

LILY BOND: Welcome, everyone, and thank you for joining this webinar entitled Complying with the Section 508 and Section 255 Refresh. I'm Lily Bond from 3Play Media, and I'll be moderating today. And I'm thrilled to be joined by Bruce Bailey, the accessibility IT specialist at the US Access Board, and Timothy Creagan, senior accessibility specialist at the US Access Board, who were both heavily involved in the writing of the refresh, and have great information available for you today. And with that, I'm going to hand it off to Bruce and Tim, who have a great presentation prepared for you.

TIMOTHY CREAGAN: Thank you, Lily. Good afternoon, everyone. This is Tim Creagan with the US Access Board. We're on the first slide, and today's presentation is going to be an overview of complying with the Section 508 and Section 255 Refresh. Next slide, please.

Today's presentation outline, we're going to cover the following topics-- first of all, the question of, why should we update the Section 508 standards? They were originally published in 2000. Why do we need to update them? Secondly, the final rule, what is the structure and organization? What are key changes and issues from original 508? And then why should we use WCAG 2.0?

Why should we use the Web Content Accessibility Guidelines version 2.0? And in that discussion, we're going to include examples of gaps addressed by the revised standards. Then we'll have the question and answer section, and then we'll have a very brief series of slides of resources. Next slide, slide three, please.

Why update the Section 508 standards? We're going to look at the background and key dates. Next slide, please, slide four.

So we've had a lot of changes in ICT-- that is Information and Communication Technology-- in the 17 years since the original 508 standards were issued. Remember, we're talking about 2000, when the technologies all had names, and we identified the technologies in the 508 standards by the name, what they were called.

Nowadays, we have a lot of different technologies that have converged, and you have content shared across a lot of platforms. So instead of having a separate desktop computer, and a telephone, and a copying machine, and other devices, you have ICT, which combines many of those functions-- your tablets, your mobile phones, your desktop PC. All of them may contain

software and may contain features which have similar actions. So as a result of the changes in technology, we're now focusing on functions rather than product types.

And finally, the big third impetus for making these changes were market forces. Industry and government want harmonized standards. The United States worked very closely with the European Union in developing and updating accessibility standards for information and communication technology, and with a view in mind towards global markets.

If you think about it, accessibility is really addressing human needs. Where human beings are not able to access technology, the solutions are universal. They're not specific to a particular culture. They're more specific to the function. So this really addresses ICT around the world. Next slide, please.

Slide five-- some of the important dates for the revised Section 508 standards. So federal laws-- first of all, most importantly, they have to be published in the Federal Register, which in this case occurred on January 18 of this year, 2017. The rule became effective on March 21, 2017. That means that it essentially came into legal existence.

And then finally, the compliance date, which is the date by which federal agencies must comply with the standards. So looking forward, all of the federal agencies which are looking to Section 508, they're keeping January 18, 2018 in mind. Because that is the date by which they will have to comply with these new standards.

And now I'd like to turn the next portion of the presentation over to Bruce. Bruce?

BRUCE BAILEY: Hi, this is Bruce Bailey. I work with Tim at the Access Board. I'm going to be talking initially here about the final rule structure and organization. Next slide, please.

One thing to keep in mind is that we're actually addressing two different legal statutes with one set of technical criteria. So this was a combined rulemaking under our two charging statutory authorities, the Rehabilitation Act Section 508-- in the Code of Federal Regulations, it's 29 USC 794-- and the Communication Act under the Telecommunications Act on Section 255. In the CFR, that's 47 USC.

These revised standards are replacing the existing original regulations at 36 CFR Part 1193, which was 255, and part 1194 508. And that's where the old-- when the Code of Federal Regulations is updated, that's where they'll appear is in 1194.

Now, we're really only talking about Section 508 today, but there will be some passing references to 255. And I will confess that, yes, this is a confusing issue for some of our federal partners as well. Because unless you're a telecommunications manufacturer, you're more interested in 508 rather than 255. And it's like, why do we have this extra part in here? And it's because the requirements are the same. The technical requirements are the same no matter which statute that they're being covered by. Next slide, please.

So it's both the revised standards, the revised guidelines, published in the Code of Federal Regulation and as listed in the Federal Register. They actually show up as appendices to 36 CFR. They're listed as appendices, which can be a little bit odd for people when they look at that. We have a nice little illustration on the next slide, 10, of that.

So I've got a little Venn diagram trying to illustrate this thing. So appendix A is your 508 application and scoping chapters, and the chapters 1 and 2 there are noted as E1 and E2. Then there's the common section of functional performance criteria, then the technical chapters and our reference standards. So that's chapters 3, 4, 5, 6, and 7, the overlapping area.

And then the appendix B portion, with the whole what is 255, that's the application and scoping. So that's going to be noted as chapters C1 and C2 if you're in chapters 1 and 2 for 255.

