data. So there is a digital
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19	unified card and a card assigned specifically to that unit DR. COOPER: There can be, yes, but that's not how it's configured, yes. MS. BOREN: Right. It depends on how you do it. So you, I'm assuming, as a supervisor, reset the cards so that you were then able to turn on that machine, correct? DR. COOPER: Correct. MS. BOREN: And so you can only do that from the main DR. COOPER: From the election management system, yes. MS. BOREN: Okay. The capacity of the paper printer for the VVPAT? DR. COOPER: Again, it depends on the number	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18	that either they can change the paper roll, or what we've seen in our implementation in Nevada is that they actually keep a couple of extra complete VVPATs that are, you know, with fresh tapes in them that are locked and sealed so that then they can just basically hot-swap those. MS. BOREN: Thank you. REPRESENTATIVE FLEMING: Going around. Okay, Lynn? MS. BAILEY: I have one. REPRESENTATIVE FLEMING: Thank you. MS. BAILEY: Can you tell me the data that's contained in your QR code? DR. COOPER: Yes, I can. So there's a variety of data. So there is a digital representation of the voter selections. There is
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	unified card and a card assigned specifically to that unit DR. COOPER: There can be, yes, but that's not how it's configured, yes. MS. BOREN: Right. It depends on how you do it. So you, I'm assuming, as a supervisor, reset the cards so that you were then able to turn on that machine, correct? DR. COOPER: Correct. MS. BOREN: And so you can only do that from the main DR. COOPER: From the election management system, yes. MS. BOREN: Okay. The capacity of the paper printer for the VVPAT? DR. COOPER: Again, it depends on the number of selections, but generally you're looking at between two and three hundred voter records per roll.	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20	that either they can change the paper roll, or what we've seen in our implementation in Nevada is that they actually keep a couple of extra complete VVPATs that are, you know, with fresh tapes in them that are locked and sealed so that then they can just basically hot-swap those. MS. BOREN: Thank you. REPRESENTATIVE FLEMING: Going around. Okay, Lynn? MS. BAILEY: I have one. REPRESENTATIVE FLEMING: Thank you. MS. BAILEY: Can you tell me the data that's contained in your QR code? DR. COOPER: Yes, I can. So there's a variety of data. So there is a digital representation of the voter selections. There is election-related information, precinct, ballot style, election date, and then there's also some security elements, some keys and signing values
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21	unified card and a card assigned specifically to that unit DR. COOPER: There can be, yes, but that's not how it's configured, yes. MS. BOREN: Right. It depends on how you do it. So you, I'm assuming, as a supervisor, reset the cards so that you were then able to turn on that machine, correct? DR. COOPER: Correct. MS. BOREN: And so you can only do that from the main DR. COOPER: From the election management system, yes. MS. BOREN: Okay. The capacity of the paper printer for the VVPAT? DR. COOPER: Again, it depends on the number of selections, but generally you're looking at between two and three hundred voter records per roll. MS. BOREN: Will it allow for a partial	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21	that either they can change the paper roll, or what we've seen in our implementation in Nevada is that they actually keep a couple of extra complete VVPATs that are, you know, with fresh tapes in them that are locked and sealed so that then they can just basically hot-swap those. MS. BOREN: Thank you. REPRESENTATIVE FLEMING: Going around. Okay, Lynn? MS. BAILEY: I have one. REPRESENTATIVE FLEMING: Thank you. MS. BAILEY: Can you tell me the data that's contained in your QR code? DR. COOPER: Yes, I can. So there's a variety of data. So there is a digital representation of the voter selections. There is election-related information, precinct, ballot style, election date, and then there's also some security elements, some keys and signing values for the actual printed record so you can verify
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	unified card and a card assigned specifically to that unit DR. COOPER: There can be, yes, but that's not how it's configured, yes. MS. BOREN: Right. It depends on how you do it. So you, I'm assuming, as a supervisor, reset the cards so that you were then able to turn on that machine, correct? DR. COOPER: Correct. MS. BOREN: And so you can only do that from the main DR. COOPER: From the election management system, yes. MS. BOREN: Okay. The capacity of the paper printer for the VVPAT? DR. COOPER: Again, it depends on the number of selections, but generally you're looking at between two and three hundred voter records per roll. MS. BOREN: Will it allow for a partial print?	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22	that either they can change the paper roll, or what we've seen in our implementation in Nevada is that they actually keep a couple of extra complete VVPATs that are, you know, with fresh tapes in them that are locked and sealed so that then they can just basically hot-swap those. MS. BOREN: Thank you. REPRESENTATIVE FLEMING: Going around. Okay, Lynn? MS. BAILEY: I have one. REPRESENTATIVE FLEMING: Thank you. MS. BAILEY: Can you tell me the data that's contained in your QR code? DR. COOPER: Yes, I can. So there's a variety of data. So there is a digital representation of the voter selections. There is election-related information, precinct, ballot style, election date, and then there's also some security elements, some keys and signing values for the actual printed record so you can verify them if it's been altered after it's been cast.
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	unified card and a card assigned specifically to that unit DR. COOPER: There can be, yes, but that's not how it's configured, yes. MS. BOREN: Right. It depends on how you do it. So you, I'm assuming, as a supervisor, reset the cards so that you were then able to turn on that machine, correct? DR. COOPER: Correct. MS. BOREN: And so you can only do that from the main DR. COOPER: From the election management system, yes. MS. BOREN: Okay. The capacity of the paper printer for the VVPAT? DR. COOPER: Again, it depends on the number of selections, but generally you're looking at between two and three hundred voter records per roll. MS. BOREN: Will it allow for a partial print? DR. COOPER: No. So it has a low-paper	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	that either they can change the paper roll, or what we've seen in our implementation in Nevada is that they actually keep a couple of extra complete VVPATs that are, you know, with fresh tapes in them that are locked and sealed so that then they can just basically hot-swap those. MS. BOREN: Thank you. REPRESENTATIVE FLEMING: Going around. Okay, Lynn? MS. BAILEY: I have one. REPRESENTATIVE FLEMING: Thank you. MS. BAILEY: Can you tell me the data that's contained in your QR code? DR. COOPER: Yes, I can. So there's a variety of data. So there is a digital representation of the voter selections. There is election-related information, precinct, ballot style, election date, and then there's also some security elements, some keys and signing values for the actual printed record so you can verify them if it's been altered after it's been cast. REPRESENTATIVE FLEMING: Going around. All
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	unified card and a card assigned specifically to that unit DR. COOPER: There can be, yes, but that's not how it's configured, yes. MS. BOREN: Right. It depends on how you do it. So you, I'm assuming, as a supervisor, reset the cards so that you were then able to turn on that machine, correct? DR. COOPER: Correct. MS. BOREN: And so you can only do that from the main DR. COOPER: From the election management system, yes. MS. BOREN: Okay. The capacity of the paper printer for the VVPAT? DR. COOPER: Again, it depends on the number of selections, but generally you're looking at between two and three hundred voter records per roll. MS. BOREN: Will it allow for a partial print? DR. COOPER: No. So it has a low-paper sensors, so if it's in danger of not being able	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24	that either they can change the paper roll, or what we've seen in our implementation in Nevada is that they actually keep a couple of extra complete VVPATs that are, you know, with fresh tapes in them that are locked and sealed so that then they can just basically hot-swap those. MS. BOREN: Thank you. REPRESENTATIVE FLEMING: Going around. Okay, Lynn? MS. BAILEY: I have one. REPRESENTATIVE FLEMING: Thank you. MS. BAILEY: Can you tell me the data that's contained in your QR code? DR. COOPER: Yes, I can. So there's a variety of data. So there is a digital representation of the voter selections. There is election-related information, precinct, ballot style, election date, and then there's also some security elements, some keys and signing values for the actual printed record so you can verify them if it's been altered after it's been cast. REPRESENTATIVE FLEMING: Going around. All right. We certainly do appreciate your
2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	unified card and a card assigned specifically to that unit DR. COOPER: There can be, yes, but that's not how it's configured, yes. MS. BOREN: Right. It depends on how you do it. So you, I'm assuming, as a supervisor, reset the cards so that you were then able to turn on that machine, correct? DR. COOPER: Correct. MS. BOREN: And so you can only do that from the main DR. COOPER: From the election management system, yes. MS. BOREN: Okay. The capacity of the paper printer for the VVPAT? DR. COOPER: Again, it depends on the number of selections, but generally you're looking at between two and three hundred voter records per roll. MS. BOREN: Will it allow for a partial print? DR. COOPER: No. So it has a low-paper	2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23	that either they can change the paper roll, or what we've seen in our implementation in Nevada is that they actually keep a couple of extra complete VVPATs that are, you know, with fresh tapes in them that are locked and sealed so that then they can just basically hot-swap those. MS. BOREN: Thank you. REPRESENTATIVE FLEMING: Going around. Okay, Lynn? MS. BAILEY: I have one. REPRESENTATIVE FLEMING: Thank you. MS. BAILEY: Can you tell me the data that's contained in your QR code? DR. COOPER: Yes, I can. So there's a variety of data. So there is a digital representation of the voter selections. There is election-related information, precinct, ballot style, election date, and then there's also some security elements, some keys and signing values for the actual printed record so you can verify them if it's been altered after it's been cast. REPRESENTATIVE FLEMING: Going around. All

