# **State of Missouri Web Accessibility Testing Checklist**

**Website/Application Name:**

## Categories for Testing

1. Keyboard Navigation
2. Non-Visual Navigation with a screen reader
3. Alternate Visual Access
4. Usability
5. Non-Audio Access
6. Downloadable File

### Testing Tools Needed

* + Keyboard
  + [WAVE Toolbar](https://wave.webaim.org/) or other browser extension
  + Screen reader (and knowledge of how it works)
    - JAWS
    - NVDA (Windows)
    - VoiceOver (Mac),
    - Narrator (Windows)
  + [Color contrast analyzer](https://developer.paciellogroup.com/resources/contrastanalyser/)

### Using the Checklist

Automated testing such as using the WAVE Tool only captures about 30-50% of accessibility issues. Use this checklist to follow up with manual testing.

1. Each section includes instructions on how to use applicable testing tools.
2. The desirable answer for each yes/no question is “Yes.”
3. Any question answered with “No” is an accessibility issue that needs to be addressed.
4. [Use the Web Accessibility Evaluation Report Template](https://at.mo.gov/it-access/ict-websites-webapps.html) to record and remediate accessibility issues.

## Testing Keyboard Navigation

The first step to manual testing is to throw away your mouse. See if you can navigate the page, including all menus and interactive elements, using only the keyboard.

### Keyboard Focus

**Role:** Developer, Designer

**Resources:** [Understanding 2.1.2 – No Keyboard Trap](http://www.w3.org/TR/UNDERSTANDING-WCAG20/keyboard-operation-trapping.html), [Understanding 2.4.7 – Focus Visible](http://www.w3.org/TR/UNDERSTANDING-WCAG20/navigation-mechanisms-focus-visible.html)  
  
Use the TAB, ENTER, SPACE, and UP and DOWN ARROW keys to navigate.

* You can always see the keyboard focus when tabbing through the page. ☐ Yes ☐ No
* Keyboard focus *does not* unexpectedly shift to other elements or stop altogether (keyboard trap). ☐ Yes ☐ No

### Tab Order

**Role:** Developer  
**Resources:** [Understanding 2.1.1 - Keyboard](http://www.w3.org/TR/UNDERSTANDING-WCAG20/keyboard-operation-keyboard-operable.html)

1. TAB through the page to see if the order is logical.
2. See if you can activate all interactive elements with the ENTER or SPACE keys.

* Tab order is logical. ☐ Yes ☐ No
* All elements on the page can be reached by keyboard. This includes links, dropdown menu items, buttons, and other interactive elements. ☐ Yes ☐ No
* If dropdown menus exist, the keyboard can be used to select and open items in them. ☐ Yes ☐ No ☐ N/A

### Electronic Forms

**Role:** Developer  
**Resources:** [Understanding 2.1.1 - Keyboard](http://www.w3.org/TR/UNDERSTANDING-WCAG20/keyboard-operation-keyboard-operable.html), [Understanding 2.2.1 – Timing Adjustable](http://www.w3.org/TR/UNDERSTANDING-WCAG20/time-limits-required-behaviors.html), [Understanding 3.3.1 – Error Identification](http://www.w3.org/TR/UNDERSTANDING-WCAG20/minimize-error-identified.html)[, Understanding 3.3.2 – Labels or Instructions](http://www.w3.org/TR/UNDERSTANDING-WCAG20/minimize-error-cues.html)

* ☐ N/A (There are no forms.)
* Tab order of form fields is logical. ☐ Yes ☐ No
* In dropdown menus, you can navigate and select items using the keyboard alone. ☐ Yes ☐ No
* Data entered is retained if the page is refreshed or too much time is taken to fill out fields. ☐ Yes ☐ No
* If a required field is left blank, keyboard focus shifts to an error message or the field. ☐ Yes ☐ No
* If a field has improperly formatted data, keyboard focus shifts to the error messages ☐ Yes ☐ No

### Dialog Boxes and Popups

**Role:** Developer   
**Resources:** [Understanding 2.1.1 - Keyboard](http://www.w3.org/TR/UNDERSTANDING-WCAG20/keyboard-operation-keyboard-operable.html)

* ☐ N/A (There are no dialog boxes.)
* Dialog boxes or pop-up menus receive keyboard focus. ☐ Yes ☐ No
* Dialog messages can be dismissed using the keyboard. ☐ Yes ☐ No
* Focus returns to a logical location when dialog boxes are closed. ☐ Yes ☐ No

### Multimedia Controls

**Role:** Developer   
**Resources:** [Understanding 2.1.1 - Keyboard](http://www.w3.org/TR/UNDERSTANDING-WCAG20/keyboard-operation-keyboard-operable.html), [Understanding 2.2.2 – Pause, Stop, Hide](http://www.w3.org/TR/UNDERSTANDING-WCAG20/time-limits-pause.html)

Includes features such as videos, audio files, calendars, Flash content, and photo carousels.

