Welcome to the Section 508 Best Practices Webinar Series

The Session is Scheduled to begin at 1:00pm Eastern Time
We will be testing sound quality periodically

Audio and Visual are provided through the on-line webinar system. This session is closed captioned. Individuals may also listen via telephone by dialing

1-712-432-3066 Access code 246112 (This is **not** a Toll Free number)

The content and materials of this training are property of the presenters and sponsors and cannot be used without permission. For permission to use training content or obtain copies of materials used as part of this program please contact us by email at info@adaconferences.org or toll free (877)232-1990 (V/TTY)

www.adaconferences.org/CIOC

A collaborative program between the

Accessibility Community of Practice of the CIO Council and

The U.S. Access Board

Listening to the Webinar

- The audio for today's webinar is being broadcast through your computer. Please make sure your speakers are turned on or your headphones are plugged in.
- You can control the audio broadcast via the Audio & Video panel. You can adjust the sound by "sliding" the sound bar left or right.
- If you are having sound quality problems check your audio controls by going through the Audio Wizard which is accessed by selecting the microphone icon on the Audio & Video panel

2

Listening to the Webinar, *continued*

If you do not have sound capabilities on your computer or prefer to listen by phone, dial:

1-712-432-3066

Pass Code:
246112

This is **not** a Toll Free number

3

Listening to the Webinar, *continued*

MOBILE Users (iPhone, iPad, or Android device (including Kindle Fire HD))

Individuals may listen** to the session using the Blackboard Collaborate Mobile App (Available Free from the Apple Store, Google Play or Amazon)

**Closed Captioning is not visible via the Mobile App and limited accessibility for screen reader/Voiceover users

4

Captioning

- Real-time captioning is provided during this webinar.
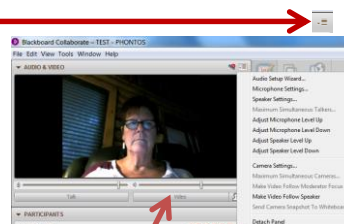- The caption screen can be accessed by choosing the ⬚ icon in the Audio & Video panel.

- Once selected you will have the option to resize the captioning window, change the font size and save the transcript.

5

Sign Language Interpreter

- Video Sign Language Interpreter is available for this session
- To access the Sign language Choose "Video" from the Audio and Video Panel. This will open a video window.
- To ensure that your system retains focus on the Sign Language Interpreter make sure that **everything** is **unchecked** in the **options menu**

Select Video

6

Submitting Questions

- You may type and submit questions in the Chat Area Text Box or press Control-M and enter text in the Chat Area

- If you are connected via a mobile device you may submit questions in the chat area within the App

- If you are listening by phone and not logged in to the webinar, you may ask questions by emailing them to info@adaconferences.org
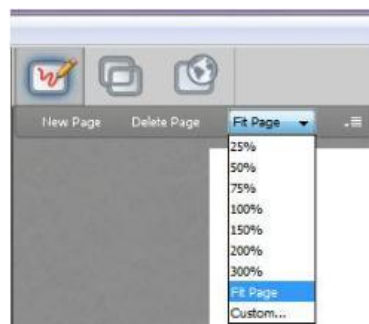
- Please note: This webinar is being recorded and can be accessed on the Section 508 Best Practice Webinar Series website at www.adaconferences.org/CIOC within 24 hours after the conclusion of the session.
-

7

Customize Your View

- Resize the Whiteboard where the Presentation slides are shown to make it smaller or larger by choosing from the drop down menu located above and to the left of the whiteboard. The default is "fit page"

8

Customize Your View continued

- Resize/Reposition the Chat, Participant and Audio & Video panels by "detaching" and using your mouse to reposition or "stretch/shrink". Each panel may be detached using the ▦ icon in the upper right corner of each panel.