Page 317 Page 318 1 DR. COOPER: Thank you. 1 Okay. If I mess up your name, I sincerely 2 REPRESENTATIVE FLEMING: All right. 2 apologize. If you will set me straight. 3 3 (Applause) Debbie, tell us where you're from. REPRESENTATIVE FLEMING: We are now going to 4 MS. ANDERSON: My name is Debbie Anderson. 4 move directly to the public comment portion of 5 I'm the chief registar at Wilkes County. I have 5 6 our meeting. I do have a couple of dozen folks 6 been working in elections for about 20 years, six 7 that have signed up. years last year as the chief registrar. So I was 8 So I think the way we're going to do this 8 there from all paper to the DRE and whatever is 9 is -- right here at the podium? Yeah. Right going forward from there. 10 here at this podium. What I'm going to do is I 10 It's real important that, you know, we get 11 will call your name and ask you to come up. What 11 everything right while we've got the time, even 12 I'll do is I'll probably tell you who's on deck. 12 as short as it is. 13 So the person who's going to be next can go ahead 13 One of the questions I was going to ask, am 14 and come up and either sit here or be ready to 14 concerned about was, one, funding and the number 15 15 of units that would be provided by the state or 16 You will have two minutes. We would ask you 16 whatever to the counties because we all -- we've 17 to come and state your name and tell us where 17 got to come up with funding if we're going to 18 you're from, whether it be city or county or in 18 need more than whatever is provided. 19 Georgia or where else. And I will thank you for 19 What I'm looking at here though is I have coming and then we'll let you start talking. 2.0 about 6,600 voters, seven precincts, probably one 2.0 21 21 So we're going to begin with Debbie set-up in each one would probably be adequate for 22 Anderson, chief registrar of Wilkes County. 22 us. This is really important to know so we can 23 Debbie? Can you reach that? Okay. 23 start looking if we need to do some kind of a 24 And after Debbie, I'm going call on Jean 24 special-option tax or what we need to do to start 25 Ann? Jean Anne? Jeanine? Dufort maybe? No? 25 being ready so that next year we don't all of a Page 319 Page 320 1 sudden find out we got -- you need to get this idea of where to go. 2 stuff in there now. REPRESENTATIVE FLEMING: Thank you. 3 So if y'all could, vendors, please give them 3 MS. ANDERSON: Thank y'all again. some ballpark figures, even if it's, you know, REPRESENTATIVE FLEMING: Appreciate it. 4 4 5 5 Jeanie (pronouncing) Dufort. Jeanie, tell just what one set-up would be for what the normal 6 unit might be. It's nice to look at what the 6 me how you pronounce your name. 7 state would do. We don't need, what was it, 7 MS. DUFORT: Jeanne. REPRESENTATIVE FLEMING: Jeanne. 8 8 200-and-something or a thousand units. We just 9 need a -- we might need one or two. MS. DUFORT: Dufort. REPRESENTATIVE FLEMING: There we go. 10 But it is important if we can get that 10 11 information. And thank y'all for letting us know 11 Exactly what I said, right? 12 about this. I'm really glad we have it. I'm 12 MS. DUFORT: Exactly what you said. That's 1.3 glad to see we've all got a chance to have input 13 right. 14 and to gather and share our time together and REPRESENTATIVE FLEMING: Four times. 15 ideas and try to work together. 1.5 MS. DUFORT: I'm one of five girls and my mom's rule was you can call me anything but don't 16 It's really important we get all this done. 16 17 And I took some videos of the presentations. 17 call me late for dinner, so ... 18 Going back to show my commissioners, my board 18 REPRESENTATIVE FLEMING: Jeanne, tell us 19 members, and others as far as what we could be 19 where you're from --20 looking at because we've got to start preparing 20 MS. DUFORT: I'm from Madison, Georgia. 21 them. And, of course, there's a lot of 21 REPRESENTATIVE FLEMING: Okay. 2.2 variations on what we saw today. Nothing was 2.2 MS. DUFORT: And I'm not an election 23 totally cut and dry. 23 official. I'm not an elected official. I'm a 24 REPRESENTATIVE FLEMING: Okay. 24 concerned citizen and don't -- we in Morgan 25 MS. ANDERSON: But it kind of gives us an 2.5 County are very aware of the wrestling with the

