LEVEL access

WCAG 2.1 Factsheet: What's New?

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Washington, D.C. Office
1600 Spring Hill Road, Suite 400
Vienna, VA 22182

Silicon Valley Office
114 Sansome Street, Suite 950
San Francisco, CA 94104

New England Office
250 Commercial Street, Suite 3007A
Manchester, NH 03101

800.889.9659 | INFO@LEVELACCESS.COM

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A Quick Overview of WCAG 2.1

Why Make a Change to WCAG 2.0?

- The rise in touch and small screen interfaces of mobile devices necessitated clear standards applicable to mobile
- WCAG 2.0 was released in 2008, and much has changed with how we interact with technology.
- Technology is continually evolving, therefore, standards must be updated in in order to provide guidance on new implementations
- While WCAG 2.0 addressed a wide range of user needs across multiple disabilities it did not fully address all user needs due to technology support at the time of its creation

Goals in Developing WCAG 2.1

- Extend WCAG 2.0 incrementally
- Place an additional focus on low-vision needs, cognitive disabilities, and access to small screens and touch interfaces
- Provide guidance on speech input, input methods, status changes, and use of pointers
- Maintain backwards compatibility with WCAG 2.0

WCAG 2.1 Facts

- WCAG 2.1 builds on and extends WCAG 2.0, but does not supersede or replace WCAG 2.0.
- WCAG 2.1 is now the official recommendation of the World Wide Web Consortium (W3C).
- All WCAG 2.0 success criteria are still included in WCAG 2.1 with their same numbers.
- If content is WCAG 2.1 conformant at a given level (e.g., AA) the content is also WCAG 2.0 conformant at the same level.
- WCAG 2.1 adds 17 new success criteria:
    - 5 level A criteria
    - 7 level AA criteria
    - 5 level AAA criteria
- The success criteria primarily address items related to mobile (small screens and touch screens) that accommodate users with motor and dexterity disabilities, users with low vision, and users with cognitive disabilities. In addition, there are success criteria that benefit users of voice input, users with vestibular disabilities, and users of screen readers.
- WCAG 2.1 also adds a new guideline (input modalities) to cover items related to pointing devices (including touch screens) and a new conformance requirement note (added to the Full Page Conformance Requirement).
- New Note to Full Page Conformance Requirement: a full page includes all page variations that are presented for various screen sizes (e.g. responsive web versions of a site). All of these variations must conform to the WCAG 2.1 criteria (or needs to have a conforming alternate version) in order to be considered conformant.
- AMP (Accessibility Management Platform) supports WCAG 2.1 success criteria should our clients wish to use them.

Is WCAG 2.1 Required?

When Should WCAG 2.1 be Adopted?

- Level Access recommends to highly consider adopting WCAG 2.1 Level A and Level AA when you are creating or updating your accessibility policy
- If you want or need to follow WCAG 2.0, the new 2.1 guidelines are an alternate route to reach that goal.
- WCAG 2.1 is the future that you should be planning for, to meet the needs of customers and the future requirements of organizations you sell products and services to
- WCAG 2.1 is backwards compatible with WCAG 2.0 and you will be creating a better user experience for people with disabilities
- Adoption will likely be iterative – organizations can start with new assets and later change existing ones as needed
- Generally, if you are simply testing an existing product, there's likely no legal/procurement need to target 2.1 conformance or move on it at this time.