9

Technical Assistance

- If you experience any technical difficulties during the webinar:
  - Send a private chat message to the host by double clicking "Great Lakes ADA" in the participant list. A tab titled "Great Lakes ADA" will appear in the chat panel. Type your comment in the text box and "enter" (Keyboard - F6, Arrow up or down to locate "Great Lakes ADA" and select to send a message); or
  - Email info@adaconferences.org ; or
  - Call 877-232-1990 (V/TTY)

10

Welcome

▸ Webinar series:

    "Best Practices in Federal Section 508 Implementation"

◦ This webinar is part of a series. Other presentations can be viewed at:
◦ http://www.adaconferences.org/CIOC/Archives/ and
◦ https://efedlink.org/allqual/resource-shared-webinars.cfm

▸ A best practice is a policy, process, procedure or technique proven effective over time and repeatable by multiple agencies.

▸ A best practice is generalized so that diverse agencies may use it in their own organizations but specific enough to provide useful guidance and instruction.

▸ The CIO Council's Accessibility Community of Practice has published a library of 508 Best Practices at www.Section508.gov

11

Section 508 Best Practices Webinar upcoming DATES for 2017:

▸ Webinars dates will be bi-monthly during 2017.
January, March, May, July, September, November

▸ Next Webinar: May 30, 2017 –
▸ Topic: Old versus New: Original Section 508 Standards (2000) compared to the Revised Section 508 Standards (2017)
▸ Time: 1:00 to 2:30 p.m. ET

Past webinars are ARCHIVED:
· http://www.adaconferences.org/CIOC/Archives
· https://efedlink.org/allqual/collaborate-webex-archive.cfm

12

This webinar is brought to you by:

cio.gov

access–board.gov

13

WCAG 2.0 and the
Revised Section 508 Standards

Bruce Bailey, IT Accessibility Specialist
Timothy Creagan, Senior Accessibility Specialist

March 28, 2017

14

Agenda

- Welcome & Introduction
- Examples of gaps addressed by WCAG 2.0
- How the Revised Section 508 Standards incorporate WCAG 2.0
- Requirements that are essentially unchanged
- Requirements from Original 508 with no direct equivalents
- Resources
- Q & A

15

Examples of gaps addressed by WCAG 2.0

Accessibility issues not well addressed
by the Original 508 EIT Standards –

-- but that are addressed in the Revised 508 ICT Standards
by WCAG 2.0 IBR

16

Problem: Low Contrast Text (1/2)

From original (2000) § 508 1194.21(j):

Provide "a variety of color selections capable of producing a range of contrast levels"
- Scoped only to software, not Web (nor documents)
- Ambiguous:
  - Not sufficiently testable; no measurable criteria provided
- Might not achieve the objective:
  - Even with a "range of contrast levels" there is possibility that none provide sufficiently high contrast
  - Only required if "a product permits a user to adjust color and contrast settings"

17

Problem: Low Contrast Text (2/2)

Having a specific numerical value is important.
> WCAG 2.0 Success Criterion (SC) 1.4.3 specifies a minimum value from formula for calculating a contrast ratio between foreground background colors.

Example:
> Does this text contrast with the white background?

Suggestion: Don't use red text on a white background. Even with a range of contrast levels available, red may still be unreadable to some.

18

Problem: Meaningful Sequence (1/2)

Sample text (*as intended*):

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 we are engaged in a great civil war, testing whether that nation, or any nation so conceived and so dedicated, can long endure. We are met on a great battlefield of that war. We have come to dedicate a portion of that field, as a final resting place for those who here gave their lives that that nation might live. It is altogether fitting and proper that we should do this.

19

Problem: Meaningful Sequence (2/2)

Sample text (*if done wrong*), what AT gets:

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. We have come to in liberty, and dedicated to the dedicate a portion on that field, as proposition that all men are a final resting place for those who created equal. Now we are here gave their lives that that engaged in a great civil war, nation might live. It is altogether testing whether that nation, or fitting and proper that we should any nation so conceived and do this.

20

Problem: Incorrect Language

Correct encoding (English)   **Incorrect Encoding (using French)**

21

Problem: Fixed Size Text

Original (2000) § 508 Standards <u>do not</u> have a technical requirement to support font re-sizing.

