

APPENDIX B



# WCAG 2.0 Cross-Reference

**T**he accessible UX principles and guidelines in this book are organized around the user experience and how the design and coding of a website supports users.

In this section, we have matched our accessible UX principles and guidelines with the guidelines and detailed requirements (called *success criteria*) in WCAG 2.0 so that you can see the technical requirements for accessibility that support accessible design. Where there is no corresponding WCAG requirement, we provide other helpful resources. Some WCAG 2.0 criteria match more than one accessible UX guideline, showing how different UX specialists share responsibility for creating a web for everyone.

For each accessible UX principle, we also identify which of the WCAG 2.0 principles that form the foundation of web accessibility (Perceivable, Operable, Understandable, and Robust) are important in thinking about creating an experience that includes everyone.

Your project may be aiming for one of the WCAG 2.0 levels of conformance (A, AA, and AAA). When you think about accessible UX, you may find that a higher level requirement is easy to meet for some guidelines, adding to the overall accessibility of your site.

**TIP SUMMARY OF WCAG 2.0 GUIDELINES  
AND SUCCESS CRITERIA**

A quick reference table of WCAG 2.0 guidelines and success criteria and the chapters in the book where they are covered can be found at the end of this appendix. The list of Accessible UX principles and guidelines can be downloaded from the book site.

## People First: Designing for Differences

**People are the first consideration, and sites are designed with the needs of everyone in the audience in mind.**

The personas in this book are examples of people with disabilities and how they use the web and technology. Designing for Inclusion ([www.w3.org/WAI/users/Overview.html](http://www.w3.org/WAI/users/Overview.html)) has good materials on how people with disabilities use the web and how to involve users in web projects. Appendix C, “More Reading,” has a list of resources on assistive technology and disability statistics.

## Clear Purpose: Well-Defined Goals

**People enjoy products that are designed for the audience and guided by a defined purpose and goals.**

As a technical standard, WCAG 2.0 does not have much to say about strategy and goals; however, other documents of the Web Accessibility Initiative (WAI) do. In particular, Planning and Implementing Web Accessibility ([www.w3.org/WAI/managing.html](http://www.w3.org/WAI/managing.html)) has helpful guides for establishing support for accessibility. These materials provide useful background and context when thinking about the accessibility goals for a project.

## Solid Structure: Built to Standards

**People feel confident using the design because it is stable, robust, and secure.**

The Accessible UX guidelines for solid structure map to the fourth principle of WCAG 2.0: **Robust**. That is, sites must be coded so that they can be read by a variety of browsers and other technologies for accessing the web, including assistive technologies. Solid structure is also important to make a site **Perceivable**.

**TABLE B.1** SOLID STRUCTURE

Accessible UX	WCAG 2.0 (or other resources)
<p>Code content to be machine-readable. Code to standards. Use standard web technologies. Use stylesheets to separate content and presentation. Use semantic markup for content.</p>	<p><b>1.3.1 Info and Relationships:</b> Information, structure, and relationships conveyed through presentation can be programmatically determined, or are available in text (Level A).</p> <p><b>3.1.1 Language of Page:</b> The default human language of each web page can be programmatically determined (Level A).</p> <p><b>3.1.2 Language of Parts:</b> The human language of each passage or phrase in the content can be programmatically determined except for proper names, technical terms, words of indeterminate language, and words or phrases that have become part of the vernacular of the immediately surrounding text (Level AA).</p> <p><b>4.1 Compatible:</b> Maximize compatibility with current and future user agents, including assistive technologies (Guideline).</p> <p><b>4.1.1 Parsing:</b> 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 (Level A).</p> <p><b>4.1.2 Name, Role, Value:</b> 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 (Level A).</p>
<p>Organize code for clarity and flow.</p>	<p><b>1.3.2 Meaningful Sequence:</b> When the sequence in which content is presented affects its meaning, a correct reading sequence can be programmatically determined (Level A).</p> <p><b>2.4.3 Focus Order:</b> 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 (Level A).</p>

## Easy Interaction: Everything Works

**People can use the product across all modes of interaction and operating with a broad range of devices.**

The Accessible UX guidelines for easy interaction focus on the elements of the user interface, and map primarily to the WCAG 2.0 principle, **Operable**. Many of the WCAG 2.0 operability requirements are intended to ensure that users are able to interact with the site through assistive technology.