Required Usage of WCAG 2.1

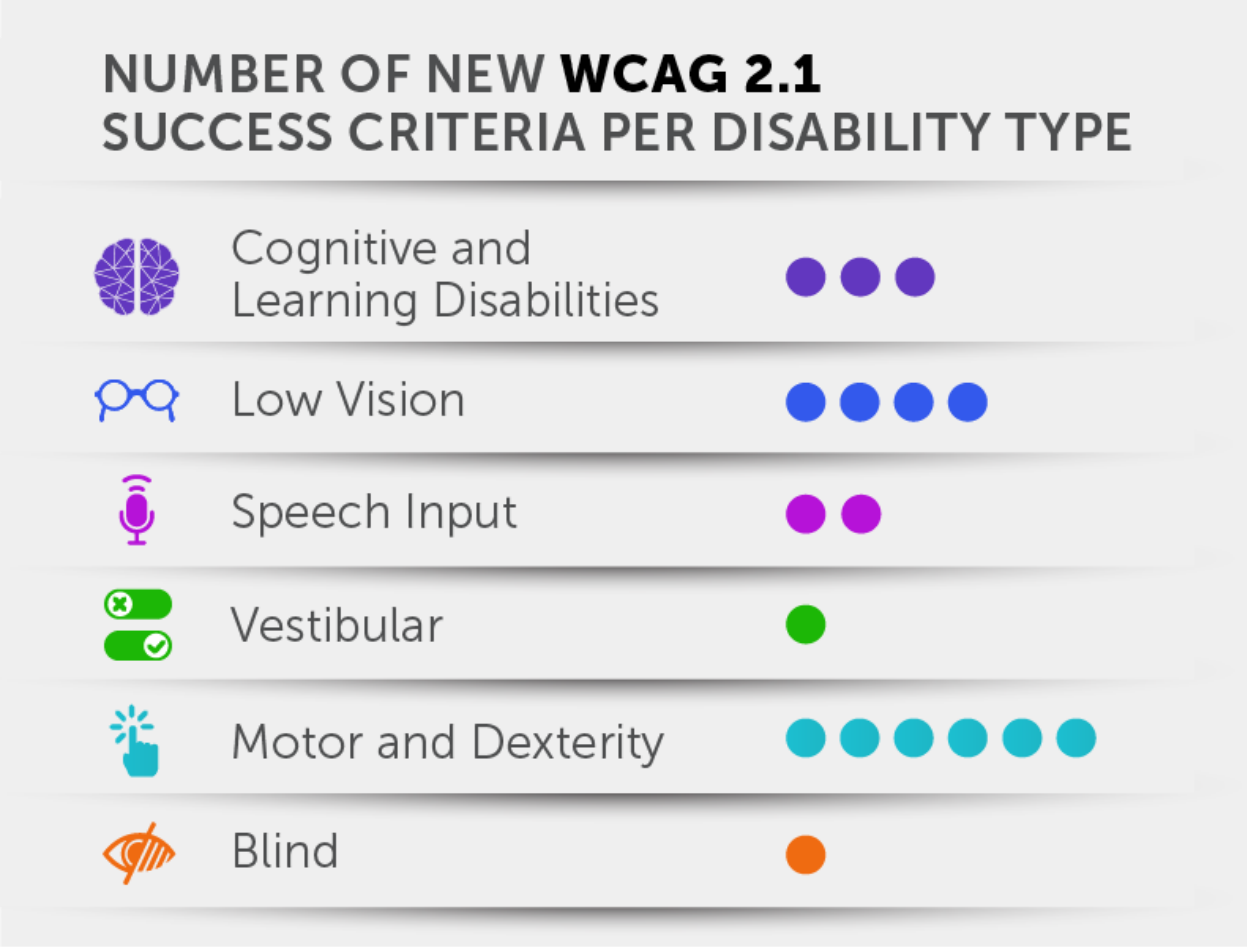
- Some organizations may require WCAG 2.1 from 3rd parties and vendors
- If an organization writes WCAG 2.1 in their procurement guidelines (e.g. banks and universities) you will need to meet WCAG 2.1 in order to be eligible for that contract.
- The WCAG 2.1 guidelines will most commonly be used with new content/features and new sites, rather than retrofitting older sites to 2.1

WCAG 2.1 is the Recommendation From the W3C

- The 2.1 success criteria are not *yet* required by U.S. State and Federal government agencies or Section 508, however, they are included in the updated European ICT Standards suitable for public procurement (EN 301549) used for public websites, mobile apps, and procurement. U.S. State and Federal procurement requirements may change in the future
- It is likely that plaintiffs will start referencing WCAG 2.1 in demand letters and legal complaints.
- WCAG 2.1 will soon appear in settlements as part of what plaintiffs are asking for (it's just a matter of time).
- **By choosing to adopt WCAG 2.1, your organization can get ahead of people demanding use of WCAG 2.1 in the future, and provide a much better experience for the community of people with disabilities!**

WCAG 2.1 Focuses On Accommodating More User Groups

The chart below groups the 17 new success criteria with the corresponding user group that they (most) accommodate. All of the success criteria that benefit those with motor and dexterity disabilities also benefit users of mobile devices (those with touch screens or small screens).