Revised (2017): WCAG 2.0 SC 1.4.4 Resize text:
- requires that "text can be resized without assistive technology up to 200 percent without loss of content or functionality."
- Most browsers provide this feature, but pages can still be written in ways that interfere with the feature.
- Examples of different approaches:
   http://www.w3.org/WAI (native)
   http://www.ncd.gov (widget)
   http://www.google.com/advanced_search (browser zoom)

22

Problem: Auto-Play Sound

Original (2000) § 508 Standards do not prohibit or limit music or other sound effects that play automatically.
- Interfere with screen reading software
- Disorient some people with certain cognitive disabilities

Revised (2017): WCAG 2.0 SC 1.4.2 requires user control over audio that would otherwise play automatically
- Annoying for everyone, advertisements are a common example
- Blocking for some people

23

New Requirements for Clarity and Consistency

1.3.3 Sensory Characteristics: Instructions provided for understanding and operating content do not rely solely on sensory characteristics of components such as shape, size, visual location, orientation, or sound.

3.2.3 Consistent Navigation: Navigational 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.

24

Provide Ways to Help Users Navigate, Find Content, and Determine Where They Are

2.4.3 Focus Order: If a Web page can be navigated sequentially and the navigation sequences affect meaning or operation, focusable components receive focus in an order that preserves meaning and operability.

2.4.4 Link Purpose (In Context): The purpose of each link can be determined from the link text alone or from the link text together with its programmatically determined link context, except where the purpose of the link would be ambiguous to users in general.

2.4.5 Multiple Ways: More than one way is available to locate a Web page within a set of Web pages except where the Web Page is the result of, or a step in, a process.

2.4.6 Headings and Labels: Headings and labels describe topic or purpose.

25

New Requirement to Help Users Correct Mistakes

3.3.3 Error Suggestion: If an input error is automatically detected and suggestions for correction are known, then the suggestions are provided to the user, unless it would jeopardize the security or purpose of the content.

3.3.4 Error Prevention (Legal, Financial, Data): For Web pages that cause legal commitments or financial transactions for the user to occur, that modify or delete user-controllable data in data storage systems, or that submit user test responses, at least one of the following is true:
* Reversible: Submissions are reversible.
* Checked: Data entered by the user is checked for input errors and the user is provided an opportunity to correct them.
* Confirmed: A mechanism is available for reviewing, confirming, and correcting information before finalizing the submission.

26

New Requirement to Avoid Bad Syntax

4.1.1 Parsing: In content implemented using markup languages, elements have complete start and end tags, elements are nested according to their specifications, elements do not contain duplicate attributes, and any IDs are unique, except where the specifications allow these features.

27

How the Revised Section 508 Standards
Incorporate WCAG 2.0

28

WCAG 2.0 Incorporation By Reference (IBR)

508/255 Rule — WCAG 2.0 — A — AA — AAA

29

WCAG 2.0 IBR in Revised Section 508: (1/2)

WCAG 2.0 is now incorporated by reference (IBR) into the Revised Section 508 Standards:

- Level A and AA Success Criteria (SC) provide Requirements & Metrics
- Citations include the WCAG 2.0 "Conformance Requirements"

References to WCAG 2.0 Level AA appear 4 times:

- Electronic Content and Software (508 Chapter 2 Scoping)
- Exception for Web Applications (Chapter 5 Software)
- Electronic Support Documentation (Chapter 6)

30

WCAG 2.0 IBR in Revised Section 508: (2/2)

Citations to WCAG 2.0:
- 508 Chapter 2
  E205.4 Accessibility Standard (under E205 Electronic Content)
  E207.2 WCAG Conformance (under E207 Software)
- Chapter 5: Software
  504 Authoring Tools
- Chapter 6: Support Documentation and Services
  602.3 Electronic Support Documentation

31

Requirements that are Essentially Unchanged

32

Requirement for Alternative Text (1/2)

Original (2000) § 508 1194.22(a):
>A text equivalent for every non-text element shall be provided (e.g., via "alt", "longdesc", or in element content).