Coming back to the charging statute-- next slide, please-- it's also sometimes helpful for us to draw distinctions between what's the law and what are the standards. The statute, Section 508 of the Rehabilitation Act, originally in 1973. So that's how long there's been something about accessible technology-- is back in 1973 as amended. The last amendment was 1998 with the Workforce Improvement Act, I think it was, and where there was the direction for the Access Board to develop standards to delineate what it meant for technology to be accessible.

And then the reference here is the 29 USC again, 794. The actual heading of that section is Section 794(d), Electronic and Information Technology. So they charged the Access Board to develop these standards, GSA to provide technical assistance, and that statute directs agencies to implement the guidelines six months after the Access Board publishes those.

The standards-- that's the part my agency controls and can update as periodically as we needed-- those are the actual requirements. What are the details for information communications technology to be accessible? That's the 36 CFR part 1194. That 1194

number, if you follow 508, people are pretty familiar with that, just where that number is and were hearing that number before.

We're charged to come up with technical standards and functional performance criteria, so we have those divisions in the standards. And again, the Access Board develops these standards, and we promulgate the standards. We provide technical assistance on those standards and answer questions from all comers about what's in those standards. Agencies themselves are charged with implementing.

Now, I'll mention one group that's not on here is anyone outside of the federal government. The 508 standards are requirements that the federal government puts on itself for the procurement of information communications technology. Lots of other folks are impacted and follow those standards, but technically, by the way, it just applies to the federal government. Next slide, please.

So let's get a little bit more linear from my illustration about what's going to be in the Code of Federal Regulations once it's updated. There'll be the four appendices. Appendix A is 508 chapter 1, application and administration; 508 chapter 2, scoping. Appendix B will be 255 chapter 1 of application and administration; 255 chapter 2, scoping. Next slide, please.

Appendix C, the part that people are probably most interested in-- the chapter 3, functional performance criteria; chapter 4, hardware; chapter 5, software; chapter 6, support documentation and services; and chapter 7 is a collection of the referenced standards. It's just the citations. And then also, because we have a pretty generous safe harbor clause, if you will, which Tim will be talking about in a minute, we needed to reprint the original 508 standards from 2000. So that'll be Appendix D in CFR 1194.

So finally, putting it all together, slide 14, all seven of these chapters are the 508 standards put together. Chapter 1, application and administration; chapter 2, the scoping; chapter 3, functional performance criteria; chapter 4, hardware; chapter 5, software; chapter 6, support documentation and services; chapter 7, referenced standards. These, just as a one coherent document-- and we'll have versions of this available on our website as kind of a standalone version for printing-- would be the seven chapters just as a standalone document rather than trying to navigate the different appendices. And so with that, let me turn it over to Tim to talk about key changes and issues from original 508.

**TIMOTHY
CREAGAN:**

Thank you, Bruce. We're on slide 14, key changes and issues from original 508. Next slide, please.

OK, so what we're doing is we're comparing the final rule, which is dated 2017, to the 2000 original 508 rule. First of all, the biggest, most obvious change is in the revised rule we have the broad application of WCAG 2.0. And that's most obvious in the discussion of what is covered in electronic content.

Secondly, we have a new safe harbor provision for Legacy ICT. This is an exception for content and ICT which is conformant with the 2000 508 standards up through January 17 of 2018. I'll talk about that more in a moment.

Finally, we have the functional performance criteria. We made a few changes. And then finally, the question of how to treat ICT with closed functionality. And a subset of that is, what about mobile telecommunications? Let's move on to the next slide, slide 16.

Broad application of WCAG 2.0-- so first of all, we're talking about the Web Content Accessibility Guidelines, WCAG, 2.0 Level A and AA Success Criteria and Conformance Requirements. This is an international standard, WCAG 2.0, which the Access Board has chosen to incorporate by reference into the revised 508 standards.

Although the WCAG success criteria-- there is Level A, Level AA, and there's a few Level AAA requirements-- we have chosen to only adopt Level A and Level AA as requirements. Agencies are free to always add additional requirements. So they choose to voluntarily add the level AAA conformance requirements, but they're not required to. To be conformant with the revised 508 standards, they have to follow Level A and Level AA success criteria.

And these will be applied to web content. One example would be online instructional materials, covered non-web documents-- that is, again, instructional materials. We're using this as an example from a presentation we did for a federal agency that does a lot of training, obviously. And then finally, software user interfaces. Again, this would be like a learning management system. So these are examples of ICT where WCAG 2.0 would be applied.

Notice that what we're doing in applying WCAG 2.0 as written only applies to web and web content. Whereas what we're doing in this incorporation by reference, we're broadening the scope of the application of WCAG to both web content and non-web documents. OK, next slide, please.

Here is another one of Bruce's favorite little Venn diagrams or little graphics. And so what this is is this is supposed to illustrate how this rule works. So what you have is the largest universe in this world is the 508/255 rule. And of that, a subset of it is the WCAG 2.0 Level A and Level AA success requirements, here represented by little circles. On the outside of the big circle are the WCAG 2.0 AAA requirements, just graphically illustrating again that the AAA requirements are not required under the 508/255 rules. Next slide.