Below is a full list of the new WCAG 2.1 Success Criteria. You will find a detailed list of links for the 17 new success criteria, sorted by user groups. These links will take you to the W3C's WAI What's New in WCAG that has recently been updated to include WCAG 2.1. This page includes user personas that help break down each one of the new success criteria by giving examples on how these directly affect people with disabilities.

WCAG 2.1 Sorted by User Groups

Cognitive and Learning Disabilities

SC 1.3.5 IDENTIFY INPUT PURPOSE (AA)

SC 1.3.6 IDENTIFY PURPOSE (AAA)

SC 2.2.6 TIMEOUTS (AAA)

Low Vision

SC 1.4.10 REFLOW (AA)

SC 1.4.11 NON-TEXT CONTRAST (AA)

SC 1.4.12 TEXT SPACING (AA)

SC 1.4.13 CONTENT ON HOVER OR FOCUS (AA)

Speech Input

SC 2.1.4 CHARACTER KEY SHORTCUTS (A)

SC 2.5.3 LABEL IN NAME (A)

Vestibular

SC 2.3.3 ANIMATION FROM INTERACTIONS (AAA)

Motor and Dexterity (benefits mobile users as well)

SC 2.5.1 POINTER GESTURES (A)

SC 2.5.2 POINTER CANCELLATION (A)

SC 2.5.4 MOTION ACTUATION (A)

SC 2.5.5 TARGET SIZE (AAA)

SC 2.5.6 CONCURRENT INPUT MECHANISMS (AAA)

SC 1.3.4 ORIENTATION (LEVEL AA)

Useful Techniques to Meet WCAG 2.1 Conformance

Best Practices in AMP

The 17 new WCAG 2.1 A, AA, and AAA Success Criteria translate to 21 new web best practices in AMP. Each best practice provides a description of the requirement, conformant and non-conformant examples, recommendations, and test steps. Most organizations aim to be Level A/AA conformant and at this level there are a total of 16 best practices to consider.

Accessing Best Practices in AMP

Existing customers who want access to the AMP best practices can login to AMP and find them under their organization. If you have any trouble accessing these best practices you can reach out to the organization administrator, our support team, or your Level Access Customer Success representative.

You can review the new best practices in AMP with the following steps:

- Go to the best practices page (once the standards are mapped to your organization);
- Check the web media type;
- Check the three (3) standards (WCAG 2.1 A, AA, AAA);
- Check “Display Best Practices mapped only to selected Standards”; and
- Choose filter.

Detailed List of AMP Best Practices

The following is a detailed list of all the AMP best practices that are mapped to the new WCAG 2.1 Success Criteria. Each best practice is labeled with it’s corresponding level of conformance: Level A, Level AA or Level AAA. NOTE: If your organization is only looking to meet Level A and Level AA conformance, please pay special attention to those best practices.

This list will provide detailed descriptions of all the best practices and include guidelines that development teams can follow when testing or developing content. The best practices are sorted by media types and include the following: animation, color contrast, focus control, forms, keyboard accessibility, language and content, live regions, mobile, navigation and typography.

All of these best practices require manual testing to ensure conformance with WCAG 2.1. Check the AMP Best Practice section for more details.

Animation Best Practices

These best practices pertain to all page elements that use animation, blink or flicker. Whenever animation is provided as part of a page, developers must ensure that users can select a mode where animation is deactivated. Page elements that are animated can cause significant distractions for users with cognitive disabilities. Users with photo sensitive epilepsy face the potential for an epileptic fit whenever page content flashes at a rate between 2 Hz and 55 Hz.

Additionally, users who are blind or visually impaired may not have time to review content that is animated before it changes.

Best Practice: Ensure motion animation triggered by user interaction can be disabled (Level AAA)

Description: Motion animation, such as moving, growing, or shrinking content or parallax scrolling that is triggered by user interaction, can cause negative side effects for people with vestibular disorders. People may experience nausea, migraines, or other symptoms. When an option is not available to turn off this user-generated motion animation, some users may not be able to use the content and may have negative health effects or be distracted.