Revised (2017) WCAG 2.0 SC 1.1.1 Non-text Content:
>All non-text content that is presented to the user has a text alternative that serves the equivalent purpose…

(continued on the next slide)

33

Requirement for Alternative Text (2/2)

WCAG 2.0 SC 1.1.1 Non-text Content:
All non-text content that is presented to the user has a text alternative that serves the equivalent purpose, ***except for the situations listed below.*** These situations of non-text content are addressed differently.
- Controls, Input – additional requirements SC 4.1.1, 4.1.2
- Time-Based Media – additional requirements SC 1.2.1 -1.2.5
- Test – need to avoid invalidating test, so generally describe the content. E.g. "spelling test" rather than "c-o-n-s-e-n-s-u-s"
- Sensory – provide descriptive identification of the experience
- CAPTCHA – describe purpose, provide alternative mode of access
- Decoration, Formatting, Invisible – if pure decoration, then implement it so it can be ignored by AT

34

Requirement for Keyboard Operation

Original (2000) § 508 1194.21(a):

> When software is designed to run on a system that has a keyboard, product functions shall be executable from a keyboard where the function itself or the result of performing a function can be discerned textually.

Revised (2017) WCAG 2.0 SC 2.1.1 Keyboard:

> All functionality of the content is operable through a keyboard interface without requiring specific timings for individual keystrokes, except where the underlying function requires input that depends on the path of the user's movement and not just the endpoints.

35

Requirement for <u>No</u> Keyboard Trap

Original (2000) § 508 – No requirement

Revised (2017) WCAG 2.0 SC – New requirement:
2.1.2 No Keyboard Trap:

> If keyboard focus can be moved to a component of the page using a keyboard interface, then focus can be moved away from that component using only a keyboard interface, and, if it requires more than unmodified arrow or tab keys or other standard exit methods, the user is advised of the method for moving focus away.

36

Requirement to Not Use Color Alone

Original (2000) § 508:

    1194.21(i): Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.

    1194.22(c): Web pages shall be designed so that all information conveyed with color is also available without color, for example from context or markup.

Revised (2017) WCAG 2.0 SC 1.4.1 Use of Color:

    Color is not used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.

37

Requirement to Avoid Inducing Seizures

Original (2000) § 508:

    1194.21(k): Software shall not use flashing or blinking text, objects, or other elements having a flash or blink frequency greater than 2 Hz and lower than 55 Hz.

    1194.22(j): Pages shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.

Revised (2017) WCAG 2.0 SC 2.3.1 Three Flashes or Below Threshold:

    Web pages do not contain anything that flashes more than three times in any one second period, or the flash is below the general flash and red flash thresholds.

38

Requirement to Use Actual Text, Not Pictures of Text

Original (2000) § 508 1194.21(f):
> Textual information shall be provided through operating system functions for displaying text…

Revised (2017) WCAG 2.0 SC 1.4.5 Images of Text:
> If the technologies being used can achieve the visual presentation, text is used to convey information rather than images of text…

39

Requirement for "skip nav" or Similar

Original (2000) § 508 1194.22(o):
> A method shall be provided that permits users to skip repetitive navigation links.

Revised (2017) WCAG 2.0 SC 2.4.1 Bypass Blocks:
> A mechanism is available to bypass blocks of content that are repeated on multiple Web pages.

40

Requirement for Page Titles

Original (2000) § 508 1194.22(i):
>Frames shall be titled with text that facilitates frame identification and navigation.

Revised (2017) WCAG 2.0 SC 2.4.2 Page Titled:
>Web pages have titles that describe topic or purpose.

41

Requirement to Provide Users Control Over Animation

Original (2000) § 508 1194.21(h):
>When animation is displayed, the information shall be displayable in at least one non-animated presentation mode at the option of the user.

Revised (2017) WCAG 2.0 SC 2.2.2 Pause, Stop, Hide:
>For moving, blinking, scrolling, or auto-updating information, all of the following are true:
>- Moving, blinking, scrolling…
>- Auto-updating…

42

Requirement to Provide Users Enough Time to Read and Use Content

Original (2000) § 508 1194.22(p):

> When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.