OK, slide 18, so we're talking about WCAG 2.0 incorporation by reference. And the way this is done is when you look at the technical requirements there are specific citations to WCAG 2.0 in our regulations. So as you noticed when Bruce went over the outline of the 508 standards, there's seven chapters. And one of the things we're emphasizing to all of our audiences is the revised 508 standards are very much-- they go linearly from one to the end.

So in this case, first of all, you would always look to your chapter 1 application and administration and see if this law applies to a federal agency. Am I a federal agency? Yes/No. Do I meet the definitions that are in this section? Yes/No. And assuming yes, you proceed to chapter 2, which is where you have your scoping requirements, which talks about where you go to look for more technical requirements.

So in this case, you would go to 508 chapter 2, which is the scoping chapter. And you would immediately notice that there are two references under electronic content, for example, telling you that under E205.4, the accessibility standard used for electronic content, which the parent is E205, references WCAG 2.0 as the standard that you use when creating electronic content.

Similarly, under E207, which is the parent provision in the scoping chapter for software, you see that you use WCAG conformance requirements under E207.2. When you then go to chapter 5 for software, you'll see that there is a specific reference to WCAG 2.0 under provision 504 for authoring tools. And in chapter 6, support documentation and services, there's a specific reference to the WCAG standards under 602.3 covering electronic support documentation. So this is just an overview of where WCAG is specifically referenced in the standards. OK, next slide, please.

A little bit of specifics-- WCAG 2.0 incorporation by reference for electronic content. So what this says, E205.4 accessibility standards. So the provisions right above this, under E205, leading up to this, talk about the different types of electronic content. There's public facing, which must be accessible. And then there is federal content which meets the-- otherwise

referred to as agency official communications-- which meets the nine specified categories. And then there's an exception, and then underneath that it says the accessibility standard that applies to all this content. What it says is electronic content shall conform to Level A and Level AA success criteria and conformance requirements in WCAG 2.0.

And then there's a paragraph that says incorporated by reference, see 702.10.1. So when you flip through the chapter, 702 means it's in chapter 7. Chapter 7 is a listing of all the standards that are incorporated by reference in the revised 508 standards. And the reference to WCAG 2.0, with its specific website URL and so forth, is 702.10.1.

You will find, when you read through the standards, any time we specifically reference a particular standard-- and there are 10 standards referenced-- you will see the incorporation by reference paragraph with a citation to the specific number in chapter 7. And there you can get more information about that particular rule. The material is available online.

So under the electronic content provision there's an exception for non-web documents. And there's four success criteria from the original WCAG that have been modified, because they address sets of web pages. So those particular four success criteria didn't completely transfer, so we have an exception for them in E205.4.

Then also, E205.4.1 details the word substitution you need to do to apply WCAG 2.0 to non-web documents. Remember, WCAG was written for the web, and we're expanding the application of WCAG 2.0 to non-web content. And so therefore we had to put language in our provisions explaining any amendments you need to do to the language. Next slide, please.

Similarly, we have WCAG 2.0 incorporation by reference citations for software. Again, you're in chapter 2, scoping. So E is your prefix for 508 scoping-- E and then the 200 series. So in this case, it's E207.2 WCAG conformance. The parent for this, E207, is for software. And then E207.2 is a child provision, which talks about WCAG conformance applying to software.

And so it tells you that when you have user interface components, as well as the content of platforms and applications, shall conform to Level A and Level AA success criteria and conformance requirements in WCAG 2.0. Then you have your parenthetical. And then you have your reference to the incorporation by reference with a citation to chapter 7, which we've covered in the previous slide. Again, it's the same citation to the same URL for WCAG.

The reason we do this is so that when we refer to a specific standard people can go, well,

where do I get a copy of this? They can go to that 702.10.1, and they'll find the URL and/or the mailing address and contact information for that standard.

Now, the WCAG conformance provision for software talks about exceptions, word substitution, and a rewrite of the WCAG conformance requirements, just like you saw in the chapter on content. So it's a very similar approach, like what you had with E205.4, but instead of documents, you're applying it to software. The mechanics of the word substitution are a little more involved, and there's also an exception for software that is assistive technology. Next slide, please.

Now we're on slide 21. We'll talk about the delineation of covered electronic content. I mentioned this briefly, and I'm going to go over this in a little bit more detail. This is only for the revised 508 standards. So in the new rule, in these revised 508 standards, we've been very careful to detail what is covered electronic content and how it is addressed.

So first of all, we say any public-facing content-- that's E205.2, public facing content-- that is public facing shall conform to these requirements. So what that means is for an agency, any public-facing content-- your agency website, your agency social media accounts, anything you have posted out there for the general public is considered public-facing content, and it needs to be accessible.

Secondly, under E205.3, there's agency official communication. Now, this is typically inward-facing, or content that is not broadly available to the public, but it fits in one of nine enumerated categories. And we'll go to the next slide to take a quick look at that. Next slide, please.