**TABLE B.2** EASY INTERACTION

Accessible UX	WCAG 2.0 (or other resources)
Identify and describe interactive elements. Use basic HTML codes correctly.	<b>3.3.2 Labels or Instructions:</b> Labels or instructions are provided when content requires user input (Level A). <b>4.1.2 Name, Role, Value:</b> 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 (Level A).
Use WAI-ARIA for complex elements.	WAI-ARIA (Accessible Rich Internet Applications) is a separate W3C standard for making dynamic content and controls accessible by adding codes that describe the widget or region of a page to assistive technology ( <a href="http://www.w3.org/WAI/intro/aria.php">www.w3.org/WAI/intro/aria.php</a> ). The WAI-ARIA Design Patterns provide instruction for creating accessible widgets ( <a href="http://www.w3.org/TR/wai-aria-practices/#aria_ex">www.w3.org/TR/wai-aria-practices/#aria_ex</a> ).
Use features of the technology platform.	The WCAG 2.0 guidelines are written to be technology-neutral, covering both HTML and other programming languages, rather than writing prescriptive advice for how to implement the requirements of each system or platform. To provide implementation advice, each requirement is linked to information (called Sufficient Techniques and Advisory Techniques) about how to meet it. The full list of How to Meet WCAG 2.0 can be filtered by technology ( <a href="http://www.w3.org/WAI/WCAG20/quickref/">www.w3.org/WAI/WCAG20/quickref/</a> ).

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**TABLE B.2** EASY INTERACTION (CONTINUED)

Accessible UX	WCAG 2.0 (or other resources)
Provide accessible instructions and feedback.	<p><b>1.3.2 Meaningful Sequence:</b> When the sequence in which content is presented affects its meaning, a correct reading sequence can be programmatically determined (Level A).</p> <p><b>3.3.1 Error Identification:</b> 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 (Level A).</p> <p><b>3.3.2 Labels or Instructions:</b> Labels or instructions are provided when content requires user input (Level A).</p>
Support keyboard interaction.	<p><b>2.1 Keyboard Accessible:</b> Make all functionality available from a keyboard (Guideline).</p> <p><b>2.1.1 Keyboard:</b> 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 (Level A).</p> <p><b>2.1.3 Keyboard (No Exception):</b> All functionality of the content is operable through a keyboard interface without requiring specific timings for individual keystrokes (Level AAA).</p> <p><b>2.1.2 No Keyboard Trap:</b> 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 (Level A).</p> <p><b>2.4.3 Focus Order:</b> 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 (Level A).</p> <p><b>2.4.7 Focus Visible:</b> Any keyboard operable user interface has a mode of operation where the keyboard focus indicator is visible (Level AA).</p>
Make controls large enough to operate easily.	<p>Because WCAG 2.0 emphasizes the ability to customize the interface, it does not include any requirements for the size and spacing of controls, especially for touch screens. However, guidelines for touch-screen voting systems provide some guidance, requiring a minimum size of 0.5 inches high and 0.7 inches wide, with at least 0.1 inches between touch controls in either direction.</p>