Motion animation that is essential or not presented based on user interaction is not covered by this best practice.

Color and Contrast Best Practices

The use of color to communicate information in web sites or applications is generally considered a good practice if and only if color is not the only means of communicating information or selection.

Best Practice: Ensure active user interface components have sufficient contrast (Level AA)

Description: Visual details needed to identify active user interface controls and their states including, but not limited to, buttons, form fields and focus and selected state indicators of these controls need to have a contrast ratio of at least 3:1 contrast with adjacent colors. This requirement is necessary to ensure that identifying features of controls and states (non-text) are distinguishable by people with low vision. Low contrast controls are more difficult to perceive and may be completely missed by people with a visual impairment.

Any parts of controls that identify the control need to have sufficient contrast with the adjacent background. In practice, this means that not all parts of a control must have sufficient contrast. For example, if an input has a shaded background and a bottom border line, it may only be necessary to ensure that the bottom line has sufficient contrast.

In addition, the indicators of states (hover, focused, checked, selected, current item, etc., when present) need to also provide the minimum 3:1 contrast with the colors adjacent to the control.

An exception is made for controls where the presentation is set to default and controlled by the browser.

Best Practice: Ensure parts of graphical objects essential for understanding content have sufficient contrast (Level AA)

Description: All parts of icons and other graphical objects that are needed to understand the content need to be perceivable by people with low vision or limited contrast perception without the need for contrast-enhancing assistive technology.

Each part of the object essential to understanding the content needs to have a contrast ratio to adjacent colors of at least 3:1. When graphical objects do not have sufficient contrast, users with visual impairments may not know what the graphic portrays and will not be able to understand all the content on the page.

The term "graphical object" applies to stand-alone icons such as a print icon (with no text), and the important parts of a more complex diagram such as each line in a graph. For simple graphics, such as single-color icons, the entire image is a graphical object. Images made up of multiple lines, colors and shapes will be made of multiple graphical objects, some of which are required for understanding.

Not every graphical object needs to contrast with its surroundings – only those that are required for a user to understand what the graphic is conveying. When text is provided with the graphic and the text has sufficient contrast, then the graphic needs to not meet the contrast requirements. However, alternative text that is not on-screen will not meet this requirement because it is not available to users visually.

Note: User interface controls may have both graphical objects and other aspects that must have sufficient contrast. This best practice only deals with the graphical object portion, such as the icon within an icon button.

Best Practice: Ensure all parts of charts and infographics required for understanding the content have sufficient contrast (Level AA)

Description: When parts of a graphical object convey multiple pieces of data or other complex information, such as a chart or diagram, each part of the graphic that is essential to understanding the data needs to have a contrast ratio of at least 3:1 with its adjacent content, unless the information is otherwise available as text. When each essential piece of data does not have sufficient contrast, users with visual impairments may not have access to the information being conveyed.

This requirement does not apply to essential portions of infographics, like logotypes, photo, or screenshots.

Focus Control Best Practices

Focus control best practices relate to the user's ability to control keyboard and reading focus within a web page or application. Keyboard focus is the location where keyboard actions will be interpreted by the application. It is often indicated visually by the cursor or a selection highlight, or programmatic dotted rectangle. Reading focus is the location where a screen reader begins to render content from. Users who are blind, have low vision, or have mobility impairment all rely heavily on proper control of keyboard and reading focus when browsing web based content.

Best Practice: Ensure that content that appears on hover may be moved over with a pointer without disappearing (Level AA)

Description: When additional content is triggered on hover, the additional content itself needs to allow the pointer to move over it without disappearing. Users who use zoom or screen magnification may need to move the mouse pointer to scroll the magnified area and read the additional content. When the additional content disappears when the pointer is moved, it

prevents users from reading this content. In addition, large pointers used by some users may obscure content and allowing the user to move the pointer to read the additional content under it is necessary for reading.

Form Best Practices

Maximizing the ability to successfully fill out online forms is critical to ensuring that all users have access to the full functionality of most web sites and web applications. Unless properly marked up, users with disabilities face significant challenges in filling out and submitting forms online.