Page 322 Page 321 1 problems, the security problems our votes 1 actual checks you wrote, not the digital 2 2 currently have. And I will admit I came here re-creation of that. 3 3 today predisposed towards hand-marked paper The cyber-security experts we heard today do 4 ballots because it's the easiest way to have a 4 seem aligned behind those choices as the best way meaningful voter-verified thing. to minimize risk and that's what we're all about 5 6 We've seen some re-creations of paper 6 and the best way to discover problems quickly 7 ballots today, re-creations that are slips that, 7 when they occur, and to have the ability to do a 8 you know, are about like looking at a grocery 8 meaningful recount if you really have to. 9 store slip. I think some people register what And all you election officials, you can 10 they've written much easier than looking at a 10 groan with me right now because recounts really 11 little printout thing. 11 suck, right? We don't want to have to do that, 12 And there is some tests. I know the good 12 but you ought to be able to do it well, with 13 doctor over here asked a few people have you done 13 confidence, if you have to go there. 14 research, and I'm aware of some research that's 14 And we know that three out of four American 15 happening, about whether that's a meaningful look 15 voters right now have the ability, are actually 16 if you're going to have a digitally-printed slip. 16 voting with paper ballots. So we're lagging here 17 And they should be talking about optical 17 in Georgia and I love it. We just did state of 18 scanners from what a computer's (indiscernible) 18 in Morgan County last week, and everything out of 19 well may count. They're really, really good at 19 Bert Jones' mouth, everybody: We're number one counting, so let's count them with optical 2.0 in this, we're the top five in this. Well, when 2.0 scanners and let's use risk-limited audits. 21 21 it comes to voting, we're in the bottom five and 22 But an audit isn't meaningful if it's not 22 we need to fix that. I think that's why you've 23 done with original material. You know, there's a 23 spent your time with us today. 24 reason why if you get audited by the IRS, they 24 But here's the thing that was news to me --25 25 REPRESENTATIVE FLEMING: Jeanne, we'll give ask to look at your actual receipts and your Page 323 Page 324 1 you --MR. BEESON: (inaudible) 2 MS. DUFORT: Okay, I'll --2 REPRESENTATIVE FLEMING: Okay. All right. REPRESENTATIVE FLEMING: -- you time to wrap 3 3 Okay. 4 up. Δ Jeb Cameron? Jeb Cameron? 5 MS. DUFORT: -- wrap it up. I wasn't paying MR. CAMERON: (inaudible) 6 as much attention to some of you. Thirty-million 6 REPRESENTATIVE FLEMING: Also? Okay. 7 dollars, a hundred-and-thirty-million dollars, I 7 That's all right. 8 didn't hear one thing today that showed me why 8 Kathy Rogers? Might've been a 9 you would look the voters in the eye, look the 9 misunderstanding there. How about Denice Traina? Denice? Is Denice here? 10 taxpayers in the eye and say: We just spent an 10 11 extra hundred-million dollars for this really 11 (Audience member speaking off mic) 12 cool thing. 12 REPRESENTATIVE FLEMING: Okay, who is your 13 If there's a \$30-million solution that is 13 son? Joseph? 14 sound and solid, that's what y'all need to do. 14 Joseph, come on up. Say your name and tell 1.5 REPRESENTATIVE FLEMING: Thank you. We 1.5 us where you're from. 16 appreciate you coming today. 16 MR. TRAINA: Sure. Thank you. I'm Joe 17 MS. DUFORT: Thank you. 17 Traina. I'm a voter in Richmond County, a former 18 REPRESENTATIVE FLEMING: Next up will be 18 county party secretary, and I participated in the 19 Phillip Williams, and after Phillip will be Mac 19 Burke County recount, so I've been following the 20 Beeson. 2.0 work here. I appreciate the work that Lynn 21 So, Phillip, come on up if you are still 21 does -- she works every day -- and the work that 2.2 here. 2.2 she's done here today. 23 Is Phillip here? Going once, going 23 As a local voter and a founding member of 24 24 twice ... Progressives for Democratic Reform, we welcome 25 Mac Beeson? Is Mac here? 25 the commission members to preserve our most

2.2

23

24

2.5

about it.