**TABLE B.2** EASY INTERACTION (CONTINUED)

Accessible UX	WCAG 2.0 (or other resources)
Let users control the operation of the interface.	<p><b>3.2 Predictable:</b> Make web pages appear and operate in predictable ways (Guideline).</p> <p><b>3.2.1 On Focus:</b> When any component receives focus, it does not initiate a change of context (Level A).</p> <p><b>3.2.2 On Input:</b> 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 (Level A).</p> <p><b>3.2.5 Change on Request:</b> Changes of context are initiated only by user request or a mechanism is available to turn off such changes (Level AAA).</p>
Design for contingencies.	<p><b>3.3 Input Assistance:</b> Help users avoid and correct mistakes (Guideline).</p> <p><b>3.3.1 Error Identification:</b> 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 (Level A).</p> <p><b>3.3.3 Error Suggestion:</b> 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 (Level AA).</p> <p><b>3.3.4 Error Prevention (Legal, Financial, Data):</b> 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 (Level AA):</p> <p><b>3.3.5 Help:</b> Context-sensitive help is available (Level AAA).</p> <p><b>3.3.6 Error Prevention (All):</b> For web pages that require the user to submit information, at least one of the following is true (Level AAA):</p> <ul style="list-style-type: none"><li><b>Reversible:</b> Submissions are reversible.</li><li><b>Checked:</b> Data entered by the user is checked for input errors, and the user is provided an opportunity to correct them.</li><li><b>Confirmed:</b> A mechanism is available for reviewing, confirming, and correcting information before finalizing the submission.</li></ul>

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**TABLE B.2** EASY INTERACTION (CONTINUED)

Accessible UX	WCAG 2.0 (or other resources)
Allow users to request more time.	<p><b>2.2 Enough Time:</b> Provide users enough time to read and use content.</p> <p><b>2.2.1 Timing Adjustable:</b> For each time limit that is set by the content, at least one of the following is true (Level A):</p> <ul style="list-style-type: none"><li><b>Turn off:</b> The user is allowed to turn off the time limit before encountering it; or</li><li><b>Adjust:</b> The user is allowed to adjust the time limit before encountering it over a wide range that is at least ten times the length of the default setting; or</li><li><b>Extend:</b> The user is warned before time expires and given at least 20 seconds to extend the time limit with a simple action (for example, “press the spacebar”), and the user is allowed to extend the time limit at least ten times; or</li><li><b>Real-time Exception:</b> The time limit is a required part of a real-time event (for example, an auction), and no alternative to the time limit is possible; or</li><li><b>Essential Exception:</b> The time limit is essential and extending it would invalidate the activity; or 20 Hour Exception: The time limit is longer than 20 hours.</li></ul> <p><b>2.2.3 No Timing:</b> Timing is not an essential part of the event or activity presented by the content, except for non-interactive synchronized media and real-time events (Level AAA).</p> <p><b>2.2.4 Interruptions:</b> Interruptions can be postponed or suppressed by the user, except interruptions involving an emergency (Level AAA).</p> <p><b>2.2.5 Re-authenticating:</b> When an authenticated session expires, the user can continue the activity without loss of data after re-authenticating (Level AAA).</p>

## Helpful Wayfinding: Guides Users

**People can navigate a site, feature, or page following self-explanatory signposts.**

The Accessible UX guidelines for helpful wayfinding map to the WCAG 2.0 principles, **Operable** and **Understandable**, with a focus on whether the operation of user interface is communicated clearly.



**TABLE B.3** HELPFUL WAYFINDING

Accessible UX	WCAG 2.0 (or other resources)
<p>Create consistent cues for orientation and navigation.</p> <p>Present things that are the same in the same way.</p> <p>Differentiate things that are different.</p>	<p><b>2.4 Navigable:</b> Provide ways to help users navigate, find content, and determine where they are (Guideline).</p> <p><b>2.4.4 Link Purpose (In Context):</b> 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 (Level A).</p> <p><b>2.4.9 Link Purpose (Link Only):</b> A mechanism is available to allow the purpose of each link to be identified from link text alone, except where the purpose of the link would be ambiguous to users in general (Level AAA).</p> <p><b>3.2 Predictable:</b> Make web pages appear and operate in predictable ways (Guideline).</p> <p><b>3.2.3 Consistent Navigation:</b> 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 (Level AA).</p> <p><b>3.2.4 Consistent Identification:</b> Components that have the same functionality within a set of web pages are identified consistently (Level AA).</p>
<p>Provide orientation cues.</p> <p>Provide clear landmarks within the page.</p>	<p><b>2.4.1 Bypass Blocks:</b> A mechanism is available to bypass blocks of content that are repeated on multiple web pages (Level A).</p> <p><b>2.4.2 Page Titled:</b> Web pages have titles that describe topic or purpose (Level A).</p> <p><b>2.4.6 Headings and Labels:</b> Headings and labels describe topic or purpose (Level AA).</p> <p><b>2.4.8 Location:</b> Information about the user’s location within a set of web pages is available (Level AAA).</p> <p><b>2.4.10 Section Headings:</b> Section headings are used to organize the content (Level AAA).</p> <p>The WAI-ARIA specification provides guidance on how to use the ARIA landmark role to define page regions: see Providing Navigable Structure Within Web Pages (<a href="http://www.w3.org/TR/wai-aria-practices/#kbd_layout">www.w3.org/TR/wai-aria-practices/#kbd_layout</a>).</p>
<p>Provide alternative ways to navigate.</p>	<p><b>2.4.5 Multiple Ways:</b> 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 (Level AA).</p>