Revised (2017) WCAG 2.0 SC 2.2.1 Timing Adjustable:

> Timing Adjustable: For each time limit that is set by the content, at least one of the following is true:
> - Turn off…
> - Adjust…
> - Extend…
> - Real-time Exception…
> - Essential Exception…
> - 20 Hour Exception…

43

Requirements for Captioning and Audio Description

Original (2000) § 508	Revised (2017) WCAG 2.0 SC
1194.22(a)	1.2.1 Prerecorded Audio-Only and Video-Only
1194.22(b) and 1194.24(c)	1.2.2 Captions (Prerecorded)
1194.22(b) and 1194.24(c)	1.2.4 Captions (Live)
1194.22(b) and 1194.24(d)	1.2.5 Audio Description (Prerecorded)

44

Requirements for Image Maps and Data Tables

Original (2000) § 508 1194.22

e) Redundant text links shall be provided …

f) Client-side image maps shall be provided…

g) Row and column headers shall be identified for data tables…

h) Markup shall be used…

Revised (2017) WCAG 2.0 SC

1.3.1 Info and Relationships:

Information, structure, and relationships conveyed through presentation can be programmatically determined or are available in text.

45

Requirement for Visible Focus

Original (2000) § 508 1194.21(c):

A well-defined on-screen indication of the current focus shall be provided that moves among interactive interface elements as the input focus changes. The focus shall be programmatically exposed so that assistive technology can track focus and focus changes.

Revised (2017) WCAG 2.0 SC 2.4.7 Focus Visible:

Any keyboard operable user interface has a mode of operation where the keyboard focus indicator is visible.

46

Requirement for Consistent Use of Icons

Original (2000) § 508 1194.21(e):
    When bitmap images are used to identify controls, status indicators, or other programmatic elements, the meaning assigned to those images shall be consistent throughout an application's performance.

Revised (2017) WCAG 2.0 SC 3.2.4 Consistent Identification:
    Components that have the same functionality within a set of Web pages are identified consistently.

47

Requirement for Usable Controls When Changing Settings

Original (2000) § 508:
    1194.21(l): When electronic forms are used, the form shall allow people using assistive technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.

    1194.22(n): When electronic forms are designed to be completed on-line, the form shall allow people using assistive technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.

Revised (2017) WCAG 2.0 SC 3.2.2 On Input:
    Changing the setting of any user interface component does not automatically cause a change of context unless the user has been advised of the behavior before using the component.

48

Requirement to Help Users Avoid Mistakes

Original (2000) § 508:
- 1194.21(l): When electronic forms are used … including all directions and cues.
- 1194.22(n): When electronic forms are designed to be completed on-line … including all directions and cues.

Revised (2017) WCAG 2.0:
- 3.3.1 Error Identification: If an input error is automatically detected, the item that is in error is identified and the error is described to the user in text.
- 3.3.2 Labels or Instructions: Labels or instructions are provided when content requires user input.

49

Requirement for UI Components

Original (2000) § 508 1194.21(d):
Sufficient information about a user interface element including the identity, operation and state of the element shall be available to assistive technology. When an image represents a program element, the information conveyed by the image must also be available in text.

Revised (2017) WCAG 2.0 SC 4.1.2 Name, Role, Value:
For all user interface components (including but not limited to: form elements, links and components generated by scripts), the name and role can be programmatically determined; states, properties, and values that can be set by the user can be programmatically set; and notification of changes to these items is available to user agents, including assistive technologies.

50

Requirements from Original Section 508 with No Direct Equivalents

51

WCAG 2.0 Applies to All Technologies

WCAG 2.0 has no parallel to the Technology-specific requirements in Original § 508 1194.22:

d) Documents shall be organized so they are readable without requiring an associated style sheet.

l) When pages utilize scripting languages to display content, or to create interface elements, the information provided by the script shall be identified with functional text that can be read by assistive technology.

m) When a web page requires that an applet, plug-in or other application be present on the client system to interpret page content, the page must provide a link to a plug-in or applet that complies with §1194.21(a) through (l).