for more than six months and nothing was done

counted accurately and securely. So I urge you

that whatever system you go with -- I haven't

I'm concerned that every vote is cast and

August 30, 2018 Page 325 Page 326 1 precious right, the right of Americans to select 1 are incredibly expensive, we therefore ask the 2 2 commission to consider proposing instant run-off representation who govern on our behalf. PDR 3 believes that it's a precious right must be 3 voting, also known as ranked choice voting, which 4 protected and not be put at risk which is why we 4 are proving to be great reductions of costs in understand this is a not a partisan issue and 5 recent elections where they've been held. 5 6 even stands to hold our own accountable when 6 And finally, number three, when we vote, it 7 exclusionary practices jeopardize our inalienable 7 is vital in order to trust in the process that 8 8 verifiable results are secure, with a paper trail rights as citizens. 9 Three quick points I want to leave you guys 9 and digital corroboration, which means is -- or 10 with and just to be on the record for: Number 10 what we're asking then for the commission to 11 one, the most important is the right to vote must 11 consider is the following proposal. Make no 12 not be infringed by any feature of access, 12 changes to the current system, simply add 13 technical skill, economy, or partisan limitation. 13 physical receipts and a digital verification 14 This means ability, income, transportation, 14 component. 15 physical address. Partisan identity must not be 15 Nominal investment in printing receipts 16 functional deterrents to determining our 16 would mean the same process folks are used to is 17 representation. 17 leveraged by a time-stamped copy of a voter's 18 So we encourage the commission to lobby 18 ballot with barcodes or unique ID that voters can 19 leadership for automatic registration, allowing 19 use to verify or report problems themselves some voters to cast ballots for, quote, none of 2.0 within real-time databases. This way votes and 2.0 21 21 the above, end quote, or at the very least, receipts are physical but audit processes remain 22 same-day election-day registration -- to include 22 largely unchanged beyond the inclusion of digital 23 23 backups verified by the voters themselves in election-day registration. 24 24 partnership with boards of election. Number two, as taxpayers understand 25 elections and the ever-expanding campaign season 25 Thank you for your time. Page 327 Page 328 1 REPRESENTATIVE FLEMING: Thank you, Joe. heard the entire day here, but whatever system 2 Appreciate you being here today. 2 you vote in, I, too, urge that you have a paper 3 Next I have on my list is Terry Reeves and 3 trail, receipt trail, so that there can be no 4 after Terry will be John Fortuin. Δ error. That is our one wonderful beautiful right 5 Terry Reeves? Terry, welcome. Tell us --5 and that is to choose our elected officials and 6 go ahead and say your name again for us and tell 6 to vote. 7 us where you're from. And I ask you to please protect that right 8 MS. REEVES: Yes. Thank you very much. I'm 8 and do everything in your power to make sure that q Terry Reeves. I live in Rutledge, Georgia in 9 we do have a trail and that it is done accurate. 10 Morgan County. 10 And I appreciate your time. Thank you all 11 REPRESENTATIVE FLEMING: Good to have you. 11 very much for this commission. 12 MS. REEVES: Thank you very much and thank 12 REPRESENTATIVE FLEMING: Thank you very 13 you all for having this commission. I am a 13 much. 14 concerned citizen. I'm not with any one All right, John? John Fortuin? Is John 15 particular group. I called the secretary of 1.5 here? state after we attended our local board of 16 Okay. John, welcome, please pronounce your 17 elections meeting out of concern for the security 17 last name correctly because I'm sure I did not 18 of voting and the need for paper ballots because 18 and tell us where you're from. 19 we knew that Kennesaw State hacked into our 19 MR. FORTUIN: Hi. My name is John Fortuin, 20 system and our voter information was out there 20 and I'm from Athens-Clarke County.

21

2.2

23

24

2.5

REPRESENTATIVE FLEMING: Thank you, John.

MR. FORTUIN: I'm actually a candidate for

Senate District 46. I'm in the Green party, but

I come here today as a concerned citizen who's

been working on this issue actually since 2004.

Page 329 Page 330 1 REPRESENTATIVE FLEMING: John, I'm going to There's been concern about this voting 1 2 2 system from even before it was implemented. And let you wrap-up. 3 3 MR. FORTUIN: All right. And once again -people have said: No, it's just old, we need to replace it because it's old. 4 and we were subjected to the misinformation since 4 It needed to be replaced before it was 5 the initial deployment of this original system. 5 6 deployed. And we need to make certain we don't 6 We need complete transparency on every aspect of 7 make the kind of mistakes that we did back then. the bidding. We need the bidding process to be 8 I've heard some well-meaning citizens today talk 8 open. We need actually to make certain that the 9 about the need for a paper trail. We folks who lobbyists are not raking the citizens over the 10 have been working on this for years, including 10 coals. We need to know how much they're getting 11 the Verified Voting Foundation -- which I'm not 11 paid, what their contracts are as well. 12 officially affiliated with, but I did give you 12 REPRESENTATIVE FLEMING: John, thank you. 13 that handout. 13 Appreciate you coming today. 14 We're asking for paper ballots in general 14 MR. FORTUIN: Thank you. 15 because a paper trail is not defined in the law. 15 REPRESENTATIVE FLEMING: Next is Susan 16 There's plenty of state law about how paper 16 McWethy and after Susan, Dave Barbee. So is 17 ballots are being handled. In order save money 17 Susan here? 18 for the state, we need to use ballot scanners in 18 Susan, please come on up. Do you want us to 19 each polling place. 19 pass those around for you? Okay. Susan, If we wanted to incinerate George's tax 2.0 welcome. Tell me how I mispronounced your last 2.0 21 21 dollars, we could go with ballot-marking devices name and where you're from. 22 for perfectly able people, but they amount to 22 MS. MCWETHY: McWethy. REPRESENTATIVE FLEMING: I did okay? 23 very expensive pens and pencils, and we don't 23 24 need to spend thousands on a device that 24 MS. MCWETHY: Yes. Susan McWethy from -- I 25 25 live in Decatur. substitutes for a pen or pencil. Page 331 Page 332 1 REPRESENTATIVE FLEMING: Decatur. Welcome, 1 would -- I can reiterate what John Fortuin just 2 Susan. 2 said about paper. It's simpler. It allows for a voter chain of custody. It makes sense, and I 3 MS. MCWETHY: Thank you. Well, I feel that 3 think scanning is good too, but we also must have 4 voting should not be an active of faith, and I Δ 5 really want to believe elections officials when an audit, a proper audit, proper risk-limiting 6 they give us assurances that everything is great 6 audit. 7 with our system, and I just can't. And there's So, again, transparency, simplicity, then I 8 8 will have confidence. been so much that's come out over the years of q the vulnerabilities with our current system. I q Thank you. REPRESENTATIVE FLEMING: Thank you, Susan. 10 could name a bunch of places: Homeland Security, 10 11 Princeton University did a study, Johns Hopkins 11 We appreciate you coming today. 12 University, Brennan Center for Justice, Election 12 Dave Barbee and after Dave will be Liz 13 Assistance Commission, on and on, Government 13 Throop. I think I pronounced that right. We'll 14 Accountability Office, Defcon. I could go on and See. 15 on. 15 Dave --16 I never read that our system is great, and I MR. BARBEE: Okay. 17 want to have confidence in it. And now it looks 17 REPRESENTATIVE FLEMING: -- tell us your name and where you're from. 18 like we're going to have to trust barcodes to 18 19 represent our votes, and they're every bit as 19 MR. BARBEE: My name's Dave Barbee. I'm 20 obscure as hitting "cast ballot" on a DRE 2.0 from Richmond County. 21 machine. I can't read barcodes, you know? I 21 REPRESENTATIVE FLEMING: Thank you, Dave. 2.2 voted for who? And also, we've learned today 2.2 Good to have you. 2.3 23 that these QR codes are a part of the MR. BARBEE: Thank you. 24 different -- with the other vendors' products. 24 Two reasons we're here: Number one. 25 So I just think simplicity is better, and I 25 Diebold's out of business, machines are old and