# Clean Presentation: Supports Meaning

**People can perceive and understand elements in the design.**

The Accessible UX guidelines for clean presentation map to the WCAG 2.0 principle, **Perceivable**, ensuring that both content and interactive elements are presented to users in ways they can perceive.

**TABLE B.4** CLEAN PRESENTATION

Accessible UX	WCAG 2.0 (or other resources)
Design simply. Minimize clutter.	As a technical standard, WCAG 2.0 has little to say about general design and usability principles.
Design for customization of the display. Support customization through the browser.	<p><b>1.3 Adaptable:</b> Create content that can be presented in different ways (for example, simpler layout) without losing information or structure (Guideline).</p> <p><b>1.4.4 Resize text:</b> Except for captions and images of text, text can be resized without assistive technology up to 200 percent without loss of content or functionality (Level AA).</p> <p><b>1.4.5 Images of Text:</b> If the technologies being used can achieve the visual presentation, text is used to convey information rather than images of text except for the following (Level AA):</p> <ul style="list-style-type: none"><li><b>Customizable:</b> The image of text can be visually customized to the user's requirements.</li><li><b>Essential:</b> A particular presentation of text is essential to the information being conveyed.</li></ul> <p><b>1.4.9 Images of Text (No Exception):</b> Images of text are only used for pure decoration or where a particular presentation of text is essential to the information being conveyed (Level AAA).</p> <p><b>1.4.8 Visual Presentation:</b> For the visual presentation of blocks of text, a mechanism is available to achieve the following (Level AAA):</p> <ul style="list-style-type: none"><li><b>Foreground and background colors</b> can be selected by the user.</li><li><b>Text</b> can be resized without assistive technology up to 200 percent in a way that does not require the user to scroll horizontally to read a line of text on a full-screen window.</li></ul>
Design content for easy comprehension.	<p><b>2.4.6 Headings and Labels:</b> Headings and labels describe topic or purpose (Level AA).</p> <p><b>2.4.10 Section Headings:</b> Section headings are used to organize the content (Level AAA).</p> <p><b>3.3.2 Labels or Instructions:</b> Labels or instructions are provided when content requires user input (Level A).</p>