52

Why Drop These Technology-Specific Requirements in Original § 508 1194.22?

From **NPRM**, Preamble, Part III, Major Issues, B. 4:

d) Readable without requiring an associated style sheet
   Counter productive as CSS is well supported by AT, and useful to everyone, including users of AT
l) JavaScript must be identified with functional text that can be read by assistive technology
   - As JavaScript has evolved, it is not realistic to have one and only one requirement for JavaScript
   - All of WCAG 2.0 applies the whole page, including any use of JavaScript
m) Pages must provide a link to plug-ins or applets that conform to §1194.21
   - As web technology has evolved, it is often not possible to tell when a plug-in or applet is required
   - All of WCAG 2.0 applies to the whole page, including any use of plugs-ins or applets

53

Multiple Versions Still Permitted, but Not an Explicit Provision Anymore -

Original § 508 1194.22(k):
   A text-only page, with equivalent information or functionality, shall be provided to make a web site comply with the provisions of this part, when compliance cannot be accomplished in any other way. The content of the text-only page shall be updated whenever the primary page changes.

There is no SC like the above in WCAG 2.0.

WCAG 2.0 allows for a "conforming alternate version" (see WCAG 2.0 Conformance Requirements).
   Note that a "text-only page" would almost never satisfy this definition.

54

Concluding Thoughts About WCAG 2.0 :

The Success Criteria are the requirements
- The techniques are not required but provide guidance
- SC will be in future VPATs/GPATs

Built-in Prioritization Path/Plan for Development/Remediation/Quality Assurance
- Not just A versus AA, but also four SC with Non-Interference notes
- AAA SC available for developers wanting to go beyond minimum

WCAG 2.0 Support Documents are Regularly Updated

55

Resources

56

Where to Go for More Details?

- Final rule preamble

- Final Regulatory Impact Analysis
  - Table A-1. WCAG 2.0 Level A and Level AA Success Criteria

- NPRM Comparison Table of WCAG 2.0 to Existing 508 Standards
  - www.access-board.gov/wcag2-508

57

.gov Resources

www.Access-Board.gov – Section 508 Standards and Section 255
Guidelines, technical assistance:
- ICT Final rule (2017)
- Webinars – Section 508 Best Practices
- More guidance material under development

GSA Government-wide Section 508 Accessibility Program:
http://section508.gov
- Harmonized guidance from the Accessible Electronic Document
  Community of Practice (AED COP): http://section508.gov/best-
  practices

58

W3C Resources:

Web Content Accessibility Guidelines 2.0: www.w3.org/tr/wcag20
Understanding WCAG 2.0: www.w3.org/tr/understanding-wcag20
How to Meet WCAG 2.0:   www.w3.org/wai/wcag20/quickref
Techniques and Failures for WCAG 2.0: www.w3.org/tr/wcag20-techs
Guidance on Applying WCAG 2.0 to Non-Web Information and
Communications Technologies (WCAG2ICT):   www.w3.org/tr/wcag2ict

Web Accessibility Initiative homepage: www.w3.org/wai

59

How to Meet WCAG 2.0 (aka Quick Reference)

"How To Meet WCAG2.0" is the day-to-day resource designed for
routine use by developers. It's actually a database.
- Customizable
- Searchable
- The most practical way to browse the full the Techniques and
  Failures

Quick Reference:
- http://www.w3.org/wai/wcag20/quickref/

60

Questions?

You may type and submit questions in the Chat Area Text Box or press "Control-M" and enter text in the Chat Area

61

U.S. Access Board

- (800) 872-2253 (voice)
- (800) 993-2822 (TTY)
- E-mail: 508@access-board.gov
- www.access-board.gov

49

REMINDER: Next Scheduled Session

Old versus New: Original Section 508 Standards (2000) compared to the Revised Section 508 Standards (2017)

May 30, 2017

Registration Available at: www.adaconferences.org/CIOC

63