So E205.3-- agency official communication. You have nine categories here, A through I. So for example, the first one is A, an emergency notification. So what that means is if an agency puts out-- let's say that you're an employee working at your desk with your desktop PC open. And the agency submits some sort of emergency notification, so something that pops up on screen or a noise or something like that.

They have to make sure that that emergency notification is accessible. And it has to be made accessible using the WCAG 2.0 success criteria. And each of the remaining eight categories and items have to follow a similar criteria.

So you will notice, for example, number H, which is educational and training materials. Again,

this is materials, for example, for training employees. That would need to be made accessible. And then finally, I, which is internet content designed as a web page.

These specific nine categories are designed, and we received a lot of public comment on them when we proposed them. We got a lot of feedback. There was general agreement that this would be the most productive, the most useful types of content which need to be made accessible from the get-go.

Remember that under 508, you always, always have additional responsibilities as an agency. You always have responsibilities under Section 501 for your employees. And you also have responsibilities for members of the general public under Section 504, which may exceed the base requirements for accessibility under 508. So you may need to provide accommodations for employees and members of the general public under 501 and 504 respectively. But today we're just talking about the requirements under 508, which are essentially the minimum you must do.

Remember, for each of these nine categories there is a specific exception for NARA, the National Archives, because they receive a lot of content in the course of their job. They do not have to make that content accessible unless they choose to post that themselves on a public-facing website. Next slide, please.

OK, we're now on slide 23, the safe harbor provision in the revised standards. This is in the general exceptions category. It's under E202.2. And the language says, "any component or portion of existing ICT that complies with an earlier standard issued pursuant to Section 508 of the Rehabilitation Act of 1973, as amended, and that has not been altered on or after January 18, 2018, shall not be required to be modified to conform to the revised 508 standards." That's the text of the provision.

What this means is any ICT that an agency has-- whether it's content on your website, or whether it's ICT that's been in use in the office-- as long as it meets the 508 standards that are in effect from 2000, on January 17, 2018, the next day when it becomes January 18, 2018, all of that conformant ICT is grandfathered in until and unless you change or modify it. And please note that the terms existing ICT and alteration are defined in our chapter 1 of scoping, which is E103.4.

So essentially, what it's saying is that an alteration is a change to existing ICT that affects the interoperability, the user interface, or access information and data. So if there was a typo, for

example, a typographical error in a document, and they just fixed the typo, that would not be considered an alteration under the definition, because it doesn't affect the user interface or the interoperability of the information and data. Whereas if you change, say, the contrast on a document, that would affect the user interface and the access to information. So that would trigger the alterations and the requirements to update and revise the materials to conform to the new standards. OK, next slide, please.

We mentioned earlier in changes, Functional Performance Criteria, otherwise known as the FPC. We added an FPC to address cognitive accessibility. That's found in provision 302.9. It's new to the revised 508 standards. It was already in the original 255 guidelines, and this now harmonizes with the European Union standard, which is known as EN 301 549.

So remember, at the beginning of the presentation we said one of our interests in updating the 508 standards was to harmonize with international markets and be aware of trends going around the world. The European Union, which came out with their standards shortly before ours, was obviously focused on the same issues. And we had a lot of cooperation and sharing of information on these common issues. So the FPC for cognitive accessibility reflects that interest in harmonization.

Similarly, we modified the FPC for limited hearing, 302.5, and limited vision, 302.2, in response to comments we received in response to our NPRM, next to final rule. And again, this is to harmonize with the European standard. Next slide, please.

The FPC are only to be used when the technical requirements in chapter 4 or chapter 5, hardware or software, do not address the function, and/or when assessing a claim of equivalent facilitation. So their usage is very strict and limited. That was something else that we clarified in the new rule. Next slide, slide 26, ICT with closed functionality.

Closed functionality is a new provision we added. We talked about self-contained closed products of the category, and now we talk about closed functionality as a feature of a product. Because we recognize that closed functionality is something that either may be inherent in the design of a product, or may be something that is imposed upon a product for various reasons - security, for example. So 402 is where you see the provisions for closed functionality, and it has five subsections. It's quite an extensive provision, and it has explicit requirements for speech output.

I'll just give a heads up and say that at the end of July we're going to be giving a webinar on

our webinar series where we're going to be going through all the provisions in chapter 4 in greater detail, including this section on closed functionality. For today's purposes I'm just flagging you to it, and it's just something to take a look at. Because it's very detailed, and it has a lot of application.

Similarly, 402.2, which is a subset of closed functionality, talks about speech output enabled. So one example is that ICT with a display screen shall be speech output enabled for full and independent use by individuals with vision impairment. Now, having said that, there are six exceptions to this provision and then five subsections. And the numbering scheme is 402.2.1 through 402.2.5.

The reason I bring this up is because, again, remember, the way this rule is written it's sequential. It goes in order, and the subprovisions where you have, say, three subprovisions, 2.2.1 is subservient to a provision that only has one sub, such as 402.2 So it's very important in interpreting to make sure that the one modifies the other.