August	30, 2010		
	Page 333		Page 334
1	we've got to replace them.	1	business, except mine and the Almighty.
2	Number two, everybody's afraid that	2	If you want to talk about paper trail and
3	somebody's going to change the vote.	3	paper ballots, I'm the oldest guy in here. I
4	Now, folks, that Diebold machine has been	4	remember when we had paper ballots this long and
5	voting in Richmond County for 16 years in this	5	you marked the top of it with an "x" and you put
6	thing. And the only way that that thing's hooked	6	it in the box. Guess what? After all the votes
7	up to the wall is through electricity. I don't	7	were counted, somebody always found another box.
8	care who you are, you can't change my vote.	8	They had ballots that wasn't counted. I'm not
9	Lynn's been great. She's had over 500	9	going to it happens, okay? So
10	machines that we have for Richmond County, a lot	10	REPRESENTATIVE FLEMING: Need to wrap-up,
11	of money to be replaced. And I've trusted every	11	Dave.
12	vote that I've cast and I know it's been counted.	12	MR. BARBEE: be careful what you do. I'm
13	Now, this thing about paper trails I think is	13	just asking you to make sure we have the same
14	just metal hats.	14	safe system, the safe system we have now.
15	Lynn and I have even had a discussion about	15	Thank you.
16	the "I voted" peach sticker. That's legal tender	16	REPRESENTATIVE FLEMING: Thank you, Dave.
17	on election day. You can take that, go to a	17	We appreciate you coming today.
18	certain areas or a certain whatever and get paid	18	Liz? Is Liz here? Liz? Tell me how to
19	for turning in that sticker.	19	pronounce your last name and tell us where you're
20	And I certainly don't want to do anything	20	from.
21	with the systems that we have now that would	21	MS. THROOP: Hi, I'm Liz Throop.
22	change our system to where my vote is not	22	REPRESENTATIVE FLEMING: Say it again.
23	private. That's my vote. I don't want any	23	MS. THROOP: From Atlanta.
24	you know, any record. I know how I voted and	24	REPRESENTATIVE FLEMING: All right.
25	that's all that matters. It's none of your	25	MS. THROOP: Again, I'm so impressed with
	Page 335		Page 336
1	all of you and your really sweating all these	1	Okay, after then we'll move on to Jackson
2	details and there's so many: Things like	2	Faw.
3	accessibility, overcounting, undercounting, the	3	Jackson, did I pronounce that last name
4	cost of equipment, how quickly machines tabulate,	4	right?
5	and I appreciate that, but if votes are	5	MR. FAW: (inaudible)
6	miscounted, that really dwarfs it invalidates	6	REPRESENTATIVE FLEMING: Okay. Jackson,
7	all of these other problems.	7	good to have you. Tells us where you're from.
8	And I'm concerned because I see a strong and	8	Happy to hear from you.
9	growing perception that Georgia's elections don't	9	MR. FAW: Likewise. Thank you very much.
10	or might not reflect voter intent. I can't think	10	Jackson Faw from Atlanta, Georgia. I'm just a
11	of a bigger reason for business and for the	11	concerned voter.
12	business class to actually leave Georgia than for	12	Last year in Atlanta, y'all might remember
13	the perception of corrupt government.	13	we had I-85 caught on fire. Six lanes both
14	And I'm stressing that, you know, perception	14	ways went down. It affected 250-million cars a
15			1,1
	is reality when you're talking about getting	1.5	day, and everybody said: Well, that's going to
	is reality when you're talking about getting	15 16	day, and everybody said: Well, that's going to
16	people out to the polls and to making decisions	16	take six months. I know it takes a certain
16 17	people out to the polls and to making decisions about where they live. Only counted verifiable	16 17	take six months. I know it takes a certain amount of time for concrete to cure. But guess
16 17 18	people out to the polls and to making decisions about where they live. Only counted verifiable votes directly tabulated without encoding and	16 17 18	take six months. I know it takes a certain amount of time for concrete to cure. But guess what? Georgia resolved it. Georgia funding got
16 17 18 19	people out to the polls and to making decisions about where they live. Only counted verifiable votes directly tabulated without encoding and barcodes will restore trust in the voting system.	16 17 18 19	take six months. I know it takes a certain amount of time for concrete to cure. But guess what? Georgia resolved it. Georgia funding got that bridge fixed in 44 days.
16 17 18 19 20	people out to the polls and to making decisions about where they live. Only counted verifiable votes directly tabulated without encoding and barcodes will restore trust in the voting system. Again, thank you.	16 17 18 19 20	take six months. I know it takes a certain amount of time for concrete to cure. But guess what? Georgia resolved it. Georgia funding got that bridge fixed in 44 days. Right now, the eyes of the nation are on
16 17 18 19 20 21	people out to the polls and to making decisions about where they live. Only counted verifiable votes directly tabulated without encoding and barcodes will restore trust in the voting system. Again, thank you. REPRESENTATIVE FLEMING: Thank you, Liz. We	16 17 18 19 20 21	take six months. I know it takes a certain amount of time for concrete to cure. But guess what? Georgia resolved it. Georgia funding got that bridge fixed in 44 days. Right now, the eyes of the nation are on Georgia in this coming election as we're
16 17 18 19 20 21 22	people out to the polls and to making decisions about where they live. Only counted verifiable votes directly tabulated without encoding and barcodes will restore trust in the voting system. Again, thank you. REPRESENTATIVE FLEMING: Thank you, Liz. We appreciate you being here today.	16 17 18 19 20 21 22	take six months. I know it takes a certain amount of time for concrete to cure. But guess what? Georgia resolved it. Georgia funding got that bridge fixed in 44 days. Right now, the eyes of the nation are on Georgia in this coming election as we're preparing to possibly elect the first black
16 17 18 19 20 21 22 23	people out to the polls and to making decisions about where they live. Only counted verifiable votes directly tabulated without encoding and barcodes will restore trust in the voting system. Again, thank you. REPRESENTATIVE FLEMING: Thank you, Liz. We appreciate you being here today. Next I'm going to ask Dave Titus to come up	16 17 18 19 20 21 22 23	take six months. I know it takes a certain amount of time for concrete to cure. But guess what? Georgia resolved it. Georgia funding got that bridge fixed in 44 days. Right now, the eyes of the nation are on Georgia in this coming election as we're preparing to possibly elect the first black female governor, first black female to be running
16 17 18 19 20 21 22 23 24	people out to the polls and to making decisions about where they live. Only counted verifiable votes directly tabulated without encoding and barcodes will restore trust in the voting system. Again, thank you. REPRESENTATIVE FLEMING: Thank you, Liz. We appreciate you being here today. Next I'm going to ask Dave Titus to come up and then after that Jackson Faw.	16 17 18 19 20 21 22 23 24	take six months. I know it takes a certain amount of time for concrete to cure. But guess what? Georgia resolved it. Georgia funding got that bridge fixed in 44 days. Right now, the eyes of the nation are on Georgia in this coming election as we're preparing to possibly elect the first black female governor, first black female to be running on a major party ticket.
16 17 18 19 20 21 22 23	people out to the polls and to making decisions about where they live. Only counted verifiable votes directly tabulated without encoding and barcodes will restore trust in the voting system. Again, thank you. REPRESENTATIVE FLEMING: Thank you, Liz. We appreciate you being here today. Next I'm going to ask Dave Titus to come up	16 17 18 19 20 21 22 23	take six months. I know it takes a certain amount of time for concrete to cure. But guess what? Georgia resolved it. Georgia funding got that bridge fixed in 44 days. Right now, the eyes of the nation are on Georgia in this coming election as we're preparing to possibly elect the first black female governor, first black female to be running

