



Assistive Technologies Web Accessibility Guidelines

Document Information and Revision History

Version	Date	Author(s)	Revision Notes
1.0	11/07/2008	KHewak, Web Services	Draft

1	Why is Web Accessibility Important?	2
2	Assistive Technology	2
2.1	What is assistive technology?	2
2.2	Common assistive technologies & adaptive strategies include:.....	2
2.3	How do assistive technologies work?	2
3	Adaptations for Varying Disabilities	3
3.1	Visual.....	3
3.1.1	<i>Needs</i>	3
3.2	Hearing.....	3
3.2.1	<i>Needs</i>	3
3.2.2	<i>Solutions</i>	3
3.3	Mobility	4
3.3.1	<i>Barriers that people with motor disabilities affecting the hands or arms may encounter include:</i>	4
3.3.2	<i>Needs</i>	4
3.4	Cognitive and learning disabilities	4
3.4.1	<i>Barriers can include:</i>	4
4	Guidelines	4
4.1	Graphics and Media.....	4
4.2	Text, Data and Content Presentation (incl. Tables and Frames).....	5
4.3	Forms and Fields.....	6
4.4	Links, Navigation and New Windows	6
4.5	Non-HTML Content:	7
4.6	Design and Development.....	7
4.7	Site Search.....	7
5	References:	8
6	Appendix A: 10 Quick Tips	8



1 Why is Web Accessibility Important?

The internet opens up a world of opportunities for people with disabilities. It offers unprecedented access to information in many fields such as education, employment, government, commerce, health care, recreation, and more.

It is essential, and sometimes mandatory, that websites be accessible in order to provide equal access and equal opportunity to people with disabilities.

Making the web accessible also helps those with disabilities more actively participate in society.

Accessibility barriers to print, audio, and visual media can be more easily overcome through web technologies and web development.

2 Assistive Technology

2.1 What is assistive technology?

Assistive technology is any product that removes or reduces barriers for people with disabilities. They enable people to perform tasks they were previously unable to accomplish.

Some assistive technologies can be used together.

2.2 Common assistive technologies & adaptive strategies include:

- Screen Magnifiers
- Screen readers
- Mouth stick
- Head wand
- Single-switch access
- Over-sized track ball mouse
- Closed captioning
- Adaptive keyboard or Keyboard enhancements; alternative keyboards or switches
- Eye tracking or Scanning software
- Highlighting software
- Speech synthesis
- Tabbing through elements
- Text browsers
- Visual notification
- Voice browsers

2.3 How do assistive technologies work?

They use the coding and content of your website, and make it accessible to those using assistive technologies.



3 Adaptations for Varying Disabilities

The four main categories of disability types are visual, hearing, mobility and cognitive. Each disability type requires certain adaptations in the development of a web site.

3.1 Visual

Visual disabilities include:

- Blindness
- Low vision
- Color Blindness

3.1.1 Needs

- Text alternatives on images; screen readers can not obtain information from just the image
- Make site navigable via keyboard (via Tab and Enter) instead of mouse
- Use multiple attributes on text (headings versus size, etc.) so that assistive aids can identify the attributes
- High contrast for color blindness and low vision; if information is presented by color alone, information can be missed

3.2 Hearing

This includes those users who are deaf or hard of hearing.

3.2.1 Needs

- Provide a visual form of information for audio content
- Content related images
- Clear, simple language

3.2.2 Solutions

This could include the following solutions:

- Captions for audio content
- Blinking error messages
- Transcripts of audio
- Supplemental images to highlight context



3.3 Mobility

Motor disabilities include conditions that create the inability to use a mouse, slow response time, limited fine motor control, such as:

- Weakness
- Limitations of muscular control (such as involuntary movements, lack of coordination, or paralysis)
- Limitations of sensation, joint problems, or missing limbs
- Pain that impedes movement.
- Speech disabilities

3.3.1 Barriers

For people with motor disabilities affecting the hands or arms, barriers may include:

- time-limited response options on Web pages
- browsers and authoring tools that do not support keyboard alternatives for mouse commands
- forms that cannot be tabbed through in a logical order

3.3.2 Needs

- Voice input
- Alternative input mode (for speech impairments)

3.4 Cognitive and learning disabilities

This can include individuals with visual and auditory perceptual disabilities, including dyslexia; individuals who may have difficulty processing large amounts of information (language; numbers e.g. dyscalculia); and those who may have difficulty processing spoken language when heard.

3.4.1 Barriers

- use of unnecessarily complex language on Web sites
- lack of graphics on Web sites
- lack of clear or consistent organization of Web sites

4 Guidelines

By addressing these standards, you will ensure the greater universal accessibility of your web content.

4.1 Graphics and Media

- Ensure that text and graphics are understandable when viewed without color



may

If color alone is used to convey information, people who cannot differentiate between certain colors and users with devices that have non-color or non-visual displays will not receive the information. When foreground and background colors are too close to the same hue, they not provide sufficient contrast when viewed using monochrome displays or by people with different types of color deficits

- Minimize use of graphics
- When using graphics, always choose clear images
- Provide text equivalents for every non-text element (images, graphical representations, image map regions, animations, applets and programmatic objects, frames, scripts, etc.) via “alt”, “longdesc”, or in element context

Alternative text is especially helpful for people who are blind and rely on a screen reader to have the content of the website read to them

- Caption and/or provide transcripts for media
- Videos and live audio must have captions and a transcript. With archived audio, a transcription may be sufficient
- Ensure that users can skip, pause or play multimedia and flash presentations
 - Never blur images
 - When graphic contains important information, provide it in text format as well
 - Do not use graphics to indicate a state i.e. on/off; yes/no

4.2 Text, Data and Content Presentation (incl. Tables and Frames)

- Ensure that text is understandable when viewed without color.
- Do not use very small text for body text
- Do not use small or subtle text for headings and categories
- Always create a good contrast between text and the page background
- Do not rely image background to create contrast with body text
- Make sure screen magnifiers can magnify your site text
- Provide headings for data tables

Tables that are used to organize tabular data should have appropriate table headers (the <th> element). Data cells should be associated with their appropriate headers, making it easier for screen reader users to navigate and understand the data table.