Let's restate this point also so that people don't think, well, I go and cherry pick a provision in one section and say, well, it says it doesn't apply here, so therefore I'm going to apply this to the whole chapter. That may not necessarily be the case. OK, next slide, please. I'll just wrap up my discussion here.

What about mobile? Mobile does not have a separate section or chapter, because we did think about mobile technology throughout the entire rule-making process, and it's really covered. First of all, mobile phones are hardware, so they're covered under Chapter 4, and mobile applications are software. They're not unique because they're used on mobile platforms They're still software. So the chapter 2 citation to WCAG for software, E207.2, applies to mobile, and you look at chapter 5 provisions for software. Next slide, please.

Do phones have to be speech output enabled? And the answer is yes. Under revised section 502, all 402 closed functionality applies, including 402.2, speech output enabled. Next slide.

And then finally, the bigger provision, 402 closed functionality-- closed functionality applies to ICT, such as phones and kiosks. And then several provisions in chapter 4 have exceptions for personalized ICT. For example, there's a provision for Braille instructions, 402.2.5, and it notes that devices for personal use shall not be required to conform to 402.2.5. So that means that if the agency procures for you an iPhone for your use, it does not have to have Braille

instructions on that device.

This was a quick overview of some of the major changes. Now Bruce is going to talk about why we use WCAG 2.0 in the revised section 508 standards. Bruce?

BRUCE BAILEY: Thank you, Tim, and especially what are the benefits. And I'll note for Emily's and everyone's benefit, it looks like we're right exactly on schedule. So don't be shy in putting your questions in there. We should be getting to those right on time.

So I want to talk-- next slide-- about what are the benefits of using WCAG 2.0. And I'm going to talk about these kind of in three different categories. One is that it's an internationally recognized standard. Two is that it addresses gaps that the original 508 standards were not capturing, things that are important to accessibility that weren't failures against the original 508 standards. And then lastly is the robust technical assistance that's available in the WCAG 2.0, and our resource links talk about that. I don't think we'll be able to talk too much about that specifically, but that's one that is a huge, huge thing with WCAG 2.0.

So next slide-- WCAG 2.0 was finalized in December of 2008. It's been in wide use since then and actually became an ISO standard in 2012. So continuous activity and interest in WCAG 2.0 for that whole entire time, which is why they went and proceeded with the ISO vetting process, because that was important for some countries being able to adopt it.

And one of the questions I saw pop up on the chat screen was, how well does the 508 rule harmonize with what they're doing in Canada? And I'm pleased to say it harmonizes great, because Canada and Ontario, they are also using the WCAG 2.0 benchmark as their standard of what they are requiring. And in fact, that's pretty much universal for any government organization that's looking at web accessibility standards.

They're using WCAG 2.0 AA as the basic metric for that in about nine out of the 10 cases. I think there's actually some group in Canada that's not requiring captioning on their live multimedia, so it's like everything in WCAG AA except for live captioning. So it's working out really, really well to have this one set of requirements that's used in so many different places.

Now, one of the things that we did that was a little bit radical with our proposed rule is that we recommended or we proposed that the revised 508 standards would use WCAG not just for web content but for other things as well. That you could apply these Level A and AA success criteria and conformance requirements to non-web documents and to software user

interfaces. That was met with quite a bit of skepticism.

But I'm happy to say that there was kind of a spontaneous formation of an industry group challenging that idea. And they met for about two years and produced a report. And they said, yes, you know what? You go through the success criteria line by line, and they do in fact work. So that's what we had in our second notice of proposed rulemaking, as well, and then in the final rules. So there really wasn't much changes in there, just some tightening up of the language.

And we like to point out that this is completely consistent and harmonized with what's going on in the other large initiative for talking about ICT accessibility, namely this European standard, EN 301 549. For example, the Canadian requirements I mentioned, they're just limited to content. WCAG is limited to content. But for 508 and EN 301 549, we've got to talk about all kinds of ICT, and our requirements are very much compatible with their requirements.

Next, go onto the next section, next slide, 34, thank you. There's many examples of things that are success criteria that are in WCAG 2.0 that don't have direct parallels to the original 508 requirements that you might find in 1194.22. I'm just going to hit on six of these-- so low-contrast text, meaningful sequence, fixed text size, success criteria for clarity and consistency, requirements for site navigation, and requirements to help users correct mistakes. So these are getting into all things with low vision, a little bit of blindness issues, and a lot of cognitive issues-- several cognitive requirements that original 508 doesn't address. Next slide, slide 35, please.

So the problem of low-contrast text is, of course, very big for people with low vision. And the original 508 1194.21 had something in there that was a software requirement, so (j), the requirement to provide "a variety of color selections capable of producing a range of contrast levels." And the problems with that approach is that, one, it's only scoped to software. It's not scoped to content or web or other documents, so that's a little limited.

As with several other provisions in original 508, it's a little bit ambiguous in that it's not sufficiently testable. There's no criteria, no metrics, nothing you can serve as a kind of a ruler within the provision itself. And this one in particular, it might not even meet the objective. Because even with a range of contrast levels, there's a possibility that they're all of low contrast, and none are providing good high contrast.