* ☐ N/A (There are no multimedia.)
* Manual controls exist (e.g. start, pause, go back, go forward). ☐ Yes ☐ No
* Controls can be tabbed through. ☐ Yes ☐ No
* Controls can be activated using the keyboard. ☐ Yes ☐ No

## Testing Non-Visual Navigation (Screen Reader)

When testing with your screen reader, use the same keyboard navigation strategies that you used in the previous section (TAB, ENTER, SPACE, and ARROW KEYS). This time, listen to how the screen reader interprets the page as you navigate with the keyboard.

How to use a screen reader:

* [NVDA (Windows)](http://webaim.org/articles/nvda/)
* [JAWS](http://webaim.org/articles/jaws/)
* [VoiceOver (Mac](https://help.apple.com/voiceover/info/guide/10.12/))
* [Narrator (Windows)](•%09https:/support.microsoft.com/en-us/help/22798/windows-10-narrator-get-started)

### Links – Descriptive Text

**Roles:** Developer, Designer, Content Creator

**Resources:** [Understanding 2.4.4 – Link Purpose (In Context)](http://www.w3.org/TR/UNDERSTANDING-WCAG20/navigation-mechanisms-refs.html)

One of the ways a screen reader user navigates a page is by using the TAB key to skip through the links on the page, or by bringing up a list of links. Links should be descriptive so that a user can easily determine where they will go even when taken out of context.

* Links are descriptive, without generic text such as “click here”. ☐ Yes ☐ No

### Logical Headings

**Roles:** Developer, Designer, Content Creator

**Resources**: [Understanding 2.4.6 – Headings and Labels](http://www.w3.org/TR/UNDERSTANDING-WCAG20/navigation-mechanisms-descriptive.html)

Screen reader users also navigate content using headings. Headings allow them to jump to a specific section instead of having to listen to the entire page.

* Headings are used to provide structure and indicate importance of the content. ☐ Yes ☐ No
* Heading levels are not skipped. ☐ Yes ☐ No

### Skip Navigation Links

**Role:** Developer

**Resources:** [Understanding 2.4.1 – Bypass Blocks](http://www.w3.org/TR/UNDERSTANDING-WCAG20/navigation-mechanisms-skip.html)

A skip navigation link is helpful for users who don’t want to work their way through all the links on the page before getting to the main content. This link does not have to be visible on the page, but it should be listed first in the tab order.

* Skip navigation links are present. ☐ Yes ☐ No
* Skip links work as intended using JAWS, skipping to the main content of the page. ☐ Yes ☐ No

### Images

**Roles:** Developer, Content Creator

**Resources:** [Understanding 1.1.1 – Non-text Content](http://www.w3.org/TR/UNDERSTANDING-WCAG20/text-equiv-all.html)

Any non-text element needs a text description that screen reading software can read aloud to the listener. It should describe the purpose of the image in context.

* ☐ N/A (There are no images.)
* Purely decorative images have null alternate text (ALT=””). ☐ Yes ☐ No
* All meaningful images have descriptive alternate text. ☐ Yes ☐ No
* All navigation buttons have descriptive alternate text. ☐ Yes ☐ No

### Multimedia

**Roles:** Developer, Content Creator

**Resources:** [Understanding 1.2.1 - Audio-only and Video-only (Prerecorded)](http://www.w3.org/TR/UNDERSTANDING-WCAG20/media-equiv-av-only-alt.html), [Understanding 1.2.2 - Captions (Prerecorded)](http://www.w3.org/TR/UNDERSTANDING-WCAG20/media-equiv-captions.html), [Understanding 1.2.3 - Audio Description or Media Alternative (Prerecorded)](http://www.w3.org/TR/UNDERSTANDING-WCAG20/media-equiv-audio-desc.html), [Understanding 1.2.4 - Captions (Live),](http://www.w3.org/TR/UNDERSTANDING-WCAG20/media-equiv-real-time-captions.html) [Understanding 1.2.5 - Audio Description (Prerecorded)](http://www.w3.org/TR/UNDERSTANDING-WCAG20/media-equiv-audio-desc-only.html)

Includes features such as videos, audio files, calendars, Flash content, and photo carousels.