Best Practice: Ensure that common input fields allow autocomplete and use standard autocomplete values (Level AA)

Description: Common user input fields need to allow autocomplete and use standard autocomplete notation to support personalization by communicating the purpose of the input field programmatically. When autocomplete is used to communicate the purpose of a field, users of assistive technology or users with cognitive disabilities can have access to icons or familiar terms indicating the field's purpose. In addition, when a form is filled out automatically using information the user has previously entered, the user does not need to decipher input fields that may appear differently in different forms and may not need to remember and re-enter data.

The purpose of input fields can be communicated in several different ways, but currently, the only supported way is by using the autocomplete attribute in HTML. Not all input fields require communicating their purpose and use of autocomplete -- only common fields listed in the WCAG 2.1 standard are required. This set matches the autocomplete values available in HTML 5.3. In addition, when other web technologies that are not HTML do not provide support for identifying the purpose, this is not required.

Best Practice: Ensure the visible text label for a control is included in the control's accessible name (Level A)

Description: The accessible name for a control needs to include the text of its visual text label. Speech input users often navigate by speaking text from a control's visible label. When the accessible name does not match the visible text label or includes the text from the visible label, users will not be able to easily access that interface control.

Best Practice: Ensure users know what duration of inactivity will cause a time out with data loss (Level AAA)

Description: Ensure that when a timeout is used, users are advised of the duration of inactivity that will cause the timeout and result in loss of data. Users with cognitive disabilities, or other focus/memory related disabilities, may require more time to read content or to complete interactions, such as completing an order form. The use of timed events can present barriers for people who need to take breaks. Providing the duration of inactivity before a timeout occurs or saving user data will help users plan for breaks

Keyboard Accessibility Best Practices

Accessible web sites and applications must provide full control of functionality from the keyboard. Users who are blind, have low vision, or have certain mobility impairments utilize the keyboard as the sole means of navigating the web medium. Keyboard accessibility ensures that keyboard focus can be gained on all active components and that all appropriate actions can be taken from the keyboard.

Best Practice: Ensure that character key shortcuts without modifiers can be reconfigured or deactivated (Level A)

Description: When a page has shortcuts that can be activated using a single key, such as a letter, number, punctuation, or symbol key without a modifier key, the user should have the option to reconfigure (remap to use a modifier) or deactivate (turn off) the shortcut. This best practice is not applicable when the control that has the shortcut is focused. This best practice does not apply to access keys, as those shortcuts require a modifier key.

When key shortcuts without modifiers are used, speech users may accidentally activate shortcuts while navigating a page or dictating. Users with mobility issues may accidentally hit keys and unintentionally activate shortcuts.

Best Practice: Ensure that content that appears on hover or focus may be dismissed by the user (Level AA)

Description: When additional content appears by receiving and removing pointer hover or keyboard focus, the content does not obscure other content or is dismissible by the user. When additional content covers all or part of other content, users with low vision who use zoom or magnification may find it to move their pointer off the trigger but keep the other content in the magnified view to read it. That is, when content is viewed in a very magnified area, new content can easily and accidentally be triggered preventing access to read the other content around it.

Language and Content Best Practices

These best practices refer to the actual content within a web page or application. Generally, developers should ensure that content is written in a clear and concise fashion that is appropriate for the audience.

Best Practice: Ensure the purpose of user interface components, icons, and regions can be programmatically determined (Level AAA)

Description: When content is implemented using markup languages, the purpose of user interface controls, icons, and page regions needs to be programmatically determinable. This best practice supports user personalization, preferences and needs by making it possible for symbols to be associated with these elements, for content to be adapted, or made more familiar based on the purpose being programmatically available to user agents and assistive technology.

For some users, learning new design patterns and interacting with new widgets can be confusing. Having access to familiar terms and symbols is important for users with a limited vocabulary to being able to use web content. However, having one set of symbols will not work for everyone. What is familiar for some users may not be for other users. So, programmatically

associating user-interface components and icons enables a person's browser to provide a set of symbols that is best for them.

Best Practice: Ensure content that appears on hover or focus is persistent until dismissed, not valid, or the trigger is removed (Level AA)

Description: Content that appears on hover or focus must be persistent until it is dismissed, no longer valid, or the trigger is moved away. When content that is triggered by focus or hover and is not persistent with one of the conditions listed above, users with low vision may not have sufficient time to read the content before it disappears.