And then it had kind of a big out with it as well, because it was only required if "a product

permits a user to adjust color and contrast settings." So the easiest way for software to pass this requirement in the original 508 is just not to have a feature to adjust contrast at all, and then the whole provision wasn't applicable. Next slide, 36.

So for low contrast in WCAG, we have a specific metric, and it's important and valuable to do so. That particular success criterion, 143, has a number from a mathematical formula for calculating a contrast ratio between foreground and background colors. It's a little bit of a complicated formula, but there's eyedropper tools and other online web calculators that will do this for you.

If you're a web developer, you have access to the hexadecimal number or the decimal numbers you're using to create your colors, so that's a known factor. You plug in these two colors, and you get a number. So it's quite workable.

And then I have a couple counterexamples here of why it's nice to have a specific number. With my text fading from black to very, very light gray, where is the cutoff? Where does this text contrast with the white background-- at what point am I not sufficiently doing enough? And the number would actually pull something up.

And then we'll have a suggestion here that one thing that's very nice about the way the WCAG formula works in 143 is you don't really have to be paying attention to any particular colorblindness combinations, like your reds and your greens, or your browns and oranges. Because if you have sufficient contrast between your reddish color and your greenish color, you don't need to worry that those are confusable, because one will be dark and one will be light. But the other suggestion we've put on here, even if you use a nice dark red that passes against the WCAG success criteria, that still remains a little bit of a problematic color for many people with low vision issues. But in any case, use the number. Next slide, please.

My other example, the second example I have here is about meaningful sequence. And the original 508 standards have no requirement for ensuring a logical reading order. The WCAG 2.0 success criteria 1.3.2, meaningful sequence, reads that "when the sequence in which content is presented affects its meaning, a correct reading sequence can be programmatically determined." And next slide I have an example of that.

So I've got some two-column text in typical newspaper style. I won't read the whole thing here, but I'll get us started. You'll recognize it right away-- "Four score and seven years ago our fathers brought forth on this continent a new nation, conceived in liberty, and dedicated to the

proposition that all men are created equal."

Now, if this is presented newspaper style but not coded correctly-- let's go onto the next slide-- and I'll read for you what somebody using a screen reader might hear instead for that first sentence. "Four score and seven years ago, so dedicated, can long endure. Our fathers brought forth on this. We are met on a great battlefield continent a new nation, conceived of that war." So what's just happened there is my two columns slid together.

The columns were not programmatically determinable, so the screen reading software just reads across the columns, because it's just separated by white space. It doesn't care about spaces between words as word delimiters. It doesn't realize that they're supposed to be paragraph delimiters. And so it just runs all that together, and it's quite impossible to make sense of something like that. Next slide, please, slide 40.

Another very fundamental issue is having a good font size. Original 508 standards don't have a technical requirement about font resizing or minimum font size. In the revised standards, through the citation to WCAG 2.0, success criteria 1.4.4 in this case, resized text requires that "text can be resized without assistive technology up to 200% without loss of content or functionality." And this is the only success criteria that mentions you have to be able to do this without relying on assistive technology. Assistive technology can be very good for very many things, but just having some basic core requirement of supporting zoom is so important for people with low vision.

And most browsers can do this now because the zoom feature has been so important that most of the browsers build that in, and the web author doesn't have to do anything. But actually, it's still possible to design your pages so the zoom function doesn't work completely correctly.

And I mention three examples here of how to apply this, like the W3C. The WIA page talks about font resizing and some of their help. They support zooming with just the text sizing within the web browser.

Another great website is our friends actually in the building that we're in, the National Center on Disability, ncd.gov. They actually have a widget that lets you pick out the font and pick out the font size, so that's really a very nice approach. And then google.com/advanced_search doesn't work so well with just setting the text size in the browser, but it does work extremely

well for browser zoom.

Next slide, 41. One of the new requirements that we get out of WCAG 2.0 are some requirements for clarity and consistency. They help everyone. They help people with low vision. They help people with cognitive issues. 3.2.3, consistent navigation, reads that "navigation mechanisms that are repeated on multiple web pages within a set of web pages occur in the same relative order each time they are repeated, unless a change is initiated by the user."

And you think about that, you read out loud, it's like, well, why would you ever-- why do you need this? It seems like if you're putting navigation elements in the page, of course you try to have them arranged in the same order. I mean, what's the point of having menus where the items within the menus change? And yes, so this is codifying what's a best practice.

Next slide-- focus order. "If a web page can be navigated sequentially and the navigation sequence affects meaning or operation, focusable components receive focus in an order that preserves meaning and operability." Again, a pretty basic thing for somebody who's navigating using the Tab key, or somebody's who's using a screen reader, and also can help people with cognitive issues again, as well, and something that's not specifically a requirement in the original 508 standards.

Next slide, my next to last example here, is headings and labels, 2.4.6. The headings and labels describe topic or purpose. There's not a requirement to use headings and labels. That was a AAA thing, so it's just kind of a nice thing to do, but it's not a requirement within 508 or within WCAG AA. But yes, if you have headings and labels, that they describe the topic or purpose, which is still pretty open ended, but why else are you putting those headings and labels in there unless they're descriptive?