- Allow users to skip repetitive elements on the page
- You should provide a method that allows users to skip navigation or other elements that repeat on every page. This is usually accomplished by providing a "Skip to Content," "Skip to Main Content," or "Skip Navigation" link at the top of the page which jumps to the main content of the page
- Make sure content is clearly written and easy to read. Be concise and remove superfluous text
 - Make content easy to understand



- Write clearly and concisely using clear fonts
- Use headings and lists appropriately
- Confirm company name once homepage is loaded
- Confirm what the page is once it has loaded
- When users must make a choice, keep all possibilities in the same area
- When users make a choice, warn them that something is going to happen and indicate their options
- Design pages consistently
- Avoid superfluous splash or cover pages before your homepage
- Minimize need for scrolling
- Avoid use of parentheses and asterisks. They are distracting to users with screen readers
- Avoid using tables for aesthetic page design
- Avoid using large tables
- Summarize all tables
- Describe all frames
- Ensure that alphabetic lists in tables also match the list screen readers process

4.3 Forms and Fields

- Limit the amount of information that forms require; collect the minimum
- Ensure users can complete and submit all forms
- Ensure that every form element (text field, checkbox, dropdown list, etc.) has a label and make sure that label is associated to the correct form element using the `<label>` tag
- Put text for field labels very close to the actual field
- Ensure the user can submit the form and recover from any errors, such as the failure to fill in all required fields
- Do not use red or yellow to indicate form errors
- Make sure tab order is logical
- Stack fields vertically
- Put 'Go' buttons close to single selection boxes or entry fields.
- Put the 'Submit' button as close as possible to the last field of entry on a form
- Put instructions before a field, not after it

4.4 Links, Navigation and New Windows

- Ensure links make sense out of context
Every link should make sense if the link text is read by itself. Screen reader users may choose to read only the links on a web page. Avoid using phrases like "click here" and "more"
- Avoid using pop-up windows



- Avoid opening new browser windows. If you do, ensure any easy way to get back to site's main homepage
- Do not rely on rollover text to convey information
- Avoid using cascading menus
- Limit the number of links on a page
- Avoid very small buttons and tiny text for links
- Leave space between links and buttons
- Avoid using images as the ONLY way to link to something
- Ensure important commands appear as their own unique links
- Underline all links
- Create links within text when it makes sense. Use additional buttons only when necessary

4.5 Non-HTML Content:

- Ensure accessibility of PDF files, Word documents, PowerPoint presentations and Adobe Flash content

PDF documents and other non-HTML content must be as accessible as possible. Consider using HTML instead or an accessible alternative. PDF documents should also include a series of tags to make it more accessible. A tagged PDF file looks the same, but it is almost always more accessible to a person using a screen reader

4.6 Design and Development

- Follow basic rules of good design
- Do not rely on color alone to convey meaning
The use of color can enhance comprehension, but do not use color alone to convey information. That information may not be available to a person who is colorblind and will be unavailable to screen reader users
- Make JavaScript accessible
Ensure that JavaScript event handlers are device independent (e.g., they do not require the use of a mouse) and make sure that your page does not rely on JavaScript to function.
- Use Markup and style sheets and do so properly
- Mark up documents with the proper structural elements. Control presentation with style sheets rather than with presentation elements and attributes

4.7 Site Search

- Offer search engines that forgive spelling errors and provide alternatives
- Do not put search box in unlikely spot
- Clearly describe search results
- Inform users when they haven't entered anything in search box
- Do not present search results in a table



5 References:

This document relied heavily upon the following resources:

- <http://www.bbc.co.uk/guidelines/newmedia/accessibility/>
- <http://www.w3.org/WAI/EO/Drafts/PWD-Use-Web/#diff>
- <http://www.webaim.org/intro/>
- <http://www.abilitynet.org.uk/>
- <http://www.useit.com/>
- Ryerson.ca Accessibility Review: Outline and Guidelines, Devlin eBusiness Architects

6 Appendix A: 10 Quick Tips

Source: www.w3.org/WAI/quicktips/Overview.php

The links in the Quick Tips below mostly go to the [techniques documents](#) that provide implementation guidance - including explanations, strategies, and detailed markup examples.

1. **[Images & animations](#)**: Use the **alt** attribute to describe the function of each visual.
2. **Image maps**. Use the [client-side map](#) and [text for hotspots](#).
3. **Multimedia**. Provide [captioning and transcripts of audio](#), and [descriptions of video](#).
4. **[Hypertext links](#)**. Use text that makes sense when read out of context. For example, avoid "click here."
5. **[Page organization](#)**. Use [headings](#), [lists](#), and consistent structure. Use [CSS](#) for layout and style where possible.
6. **Graphs & charts**. Summarize or use the [longdesc](#) attribute.
7. **Scripts, applets, & plug-ins**. Provide [alternative content](#) in case active features are inaccessible or unsupported.
8. **Frames**. Use the **noframes** element and meaningful [titles](#).
9. **[Tables](#)**. Make line-by-line reading sensible. Summarize.
10. **[Check your work](#)**. [Validate](#). Use tools, checklist, and guidelines at w3.org/TR/WCAG