This best practice applies to content that appears when a pointer is hovered or keyboard focused on a trigger and disappears when the pointer is removed from the trigger. It does not apply to content, such as dialogs, accordions, etc., where the content remains after focus/hover is removed.

Live Region Best Practices

The W3C's draft Accessible Rich Internet Applications (ARIA) specification refers to areas of a page that update dynamically without a refresh of the entire page as live regions.

Best Practice: Ensure that status messages can be determined programmatically without receiving focus (Level AA)

Description: When new status content is added to the screen without changing the user's context, users should be made aware of the important changes in content that are not given focus in a way that doesn't unnecessarily interrupt their work. The messages to the users should be programmatically determinable through a role or properties.

This is especially beneficial for users who are blind, have low vision, or users with cognitive or learning disabilities that use assistive technology with screen reading capabilities.

Status messages include, but are not limited to, brief messages about the completion or status of the search, system busy or system available announcements, form error or completion messages, or information on the progress of a process.

When status messages are not programmatically indicated, users of assistive technology, such as screen readers, may be unaware of the status change.

Mobile Best Practices

Mobile devices typically have smaller screen sizes and provide special features and alternative input methods not typically found on desktop platforms. As a result while modern mobile devices provide support for most standard web techniques there are differences that web developers must take into account when developing accessible web content that is targeted at or may be used on mobile devices.

Best Practice: Ensure that functionality can be operated through a single pointer except when a multi-point or path based gesture is essential (Level A)

Description: Functionality on a page needs to be operated using a single pointer, such as a single-click/tap, click/tap-and-hold, or double-click/tap. Content requiring complex multi-point or path-based gestures, such as swiping, dragging, pinching, or drawing should have equivalent single-point activation methods unless the gesture is essential, such as signing your name, or part of the user agent, such as scrolling the screen.

This requirement is beneficial for users who lack the accuracy, dexterity necessary, or tools to perform complex gestures in a precise manner.

Multi-point gestures include a two-finger pinch zoom, a split tap where one finger rests on the screen and a second finger taps, or a two- or three-finger tap or swipe. Path-based gestures include swiping, dragging, or the drawing of a complex path. The path may be drawn with a finger or stylus on the screen, on a graphics tablet or on a trackpad, or with a mouse- or joystick-operated pointer.

Best Practice: Ensure events triggered by single-point activation can be cancelled (Level A)

Description: People with various disabilities, including motor disabilities, can accidentally trigger touch or mouse events with unwanted results. Activation can occur when someone touches a screen (down-event) or when they remove their finger (up-event). In mouse interaction, activation can occur when pressing (down-event) or when releasing the mouse button (up-event). When activation occurs only when the pointer is down, users may trigger the wrong item when they put their finger down, but then move it to the correct target.

When functionality is completed by the up-event (and started by the down-event), such as with a drag-and-drop, there needs to be a mechanism to cancel the function before completion or undo the function after completion. When actions triggered unintentionally cannot be reversed, users with visual disabilities, cognitive limitations, or motor impairments may not be able to correct errors when undesired actions occur.

Best Practice: Ensure that pointer input target size is at least 44 by 44 CSS pixels unless exceptions apply (Level AAA)

Description: The target size for pointer input needs to be at least 44x44 CSS pixels. When a target is too small, users with hand tremors, limited dexterity or other limitations may have trouble activating coarse targets, such as when users touch a smartphone or mobile device with a small touchscreen.

A target may have less than 44x44 CSS pixels when one of the following applies:

1. There is an equivalent link or control on the same page that is at least 44x44 CSS pixels.
2. The target (link, button, interactive icons, etc.) is inline in a sentence or block of text.
3. The target size is controlled by the user agent and not the author. That is, if the size of the target is not modified by the author through CSS or other size properties, then the target does not need to meet the target size of 44x44 CSS pixels.
4. The target size is essential to use of the target. For example, the target has to be a certain size.

Best Practice: Ensure that motion is not the only method to activate user interface components (Level A)

Description: When device motion or user motion (e.g., shaking or tilting or gestures picked up by the device's camera) are used for interaction or functionality, an alternative input method should be provided to perform an equivalent action unless the action is essential. When alternatives are not provided, users with motor impairments or users who are unable to perform gestures or actuate sensors on the device will not be able to access the functionality on the page.