Next, and next and last slide for my section here, the last example is error suggestion, 3.3.3. "If an input error is automatically detected and suggestions for corrections are known, then the suggestions are provided to the user unless it would jeopardize the security or purpose of the content." Tim likes to give the example of the spelling test. You can't hint that out or it won't be accessible.

So with that, we're going to go and try and hit on some questions for 15 minutes or so. Thank you.

LILY BOND: Thank you so much, Bruce and Tim. We have a lot of questions coming in, and I want to encourage people to continue to ask them. The first question we have here is, how will WCAG 2.1 and future versions of WCAG affect the 508 refresh?

BRUCE BAILEY: That's a great question. We get that a lot, and it doesn't affect 508 at all. The 508 citation is to the date certain version of WCAG, December 8--

**TIMOTHY
CREAGAN:**

BRUCE BAILEY: 11, thank you. So it doesn't matter what the W3C does in-- I mean, I don't want to say it doesn't matter, because the 2.1 will be interesting. It'll have more best practices. It will have valuable things to do for accessibility, same thing with 3.0.

But those won't be requirements under 508 until there's another rulemaking. So you're talking four, five, six years out. We're not in any hurry. 2.1 and 3.0-- the ink hasn't even started to be dry on those things yet.

So one of the things I always try to remember to start out with is that what you have to do for accessibility or what you can do for accessibility doesn't change just because the standards and our work has been updated. All our work is doing is kind of codifying the minimum set of best practices.

But our stuff is important because it's requirements. It has the force of law. But ours is to the date certain version, so none of that changes just because 2.1 gets published.

**TIMOTHY
CREAGAN:** And this is Tim. I'll just add to this. Remember, during the course of the presentation we looked at the language that got incorporated by reference, and there would be a reference to chapter 7. What you would do-- the date certain Bruce is talking about is listed in the standards that are listed in chapter 7. So in case of WCAG, like we said before, it's the December 11, 2008, which is the final version of WCAG 2.0. That's what our citation is to.

LILY BOND: Great. Thank you both so much. There are several questions about PDFs and whether non-web content refers to documents linked on a web page, like PDFs or Word docs, and if so, which guidelines are to be followed.

BRUCE BAILEY: So your public-facing documents-- how easily can you slide back to our-- where was it?

LILY BOND: Give me a slide number.

TIMOTHY Sure. You want to go to slide 22, I think.

CREAGAN:

BRUCE BAILEY: Might be 23 by your numbering.

TIMOTHY Oh.

CREAGAN:

BRUCE BAILEY: Next one.

TIMOTHY Well, that's safe harbor. OK, yeah.

CREAGAN:

BRUCE BAILEY: 24.

TIMOTHY Do you want the one with the public facing?

CREAGAN:

BRUCE BAILEY: Yes.

TIMOTHY Yeah, go back one more slide. One more. Yeah, there you go, that slide, slide 21.

CREAGAN:

BRUCE BAILEY: OK. So the E205.2 citation is to WCAG 2.0, and then within there is an exception for things that are non-web documents. So if it's on a public-facing web site, according to WCAG 2.0, it's web content, so you apply all of WCAG 2.0 AA. It gets a little bit odd in that if it's an internal document shared by email-- it's the same PDF, it goes out by email-- the sets of web pages requirements don't apply. If that same PDF attachment's on the web, though, they do.

But odds are they're not applicable anyway because it's a standalone PDF and not part of a set of web pages. So I may have made that more complicated than it needs to be. But pretty much if it's covered, you just use WCAG 2.0 AA. It works fine for PDFs and Word documents and just about anything you'll find posted on a website.

TIMOTHY This is Tim. As a parenthetical, there's a lot of good technical assistance on the Section 508

CREAGAN: .gov page. It's www.section508.gov. There's a link to best practices, and there's examples of how to make different types of document formats successful-- Word, PDF, and Excel.

BRUCE BAILEY: And this is Bruce again. In the W3C resources, they include PDF techniques right along with ARIA techniques or CSS techniques or HTML techniques. So there's lots there for PDF-- not so much for Word, but PDFs are there. And as Tim mentioned, the section508.gov site has some materials for Word and Excel and PowerPoint.

LILY BOND: Great, thank you. Another question here is about-- several people have been asking whether or not-- sorry. If a public university receives federal funds, do they need to comply with Section 508?

TIMOTHY CREAGAN: OK, this is Tim. That's a great question. We've been getting that question a lot, actually. And the answer is 508 on its face only applies to federal agencies when they procure, use, develop, or maintain information or communications technology. So when we updated the 508 standards, none of the application changed. So therefore, if you're not a federal agency, what do you do? Well, 504, Section 504 talks about receiving federal funds.

So the question is, if I receive federal funds, what do I have to do to make my website successful? So the best answer is to go to your funding source, who may be a federal agency, and say, what do you want us to do?