**TABLE B.4** CLEAN PRESENTATION (CONTINUED)

Accessible UX	WCAG 2.0 (or other resources)
Use color contrast to separate foreground from background.	<p><b>1.4 Distinguishable:</b> Make it easier for users to see and hear content, including separating foreground from background.</p> <p><b>1.4.3 Contrast (Minimum):</b> The visual presentation of text and images of text has a contrast ratio of at least 4.5:1, except for the following (Level AA):</p> <ul style="list-style-type: none"><li><b>Large Text:</b> Large-scale text and images of large-scale text have a contrast ratio of at least 3:1.</li></ul> <p><b>1.4.6 Contrast (Enhanced):</b> The visual presentation of text and images of text has a contrast ratio of at least 7:1, except for the following (Level AAA):</p> <ul style="list-style-type: none"><li><b>Large Text:</b> Large-scale text and images of large-scale text have a contrast ratio of at least 4.5:1.</li></ul> <p>Both 1.4.3-Level AA and 1.4.6-Level AAA requirements include two other exceptions:</p> <ul style="list-style-type: none"><li><b>Incidental:</b> Text or images of text that are part of an inactive user interface component, that are pure decoration, that are not visible to anyone, or that are part of a picture that contains significant other visual content, have no contrast requirement.</li><li><b>Logotypes:</b> Text that is part of a logo or brand name has no minimum contrast requirement.</li></ul>
Use visual and semantic white space.	<p>WCAG 2.0 does not provide guidance on how to best use visual white space to create groupings and describe the relationships among elements. It does address semantic white space in the following success criteria:</p> <p><b>1.3.1 Info and Relationships:</b> Information, structure, and relationships conveyed through presentation can be programmatically determined or are available in text (Level A).</p>
Provide enough space between lines of text. Use clean typography.	<p><b>1.4.8 Visual Presentation:</b> For the visual presentation of blocks of text, a mechanism is available to achieve the following (Level AAA):</p> <ul style="list-style-type: none"><li><b>Width</b> is no more than 80 characters or glyphs (40 if CJK).</li><li><b>Text</b> is not justified (aligned to both the left and the right margins).</li><li><b>Line spacing</b> (leading) is at least a space-and-a-half within paragraphs, and paragraph spacing is at least 1.5 times larger than the line spacing.</li></ul>

# Plain Language: Creates a Conversation

**People can read, understand, and use the information.**

The Accessible UX guidelines for plain language map to the WCAG 2.0 principle that information and the operation of user interface must be **Understandable**.

**TABLE B.5** PLAIN LANGUAGE

Accessible UX	WCAG 2.0 (or other resources)
Write for your audience.	<b>3.1 Readable:</b> Make text content readable and understandable (Guideline).
Follow plain language guidelines for writing content. Write sentences and paragraphs for easy scanning.	The U.S. Federal Plain Language Guidelines are an excellent source of guidance on writing using plain language ( <a href="http://www.plainlanguage.gov">www.plainlanguage.gov</a> ).
Support users through their tasks. Structure the whole page for scanning and understanding.	<b>2.4.6 Headings and Labels:</b> Headings and labels describe topic or purpose (Level AA). <b>2.4.10 Section Headings:</b> Section headings are used to organize the content (Level AAA). <b>3.3.2 Labels or Instructions:</b> Labels or instructions are provided when content requires user input (Level A). <b>3.3.5 Help:</b> Context-sensitive help is available (Level AAA).
Write helpful links.	<b>2.4.4 Link Purpose (In Context):</b> 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 (Level A). <b>2.4.9 Link Purpose (Link Only):</b> A mechanism is available to allow the purpose of each link to be identified from link text alone, except where the purpose of the link would be ambiguous to users in general (Level AAA).

**TABLE B.5** PLAIN LANGUAGE (CONTINUED)

Accessible UX	WCAG 2.0 (or other resources)
Use language your audience is familiar with, or provide definitions.	<p><b>3.1.1 Language of Page:</b> The default human language of each web page can be programmatically determined (Level A).</p> <p><b>3.1.2 Language of Parts:</b> The human language of each passage or phrase in the content can be programmatically determined except for proper names, technical terms, words of indeterminate language, and words or phrases that have become part of the vernacular of the immediately surrounding text (Level AA).</p> <p><b>3.1.3 Unusual Words:</b> A mechanism is available for identifying specific definitions of words or phrases used in an unusual or restricted way, including idioms and jargon (Level AAA).</p> <p><b>3.1.4 Abbreviations:</b> A mechanism for identifying the expanded form or meaning of abbreviations is available (Level AAA).</p> <p><b>3.1.6 Pronunciation:</b> A mechanism is available for identifying specific pronunciation of words where meaning of the words, in context, is ambiguous without knowing the pronunciation (Level AAA).</p>
Provide plain language summaries of complex content. Don't rely on readability formulas.	<p><b>3.1.5 Reading Level:</b> When text requires reading ability more advanced than the lower secondary education level after removal of proper names and titles, supplemental content, or a version that does not require reading ability more advanced than the lower secondary education level, is available (Level AAA).</p>
Usability test your content.	The WAI document, <i>Involving Users in Evaluating Web Accessibility</i> ( <a href="http://www.w3.org/WAI/eval/users.html">www.w3.org/WAI/eval/users.html</a> ), has links to resources to ensure that both accessibility and usability testing include people with disabilities.