In addition, some users may accidentally activate sensors due to tremors or other motor impairments. Therefore, there must be a method whereby the user can turn off sensor input functionality.

Best Practice: Avoid restricting the operation or viewing of content in different display orientations (Level AA)

Description: Web content should not prevent the user from changing the display orientation to either portrait or landscape. Content must be operable although the equivalent functionality and content of that content is not covered by this best practice. When content requires a particular orientation, users who have a mounted device, such as those with devices mounted to wheelchairs or those who are otherwise unable to change the orientation of the device, will be unable to interact with or access content in a particular orientation. Changes of orientation may also be beneficial to users with low vision who may change the orientation of a device to increase the width of the reading area when enlarged content is used or may use different orientations to increase the size of content.

Navigation Best Practices

Navigation requirements ensure that accessible navigation structures are provided for users with disabilities. Ensuring navigation structures are accessible includes certifying that users can navigate both within a page and in between pages of the site.

Best Practice: Ensure users can use and switch between different modes of input when interacting with web content (Level AAA)

Description: Users may employ a variety of input mechanisms when interacting with web content. These may be a combination of mechanisms, such as a keyboard or keyboard-like interfaces and pointer devices like a mouse, stylus or touchscreen, or speech input. The user may prefer using one input device for certain tasks or interactions and other input devices for different interactions. When a page does not allow users to switch input mechanism, some users with disabilities may have difficulty interacting with a page.

Users should be allowed to add and remove input mechanisms at any point as long as they are supported by the operating system, don't cause a security issue, or unless the interaction changes are essential or set by the user.

Typography Best Practices

These best practices deal with the appearance of text within a web page. Typography considerations impact a wide variety of disability types, specifically users with low vision and users with cognitive disabilities.

Best Practice: Ensure pages reflow without requiring two-dimensional scrolling without loss of content or functionality (Level AA)

Descriptions: Text and other content on a page should reflow without requiring scrolling in two dimensions when the horizontal width is 320 CSS pixels/vertical height is 256 CSS pixels. The reflow must not cause loss of content or functionality, although content and functionality may be presented in different ways, such as via a pop-up menu rather than a navigation bar. Users with low vision use the browser zoom function to increase the size of content. When zoom causes the page to require scrolling in multiple directions, a much greater effort is required to read the content.

Fluid and responsive pages are generally designed to work on mobile devices that support a minimum width of 320 CSS pixels, so this number was chosen to support layouts that use 1/4 of the standard display size of 1280 CSS pixels. In some situations, this may also have the effect of allowing zoom up to 400%, although this is not required by this best practice. All that is required by this best practice is that the layout supports 320 CSS pixels. CSS pixels were chosen because they are not dependent on physical factors and provide the relative same size when the ideal viewport is used (viewport that matches the device width). This best practice works in harmony with the best practice for 200% text size and does not replace it.

There are exceptions to this requirement, such as images, maps, tables, and other items, that require two-dimensional layout.

Best Practice: Ensure that content and functionality is available when the user overrides text spacing properties (Level AA)

Description: People with low vision or dyslexia may override text spacing to enable readability or increased reading speed. Ensure that when users override text spacing via style sheet or another browser setting, there is no loss of content or functionality -- text must not be cut off or missing. When the content cannot adapt to user settings, users may not be able to use their preferred text spacing or may not be able to access content that is cut off or overlaps.

Only specific spacing settings are required to meet this best practice and languages or technologies that do not support a particular setting only have to meet the settings that apply to that circumstance.

Additional Resources for Development Teams

- **W3C's Guide to Understanding WCAG 2.1**
  - This is a complete guide on understanding and using the new WCAG 2.1 guidelines

- **W3C's Updated Guide on How to Meet WCAG,**
  - Full descriptions of the guidelines complete with accessible technical examples and failures

- **Free Testing Tools from Level Access**
  - Begin evaluating right away with our free community editions of some of our popular products.
  - If you have an AMP enterprise account, you have access to the full versions of these products.
  - Training is available for all of our products. Please contact your organization administrator or your Level Access Customer Success representative to inquire about your training needs.