As an example, just as an example, some grantees under Medicaid/Medicare, when they enter into a contractual relationship with Medicaid/Medicare to receive federal funds, as part of that deliverable they're producing online web content. As part of their contract Medicaid/Medicare may require them to produce content that is conformant with the Section 508 standards. But again, that's something you have to ask your funding source-- whether or not you're supposed to apply the 508 technical standards to yourself.

Similarly with education. 508 does not apply to public universities on its face. However, the Americans with Disabilities Act, Title II for state and local governments and for public universities, and Title III for places of public accommodation and private universities, has said that the programmatic activity should be effectively communicated.

Now, the Department of Justice, which is responsible for enforcing Title II and Title III of the ADA, has given technical assistance, which is posted on their website www.ada.gov, which has indicated that state and local governments should use the 508 standards at the present time for making accessible contact. So our best recommendation is that you should consult with the Department of Justice as to what the requirements are.

As a best practice, it's probably a good idea to use the 508 standards, but it's not mandated at this point. However, you will notice that if you look at various rulings that have come down, even as recently as this week-- the Winn-Dixie case, which came out of Florida-- has indicated that web accessibility is a very important concern, and it's something that is going to be required.

So it may very well be that as a best practice you want to follow the Section 508 standards, or maybe you only adhere to the WCAG web content accessibility guidelines. Again, this is something you should consult with either DOJ or with your agency's funding source.

LILY BOND: Thank you so much, Tim. Another question here-- is it possible that the revised 508 standards will be updated sooner rather than later due to the nature of web evolving almost annually?

TIMOTHY Bruce?

CREAGAN:

BRUCE BAILEY: I just want to say no.

[LAUGHTER]

And come back up to-- slide 20 was the one that talked about the differences between a PDF and a Word document, an HTML document. Thank you.

So yeah, we move at the speed of government, which is a good thing much of the time. But what you really have to do for web accessibility-- and WCAG 2.0 is really written pretty well that it's catching most of the things that people need to do. So we will not be updating very quickly at all. In terms of one or two years, no, no way. Five, six years, maybe, but it won't be a surprise to anyone, because we would have to-- we'd probably form another advisory committee. We'd do another notice of proposed rule making.

Please just start using WCAG 2.0. It works really pretty well. And again, the nature of the support documentation is like the guidance material that talks about ARIA techniques and such. Those are always being consistently added to. And in all this time, there's nothing in WCAG 2.0 that people are like, well, that was dumb. This thing's not helpful.

That was an issue with the original 508 standards pretty early on. Whereas the WCAG 2.0, yeah, maybe it could do more for cognitive or low vision or mobile, but there's nothing in it right

now that, in all this time, that anybody's actually found that is harmful. So it's really pretty good.

LILY BOND: Thank you so much. Another question here-- I think we have time for one and maybe two more. If you make an external document accessible and it is copyrighted material, are you violating copyright by making these changes?

BRUCE BAILEY: Well, is it the Javits legislation? Where this usually comes up is with adding captions to stuff that you don't have copyright of the multimedia. But the folks that work to provide alternative formats or electronic formats of books and other copyrighted materials, and in fact the Librarian of Congress came out a few years ago and explicitly had-- I think it's on the loc.gov website-- a statement about how copyright does not protect you against making materials accessible. It was great when he did this. I wish I had the better citation for you.

But there's very broad-- anyway, those organizations that produce these alternative materials, they've never had trouble with-- well, they may have had trouble, but they've never had legal trouble with copyright issues. They'll have people that have their materials locked down, but they've been able to go ahead and make the materials accessible in any case. So I don't think that's a realistic concern.

LILY BOND: Thank you so much, Bruce. I think we have time for one final question. I know you both have to go shortly. Someone is asking, how does this refresh apply for a local governmental agency receiving funding from HUD? Can you point out the specific language in the bill if so?

**TIMOTHY
CREAGAN:** What I would do is I would refer you specifically to chapter 1, 508, where it talks about-- E101, purpose, and E102.1, application. And it says that the standards apply to federal agencies. So that, first of all, gives you a first-- excuse me, it's E101.1, purpose.

And I'll skip to the relevant language. It says, "compliance with these standards is mandatory for federal agencies subject to Section 508 of the Rehabilitation Act of 1973 as amended, 29 USC 794(d). So right there, local, state agency, no, this does not apply to them.

As I said before, you're going to be looking to the Americans with Disabilities Act, Title II, state and local governments, which is going to be governing your programmatic activity. And as I said before, the Department of Justice has given advice. And on its ADA website there is actually a bulletin for making state and local government websites accessible. And in that bulletin, it specifically says use 508 standards.

BRUCE BAILEY: Emily, let me ask you to take us out to slide 51, which has our email address. I know we didn't

get to questions. I'm sure Emily would be happy to forward any questions she has here, and we're very much open to email questions.

LILY BOND:

Great. Thank you so much, Bruce and Tim. Your presentation was phenomenal, and our audience was just so grateful for your expertise and knowledge. Thank you so much for being here today.