* ☐ N/A (There are no multimedia.)
* Multimedia controls have alternate text. ☐ Yes ☐ No
* Video or audio do not start to play automatically, only when triggered by the user. ☐ Yes ☐ No
* You hear what you expect when selecting controls. ☐ Yes ☐ No
* Using the controls is intuitive. ☐ Yes ☐ No
* Videos have audio descriptions available for any information that is only conveyed visually. ☐ Yes ☐ No
* More video requirements in section “TESTING NON-AUDIO ACCESS”.

### Forms

**Roles:** Developer, Designer

**Resources:** [Understanding 3.3.1 – Error Identification](http://www.w3.org/TR/UNDERSTANDING-WCAG20/minimize-error-identified.html)[, Understanding 3.3.2 – Labels or Instructions](http://www.w3.org/TR/UNDERSTANDING-WCAG20/minimize-error-cues.html)

* ☐ N/A (There are no forms.)
* Form fields have descriptive labels. ☐ Yes ☐ No
* Appropriate descriptive labels present and read by screen reader when tabbing through form fields.☐ Yes ☐ No
* You can fill out the forms and submit them successfully with screen reader. ☐ Yes ☐ No
* Buttons are labeled and read correctly by screen reader. ☐ Yes ☐ No
* If a required field is left blank, screen reader reads the error text and navigates dialog buttons. ☐ Yes ☐ No
* When an error dialog is dismissed, screen reader automatically returns to the empty field. ☐ Yes ☐ No

### Layout Tables

**Roles:** Developer, Designer, Content Creator

Layout tables are not recommended for accessibility. CSS should be used rather than tables to layout information.

* ☐ N/A (There are no layout tables.)
* Tables are not used purely for positioning content. ☐ Yes ☐ No
* If tables are used for layout, they *do not* have designated header rows. ☐ Yes ☐ No
* If tables are used for layout, the reading order of the cells makes sense when linearized. ☐ Yes ☐ No
* If tables are used for layout, they allow end user customization and text scaling. ☐ Yes ☐ No
* Tables are not nested or filled with spanned or ‘spacer’ cells. ☐ Yes ☐ No

### Data Tables

**Roles:** Developer, Content Creator

**Resources:** [Understanding 1.3.1 – Info. and Relationships](http://www.w3.org/TR/UNDERSTANDING-WCAG20/content-structure-separation-programmatic.html)

* ☐ N/A (There are no data tables.)
* Data tables have designated header and/or column rows. ☐ Yes ☐ No
* Tables are not nested or filled with spanned or ‘spacer’ cells. ☐ Yes ☐ No
* Row or column headers are associated with the appropriate **Scope** attribute. ☐ Yes ☐ No

### Frames

**Roles:** Developer, Content Creator

**Resources:** [Understanding 4.1.2 - Name, Role, Value](http://www.w3.org/TR/UNDERSTANDING-WCAG20/ensure-compat-rsv.html)

* ☐ N/A (There are no frames.)

If Frames are found (not recommended for accessibility):

* Each frame has a descriptive title attribute value. ☐ Yes ☐ No
* While listening with screen reader, you can navigate between frames ☐ Yes ☐ No
* While listening with screen reader, you can tell what the purpose of each frame is ☐ Yes ☐ No

### Captcha

**Role:** Developer

**Resources:** [Understanding 2.1.1 - Keyboard](http://www.w3.org/TR/UNDERSTANDING-WCAG20/keyboard-operation-keyboard-operable.html)

If CAPTCHA is used, it must be fully accessible and simple to use. Recommendation: [reCaptcha Version 3](https://developers.google.com/recaptcha/docs/v3)

* ☐ N/A (There is no CAPTCHA.)
* CAPTCHA is fully accessible by keyboard. ☐ Yes ☐ No
* CAPTCHA is fully accessible to screen reading software. ☐ Yes ☐ No
* Audio CAPTCHA is fully accessible by screen readers, including a pause that allows the screen reader to finish before the audio begins. ☐ Yes ☐ No
* Audio CAPTCHA has an alternative for users with hearing impairments. ☐ Yes ☐ No

## Testing Alternate Visual Access

Many users are colorblind or have low vision. Color choice matters for both groups of users. Contrast impacts those with low vision, while those who are colorblind cannot distinguish between certain colors.