2.2

23

24

2.5

going to be shut down was because there was a

tiny legal published in a weekly in Richmond

County -- in Randolph County, and one person

to the press and so forth and so on.

found it and started circulating the information

August 30, 2018 Page 337 Page 338 1 REPRESENTATIVE FLEMING: Jackson, I'll allow secretary of state motion to dismiss a case, and 1 2 2 she's going to make a judgment or they're going you wrap it up. 3 to make a judgment in about -- in another couple 3 MR. FAW: Yes, sir, I'll wrap it up. 4 4 REPRESENTATIVE FLEMING: Okay. of weeks. And today we heard the secretary of state, controller of elections who's also running 5 MR. FAW: Each of you are that are making 5 6 for governor, say that well, she might not make 6 this decision, history's going to be looking at 7 us do that. That -- folks, that can't be our 7 you, and whichever way this election goes, we're 8 solution. We can't say that maybe it won't 8 going to be looking back and y'all's names are 9 happen because there's a lot of scrutiny right 9 going to be on this. As a Georgian, I want to be 10 now. 10 proud to say this election was fair and 11 There's a lot of people saying why do we 11 accountable. 12 have the person in charge of elections is in 12 Thank you. 13 charge of his own election. Last week --13 REPRESENTATIVE FLEMING: Thank you, Jackson. 14 Mr. Harvey, I know you know about this -- we had 14 Next we have Priscilla Smith, and after 15 ten black counties in Georgia targeted for poll 15 Priscilla, I'm going to ask Smythe DuVal to come 16 closures. Were it not for media attention from 16 up. 17 across the country, Randolph County would've 17 Priscilla, welcome. Tell us where you're 18 closed seven out of its nine polling locations in 18 from. 19 a community that's \$35,000-a-year 19 MS. SMITH: Thank you very much. I'm 2.0 (indiscernible). 20 Priscilla Smith. I voted in DeKalb County. I 21 lived in the city of Atlanta. 21 So my point is, folks, we can get this done. REPRESENTATIVE FLEMING: Welcome. 22 We heard the vendors say they can get it done. 22 MS. SMITH: Thank you. Thank you very much 23 We had two vendors say today they could get it 23 24 24 done in eight weeks, whatever they're going to for your service to the commission. We really 25 25 bring, donkeys and elephants, to get it fixed. appreciate it. Page 340 Page 339 1 There are many people who are, like, amazed 1 I don't know who's protecting us. The 2 that I, an ordinary citizen, am here for this. 2 secretary of state is running for governor 3 Does the citizenry really care, do people really 3 himself. He doesn't have a vested interest in care about this? Well, of course they care. 4 Δ undermining what's going wrong with the current 5 5 voting system. I don't know who's going to I've been doing a lot of work in rural counties, trying to get voters out. And also looking at 6 6 represent us if you don't. 7 what happened in Richmond (sic) County last week, 7 I'm begging you to recognize that something 8 8 has to be done between now and October 15th when I went and helped collect signatures to make sure 9 that people understood about what was going on q early voting begins. There are people here who 10 with their polling places possibly being closed 10 said they can handle the situation. We can do 11 and doing what we could to stop that from 11 something. Stacey Abrams is calling for absentee 12 happening. 12 ballots. No one wants to do that in the massive 13 The only reason that happened was -- and I 13 amounts that's going to be required. But I don't 14 realize that I'm probably speaking outside of 14 know how we're supposed to trust our vote. 15 what is your purview. I understand that SAFE is 1.5 And the disaffected voters that I've run 16 not about this year's election, but what is about 16 into across rural Georgia don't trust anything. 17 this year's election? It's been demonstrated 17 And nothing I've seen today makes me know that 18 that the current voting system, in spite of what 18 this next election is going to encourage people 19 was said earlier, is not SAFE. The reason why we 19 to be the citizens that they have to be in order 20 knew that those places, those polling places were 20 to make democracy work.

21

2.2

2.3

24

25

So I beg you with what power you have as

this commission to do something to increase the

REPRESENTATIVE FLEMING: Thank you,

voter security for the next election.

Thank you very much.