## Accessible Media: Supports All Senses

**People can understand and use information contained in media, such as images, audio, video, animation, and presentations.**

The Accessible UX accessible media guidelines map to the WCAG 2.0 principles **Perceivable**, in making the content accessible through different senses, and **Understandable**, in that all users can operate the media interface.

**TABLE B.6** ACCESSIBLE MEDIA

Accessible UX	WCAG 2.0 (or other resources)
Don't use only color to communicate meaning.	<b>1.4.1 Use of Color:</b> Color is not used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element (Level A).
Provide instructions without relying on visual cues.	<b>1.3.3 Sensory Characteristics:</b> 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 (Level A).
Describe the content or meaning of images.	<b>1.1 Text Alternatives:</b> Provide text alternatives for any non-text content so that it can be changed into other forms people need, such as large print, braille, speech, symbols, or simpler language (Guideline). <b>1.1.1 Non-text Content:</b> 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 (Level A): <b>Controls, Input:</b> If non-text content is a control or accepts user input, then it has a name that describes its purpose. (Refer to Guideline 4.1 for additional requirements for controls and content that accepts user input.) <b>Time-Based Media:</b> If non-text content is time-based media, then text alternatives at least provide descriptive identification of the non-text content. <b>Test:</b> If non-text content is a test or exercise that would be invalid if presented in text, then text alternatives at least provide descriptive identification of the non-text content. <b>Sensory:</b> If non-text content is primarily intended to create a specific sensory experience, then text alternatives at least provide descriptive identification of the non-text content. <b>CAPTCHA:</b> If the purpose of non-text content is to confirm that content is being accessed by a person rather than a computer, then text alternatives that identify and describe the purpose of the non-text content are provided, and alternative forms of CAPTCHA using output modes for different types of sensory perception are provided to accommodate different disabilities. <b>Decoration, Formatting, Invisible:</b> If non-text content is pure decoration, is used only for visual formatting, or is not presented to users, then it is implemented in a way that it can be ignored by assistive technology.

**TABLE B.6** ACCESSIBLE MEDIA (CONTINUED)

Accessible UX	WCAG 2.0 (or other resources)
Provide captions and descriptions for video. Format captions to enhance meaning.	<p><b>1.2.2 Captions (Prerecorded):</b> Captions are provided for all prerecorded audio content in synchronized media, except when the media is a media alternative for text and is clearly labeled as such (Level A).</p> <p><b>1.2.3 Audio Description or Media Alternative (Prerecorded):</b> An alternative for time-based media or audio description of the prerecorded video content is provided for synchronized media, except when the media is a media alternative for text and is clearly labeled as such (Level A).</p> <p><b>1.2.4 Captions (Live):</b> Captions are provided for all live audio content in synchronized media (Level AA).</p> <p><b>1.2.5 Audio Description (Prerecorded):</b> Audio description is provided for all prerecorded video content in synchronized media (Level AA).</p> <p><b>1.2.7 Extended Audio Description (Prerecorded):</b> Where pauses in foreground audio are insufficient to allow audio descriptions to convey the sense of the video, extended audio description is provided for all prerecorded video content in synchronized media (Level AAA).</p>
Provide alternatives to time-based media.	<p><b>1.2 Time-based Media:</b> Provide alternatives for time-based media (Guideline).</p> <p><b>1.2.1 Audio-only and Video-only (Prerecorded):</b> For prerecorded audio-only and prerecorded video-only media, the following are true, except when the audio or video is a media alternative for text and is clearly labeled as such (Level A):</p> <ul style="list-style-type: none"><li><b>Prerecorded Audio-only:</b> An alternative for time-based media is provided that presents equivalent information for prerecorded audio-only content.</li><li><b>Prerecorded Video-only:</b> Either an alternative for time-based media or an audio track is provided that presents equivalent information for prerecorded video-only content.</li></ul> <p><b>1.2.6 Sign Language (Prerecorded):</b> Sign language interpretation is provided for all prerecorded audio content in synchronized media (Level AAA).</p> <p><b>1.2.8 Media Alternative (Prerecorded):</b> An alternative for time-based media is provided for all prerecorded synchronized media and for all prerecorded video-only media (Level AAA).</p> <p><b>1.2.9 Audio-only (Live):</b> An alternative for time-based media that presents equivalent information for live audio-only content is provided (Level AAA).</p>