### Choice of Color

**Roles:** Developer, Designer, Content Creator

**Resources:** [Understanding 1.4.1 – Use of Color](http://www.w3.org/TR/UNDERSTANDING-WCAG20/visual-audio-contrast-without-color.html), [Understanding 1.4.3 – Contrast Minimum](http://www.w3.org/TR/UNDERSTANDING-WCAG20/visual-audio-contrast-contrast.html)

* Color is not used as the sole means of conveying information on the page. ☐ Yes ☐ No
* The WAVE test indicates sufficient contrast (Minimum AA) for text on solid color backgrounds. ☐ Yes ☐ No
* The Chrome WCAG 2.0 Color Contrast Analyzer indicates sufficient contrast for text on top of images or gradient backgrounds. ☐Yes ☐ No
* Hover state has sufficient contrast or underline ☐ Yes ☐ No

### Font Size/Zoom

**Role:** Developer

**Resources:** [Understanding 1.4.4 - Resize text](http://www.w3.org/TR/UNDERSTANDING-WCAG20/visual-audio-contrast-scale.html), [Understanding 1.4.5 – Images of Text](http://www.w3.org/TR/UNDERSTANDING-WCAG20/visual-audio-contrast-text-presentation.html)

This is important for users with low vision who change zoom settings.

* Text is actual text (e.g. not images of text). ☐ Yes ☐ No
* Font sizes increase when you zoom in on the page. ☐ Yes ☐ No
* Text does not become pixelated when zooming in on the page. ☐ Yes ☐ No
* Items do not become jumbled when zooming in on the page. ☐ Yes ☐ No

## Usability

Many users have a non-apparent disability, such as a traumatic brain injury or a cognitive or learning disability that affects their ability to process information. Clear organization of information is vital for these users.

### Clear and Simple Content

**Role:** Developer

**Resources:** [Understanding 2.2.2 – Pause, Stop, Hide](http://www.w3.org/TR/UNDERSTANDING-WCAG20/time-limits-pause.html)

* Fonts are basic, legible, easy to read. ☐ Yes ☐ No
* The viewing area is not crowded or chaotic. ☐ Yes ☐ No
* There is plenty of white space. ☐ Yes ☐ No
* There is no flashing content, blinking or moving text. ☐ Yes ☐ No

### Consistency and Logic in Visual Navigation

**Role:** Developer

**Resources:** [Understanding 3.2.3 - Consistent Navigation](http://www.w3.org/TR/UNDERSTANDING-WCAG20/consistent-behavior-consistent-locations.html), [Understanding 3.2.4 - Consistent Identification](http://www.w3.org/TR/UNDERSTANDING-WCAG20/consistent-behavior-consistent-functionality.html)

* Menus are consistent across the entire product. ☐ Yes ☐ No
* Visual navigation is logical. ☐ Yes ☐ No

## Testing Non-Audio Access

**Role:** Developer, Designer

**Resources:** [Understanding 1.2.1 - Audio-only and Video-only (Prerecorded)](http://www.w3.org/TR/UNDERSTANDING-WCAG20/media-equiv-av-only-alt.html), [Understanding 1.2.2 - Captions (Prerecorded)](http://www.w3.org/TR/UNDERSTANDING-WCAG20/media-equiv-captions.html), [Understanding 1.2.4 - Captions (Live)](http://www.w3.org/TR/UNDERSTANDING-WCAG20/media-equiv-real-time-captions.html), [Understanding 2.2.2 – Pause, Stop, Hide](http://www.w3.org/TR/UNDERSTANDING-WCAG20/time-limits-pause.html)

This includes audio files such as podcasts as well as videos.

* ☐ N/A (There is no audio or video content.)
* Users have control over whether or not to start playing the video or audio. ☐ Yes ☐ No
* All videos have captions. ☐ Yes ☐ No
* Existing captions are accurate. ☐ Yes ☐ No
* Captions have sufficient contrast. ☐ Yes ☐ No
* All audio files have a link to a transcript. ☐ Yes ☐ No

## Downloadable Files

**Role:** Developer, Designer, Content Creator

[Resources for creating accessible documents](https://at.mo.gov/it-access/ict-electronic-documents.html)

Documents that are linked for download from a site also need to be accessible.

* ☐ N/A (There are no downloadable files.)
* PDFs are searchable / OCR’d (you can highlight or search text in the document). ☐Yes ☐No ☐ N/A
* PDFs have tags and the reading order is logical. ☐Yes ☐No ☐ N/A
* PDFs have alt text for non-text elements. ☐Yes ☐No ☐ N/A
* Word documents have hierarchical headings. ☐Yes ☐No ☐ N/A
* Word documents have alt text on non-text elements. ☐Yes ☐No ☐ N/A
* PowerPoint slides have logical reading order. ☐Yes ☐No ☐ N/A
* PPT slides have alt text on non-text elements. ☐Yes ☐No ☐ N/A
* PPT slides have sufficient contrast.☐Yes ☐No ☐ N/A