Page 341 Page 342 1 Priscilla. We appreciate you coming today. 1 really want the gold standard of verifiable 2 2 ballots in this state. Mr. Smythe? Pronounce your last name for 3 3 me. The second thing I wanted to talk about is MR. DUVAL: DuVal. Smythe DuVal. 4 this coming-up election. I was in the camp that 4 REPRESENTATIVE FLEMING: DuVal. Tell us 5 we don't really need to change anything until the 5 6 where you're from. 6 news came out our foreign adversaries were MR. DUVAL: I am from Marietta, Georgia. 7 actually looking at our sites. At that point, REPRESENTATIVE FLEMING: Thank you for being 8 the risk profile has gone up for me personally. 9 here today. I certainly don't know what the professionals are 10 MR. DUVAL: You're welcome. Thank you for 10 finding out, but I was very glad Mr. Mike Garcia 11 hosting us. I am a Kennesaw graduate student in 11 spoke this morning. He was talking about risk, 12 IT. I have experience in IT. And I'm also a 12 risk assessment, and how to actually prioritize 13 Libertarian candidate for the Georgia secretary 13 risk. 14 of state and a concerned citizen. 14 That is my specialty in IT and I would like 15 So I'd like to thank you again for hosting 15 to point out that it's something we do need to 16 the meeting. Let's see. I want to do three 16 take extraordinarily seriously, especially when 17 things. First, for a candidate, two minutes is 17 we're talking about the potential adversaries are 18 always really, really hard. 18 state-sponsored types of adversaries, people who 19 But hand-marked paper ballots, along with 19 have gone under so many other types of 2.0 post-election audits, that is the gold standard. 2.0 organizations that have way more resources than 21 I think there's a lot to it to talk about that. 21 we do. 22 But for everybody on the panel, I would 22 This is going to get decided by the judge on 23 23 definitely encourage you to look at the the 18th. With that in mind, I was, again, 24 presentations you had today and see which of 24 shocked to hear that a lot of places in Georgia 25 25 these options were the one in your RFI. We are not planning on any kind of interruption or Page 343 Page 344 1 any kind of plan B, even though they know that be Rick Barron. 2 there's a possibility that these machines are 2 Dana? Is Dana here? 3 going to get decertified, or there's a 3 (inaudible) possibility --REPRESENTATIVE FLEMING: She's coming? 4 Δ REPRESENTATIVE FLEMING: I'll give you a 5 Where is she coming from? 5 6 chance to wrap it up. 6 (inaudible) 7 MR. DUVAL: Sure. Thank you. 7 REPRESENTATIVE FLEMING: Oh, okay. There 8 -- a possibility that, you know, more 8 you are, Dana. Good to have you today. q information could come out. q MS. BOWERS: Thank you. 10 And lastly, I just wanted to thank the panel 10 REPRESENTATIVE FLEMING: Say your name again 11 again, but also I'm concerned that the panel is 11 for us and tell us where you're from and we'd 12 not transparent enough. I'm hearing from panel 12 love to hear from you. 1.3 members that there's really not a whole lot going 13 MS. BOWERS: Hi. My name is Dana Bowers. I 14 on in the panel besides these meetings. There's 14 am from Gwinnett County. I am a native Georgian 1.5 no study groups, no requirements definition, no 1.5 as well. meetings. It sounds like the work of this going REPRESENTATIVE FLEMING: Thank you, Dana. 16 17 on is in the secretary of state's office and not 17 MS. BOWERS: I just would like to thank the 18 the panel. 18 commission for taking public commentary and 19 I'd like to hear more about it. I would 19 questions into consideration. I attended the 2.0 love for you guys to get a Twitter handle or a 20 first state commission meeting and I presented a 21 Facebook page or something so we can start 21 proposal for the easy and inexpensive 2.2 communicating with you directly. 2.2 implementation of paper ballots for the November 23 REPRESENTATIVE FLEMING: Thank you, 23 general election using the current equipment the 24 Mr. Smythe (sic). 24 state already has on hand. 25 Next will be Dana Bowers and after Dana will 25 As an election integrity activist and

Page 345 Page 346 1 everyday Georgia citizen, I am extremely 1 testimony from those that do not represent a 2 2 concerned about the lack of verifiable facts corporation and the voice of the voters. 3 3 being used by our top election officials almost Our organization filed a motion for a 4 as much as the lack of verifiable votes we pass 4 preliminary injunction for emergency statewide every time we go to the polls. The secretary of 5 implementation of paper ballots in federal court. 5 6 state's office has taken a personal interest in 6 As of yesterday, Judge Totenberg dismissed 7 unverifying our organization as well as 7 Secretary Kemp's motion to dismiss our case --8 misquoting and misinterpreting the law. REPRESENTATIVE FLEMING: Dana, I 9 So basically what I'm trying to say is (indiscernible) --10 they're actually using their power to come back 10 MS. BOWERS: -- and recorded that hearing --11 on the counties that actually have their own 11 REPRESENTATIVE FLEMING: Ma'am? 12 12 MS. BOWERS: -- where we will -power. 13 So in a formal letter to all Georgia county 13 REPRESENTATIVE FLEMING: Ma'am? 14 boards of elections and boards of county 14 MS. BOWERS: -- be able to prevent more --15 commissioners, the secretary of state's office 1.5 REPRESENTATIVE FLEMING: I want to give you 16 appears to have threatened counties with some 16 a chance --17 form of punishment if they abide by the law that 17 MS. BOWERS: -- information --REPRESENTATIVE FLEMING: -- to wrap up. 18 allows them to independently implement paper 18 MS. BOWERS: -- and reiterate the 19 ballots. No such punishment is defined in any 19 election law in the state of Georgia. This has feasibility of our paper-ballots plan. 2.0 2.0 21 21 the feeling of voter intimidation because after Thank you very much. REPRESENTATIVE FLEMING: Thank you, Dana. 22 all, these commissioners and board members are 22 23 voters just like me. And from one voter to 23 Appreciate you coming here today. 24 another to another, I would like to urge the 24 Rick Barron? Is Rick here? 25 25 state commission to please consider expert Rick, come on up. Good to have you. Please Page 347 Page 348 1 state your name again for us. Tell us where have. I think you're all familiar with the 2 you're from. We'll be happy to hear from you. 2 problems Fulton County had from 2012 and before. MR. BARRON: I'm Richard Barron. I'm the 3 3 So I think over the last five years, my 4 director of registration and elections for Fulton 4 staff and I've worked very hard to make sure that 5 County, Georgia. Fulton County runs its elections well. And I 6 And, well, I'm here today to encourage the 6 think we've achieved that. A lot of it is 7 commission to -- whatever system you end up 7 because of early voting. 8 8 And there's -- three minutes or two minutes deciding upon, please be sure that it q accommodates early voting. We've -- in Fulton q isn't enough to go into all of the other things, County, we've tried to make sure that everyone is 10 10 but I have had eight years of experience in 11 enfranchised. During the presidential election, 11 conducting early voting with -- or -- and voting 12 we had up to 27 locations per day going. We plan 12 with paper ballots in Texas in addition to my 13 on doing up to 22 in the gubernatorial election. 13 time here in Georgia. 14 So what we've done is tried to take a lot of So the biggest complaint with paper ballots 15 pressure off on election day. It is very 1.5 are in early voting when voters received the 16 difficult with paper ballots or a pure paper 16 wrong ballot. And that was basically a pure 17 system to administer early voting. Early voting 17 paper system. If we go to ballot-on-demand 18 is on the book in Georgia. We've got 19 days of 18 printers --19 it. We have to have every ballot style in every 19 REPRESENTATIVE FLEMING: You want to wrap it 20 early voting precinct. 2.0 up. 21 If we come up with a system that is based 21 MR. BARRON: Yeah. If we go to 2.2 mostly on paper, we're going to have a very 2.2 ballot-on-demand printers, we already have 2.3 23 difficult time administering early voting. At multiple printers in each early-voting site 24 that point, we're going to need to increase the 24 because Georgia has an onerous requirement of 25 number of election-day sites that we already 25 printing out every absentee-ballot application.