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**TABLE B.6** ACCESSIBLE MEDIA (CONTINUED)

Accessible UX	WCAG 2.0 (or other resources)
Use dynamic elements carefully.	<p><b>1.4.2 Audio Control:</b> If any audio on a Web page plays automatically for more than three seconds, either a mechanism is available to pause or stop the audio, or a mechanism is available to control audio volume independently from the overall system volume level (Level A).</p> <p><b>1.4.7 Low or No Background Audio:</b> For prerecorded audio-only content that (1) contains primarily speech in the foreground, (2) is not an audio CAPTCHA or audio logo, and (3) is not vocalization intended to be primarily musical expression such as singing or rapping, at least one of the following is true (Level AAA):</p> <ul style="list-style-type: none"><li><b>No Background:</b> The audio does not contain background sounds.</li><li><b>Turn Off:</b> The background sounds can be turned off.</li><li><b>20 dB:</b> The background sounds are at least 20 decibels lower than the foreground speech content, with the exception of occasional sounds that last for only one or two seconds.</li></ul> <p><b>2.2.2 Pause, Stop, Hide:</b> For moving, blinking, scrolling, or auto-updating information, all of the following are true (Level A):</p> <ul style="list-style-type: none"><li><b>Moving, blinking, scrolling:</b> For any moving, blinking or scrolling information that (1) starts automatically, (2) lasts more than five seconds, and (3) is presented in parallel with other content, there is a mechanism for the user to pause, stop, or hide it unless the movement, blinking, or scrolling is part of an activity where it is essential; and</li><li><b>Auto-updating:</b> For any auto-updating information that (1) starts automatically and (2) is presented in parallel with other content, there is a mechanism for the user to pause, stop, or hide it, or to control the frequency of the update unless the auto-updating is part of an activity where it is essential.</li></ul> <p><b>2.3 Seizures:</b> Do not design content in a way that is known to cause seizures (Guideline).</p> <p><b>2.3.1 Three Flashes or Below Threshold:</b> 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 (Level A).</p> <p><b>2.3.2 Three Flashes:</b> Web pages do not contain anything that flashes more than three times in any one-second period (Level AAA).</p>



**TABLE B.6** ACCESSIBLE MEDIA (CONTINUED)

Accessible UX	WCAG 2.0 (or other resources)
Make presentations accessible.	Presentations are not covered in WCAG 2.0, but <i>How to Make Presentations Accessible to All</i> ( <a href="http://www.w3.org/WAI/training/accessible.php">www.w3.org/WAI/training/accessible.php</a> ) covers everything about presentations, from planning the event to delivering the presentation.

## Universal Usability: Creates Delight

**People can focus on the experience and their own goals because the product anticipates their needs.**

Universal usability builds on all of the guidelines from other chapters that keep operating and understanding—*using* the site or application—from getting in the way of exploration, discovery, and successful task completion. In this way, the Accessible UX guidelines for universal usability map to *all* of the WCAG principles, and guidelines support universal usability by supporting clear purpose, solid structure, easy interaction, helpful wayfinding, clean presentation, plain language, and accessible media.

## Summary: WCAG Requirements in Order

**TABLE B.7** UNIVERSAL USABILITY

Number	Level	Short Title	Chapter
<b>1.1</b>		<b>Text Alternatives</b>	<b>9</b>
1.1.1	A	Non-text Content	9
<b>1.2</b>		<b>Time-based Media</b>	<b>9</b>
1.2.1	A	Audio-only and Video-only (Prerecorded)	9
1.2.2	A	Captions (Prerecorded)	9
1.2.3	A	Audio Description or Media Alternative (Prerecorded)	9
1.2.4	AA	Captions (Live)	9
1.2.5	AA	Audio Description (Prerecorded)	9
1.2.6	AAA	Sign Language (Prerecorded)	9
1.2.7	AAA	Extended Audio Description (Prerecorded)	9
1.2.8	AAA	Media Alternative (Prerecorded)	9
1.2.9	AAA	<b>Audio-only (Live)</b>	9
<b>1.3</b>		<b>Adaptable</b>	<b>7</b>
1.3.1	A	Info and Relationships	4, 7
1.3.2	A	Meaningful Sequence	4, 5
1.3.3	A	<b>Sensory Characteristics</b>	9
<b>1.4</b>		<b>Distinguishable</b>	<b>7</b>
1.4.1	A	Use of Color	9
1.4.2	A	Audio Control	9
1.4.3	AA	Contrast (Minimum)	7
1.4.4	AA	Resize Text	7
1.4.5	AA	Images of Text	7
1.4.6	AAA	Contrast (Enhanced)	7
1.4.7	AAA	Low or No Background Audio	9
1.4.8	AAA	Visual Presentation	7
1.4.9	AAA	Images of Text (No Exception)	7

**TABLE B.7** UNIVERSAL USABILITY (CONTINUED)

Number	Level	Short Title	Chapter
<b>2.1</b>		<b>Keyboard Accessible</b>	<b>5</b>
2.1.1	A	Keyboard	5
2.1.2	A	No Keyboard Trap	5
2.1.3	AAA	Keyboard (No Exception)	5
<b>2.2</b>		<b>Enough Time</b>	<b>5</b>
2.2.1	A	Timing Adjustable	5
2.2.2	A	Pause, Stop, Hide	9
2.2.3	AAA	No Timing	5
2.2.4	AAA	Interruptions	5
2.2.5	AAA	Re-authenticating	5
<b>2.3</b>		<b>Seizures</b>	<b>9</b>
2.3.1	A	Three Flashes or Below Threshold	9
2.3.2	AAA	Three Flashes	9
<b>2.4</b>		<b>Navigable</b>	<b>6</b>
2.4.1	A	Bypass Blocks	6
2.4.2	A	Page Titled	6
2.4.3	A	Focus Order	4, 5
2.4.4	A	Link Purpose (In Context)	6, 8
2.4.5	AA	Multiple Ways	6
2.4.6	AA	Headings and Labels	6, 7, 8
2.4.7	AA	Focus Visible	5
2.4.8	AAA	Location	6
2.4.9	AAA	Link Purpose (Link Only)	6, 8
2.4.10	AAA	Section Headings	6, 7, 8
<b>3.1</b>		<b>Readable</b>	<b>8</b>
3.1.1	A	Language of Page	4, 8
3.1.2	AA	Language of Parts	4, 8
3.1.3	AAA	Unusual Words	8
3.1.4	AAA	Abbreviations	8
3.1.5	AAA	Reading Level	8
3.1.6	AAA	Pronunciation	8
<b>3.2</b>		<b>Predictable</b>	<b>5, 6</b>
3.2.1	A	On Focus	5
3.2.2	A	On Input	5
3.2.3	AA	Consistent Navigation	6
3.2.4	AA	Consistent Identification	6
3.2.5	AAA	Change on Request	5
<b>3.3</b>		<b>Input Assistance</b>	<b>5</b>
3.3.1	A	Error Identification	5
3.3.2	A	Labels or Instructions	5, 7, 8
3.3.3	AA	Error Suggestion	5
3.3.4	AA	Error Prevention (Legal, Financial, Data)	5
3.3.5	AAA	Help	5, 8
3.3.6	AAA	Error Prevention (All)	5
<b>4.1</b>		<b>Compatible</b>	<b>4</b>
4.1.1	A	Parsing	4
4.1.2	A	Name, Role, Value	4, 5