August	50, 2016	_	
	Page 349		Page 350
1	On-demand printers is going to add more printers.	1	movement in Georgia for 13 years.
2	We would have more backups if that happens, so	2	All but two of the speakers who spoke at the
3	we're going to need to have some sort of	3	June 13th meeting were our members. I've got 30
4	ballot-marking device with paper printout or a	4	years of IT experience. In 2002, I warned
5	DRE with VVPAT for early voting.	5	Kennesaw State University and the secretary of
6	Thank you.	6	state's office not to purchase the current voting
7	REPRESENTATIVE FLEMING: Appreciate you	7	machines because they can't produce a verifiable
8	coming in today.	8	product or handle recountable results.
9	Next will be Joe Traina. Joe? Is Joe here?	9	Last year, 20 computer scientists wrote a
10	(inaudible)	10	letter to the secretary of state's office urging
11	REPRESENTATIVE FLEMING: Oh, okay, maybe it	11	him to decommission these machines for the same
12	was on the list twice. Okay.	12	reasons I gave them 16 years ago.
13	Next, Gerald Favato (pronouncing)? Gerald?	13	So at the June meeting I requested to make a
14	Favorito, okay.	14	presentation to you at a future meeting. The
15	MR. FAVORITO: I'm Garland. Garland	15	agenda I have since fleshed out the agenda.
16	Favorito.	16	It's on the back of your handout. I requested a
17	REPRESENTATIVE FLEMING: Garland? Okay,	17	vote at that time and I'm requesting a vote again
18	Garland. Garland, you write as well as I do.	18	today if you think that this information that \ensuremath{I}
19	Thank you. Welcome. Good to have you today.	19	printed out for you is worthwhile.
20	We'd love to hear from you. Tell us where you're	20	In looking at today's presentations, I need
21	from.	21	to let you know that at least half or more of the
22	MR. FAVORITO: I'm from Roswell, Georgia.	22	presentations you saw today were for unverifiable
23	And I have a handout there. I'm there's two	23	voting systems just like we've been fighting for
24	sides, front and back. I'm the cofounder of	24	16 years. So imagine how that makes me feel to
25	VoterGA. We've led the election-integrity	25	see that we're not really making any progress in
	Page 351		Page 352
1	the 16 years and we're still looking at	1	time today. I want to appreciate y'all, the
2	unverifiable voting equipment again.	2	members of the commission, for coming today and
3	Now, I know that you would not really	3	we thank you for your time.
4	understand that because you haven't seen my	4	Thanks again to Columbia County for all of
5	presentation. You haven't identified in the	5	their kind assistance in setting up the venue for
6	current the proven opportunities, you haven't	6	us. We will stand adjourned. Thank you.
7	defined the requirements you have, and you	7	(Concluded at 6:00 p.m.)
8	haven't evaluated one of the most critical things	8	
9	which is centralized versus decentralized	9	
10	election	10	
11	REPRESENTATIVE FLEMING: Garland, I want to	11	
12	give you a chance to wrap it up.	12	
13	MR. FAVORITO: Okay, give me about 10	13	
14	seconds.	14	
15	The security flaws that are in that election	15	
16	preparation, that's centralized, and that's what	16	
17	we need to discuss now, and I'll go into more	17	
18	detail in my presentation.	18	
10	acture in my presentation.		
19	So again I would ask for a vote on that	19	
	So again I would ask for a vote on that	19 20	
19	So again I would ask for a vote on that today, please.		
19 20	So again I would ask for a vote on that today, please. REPRESENTATIVE FLEMING: Garland, thank you	20	
19 20 21 22	So again I would ask for a vote on that today, please. REPRESENTATIVE FLEMING: Garland, thank you for coming today.	20 21 22	
19 20 21 22 23	So again I would ask for a vote on that today, please. REPRESENTATIVE FLEMING: Garland, thank you for coming today. That concludes the public input for people	20 21	
19 20 21 22	So again I would ask for a vote on that today, please. REPRESENTATIVE FLEMING: Garland, thank you for coming today.	20 21 22 23	

10.90	51 50, 2018
1	CERTIFICATE
2	STATE OF GEORGIA
3	COUNTY OF DEKALB
4	I hereby certify that the foregoing meeting
5	was taken down and was reduced to typewriting under my
6	direction; that the foregoing transcript is a true and
7	correct record given to the best of my ability.
8	The above certification is expressly
9	withdrawn upon the disassembly or photocopying of the
10	foregoing transcript.
11	I further certify that I am not a relative,
12	employee, attorney, or counsel of any of the parties;
13	nor am I financially interested in the action.
14	
15	This, the 25st day of September, 2018.
16	
17	**Mary K McMahan**
18	Mary K. McMahan
19	Mary K. McMahan Certified Court Reporter Certificate Number 2757
20	
21	
22	
23	
24	
25	
	-