
# State of Colorado

# ADA IT Accessibility Standards For the Blind and Visually Impaired

**and**

# IT Accessibility Procurement Criteria

**Adopted January 19, 2001**

**Version 2.0**
**July 2005**

## State of Colorado
## ADA Standards Work Committee

# State of Colorado
# Adopted ADA IT Accessibility Standards and IT Accessibility Procurement Criteria

Submitted by Governor's Office of Innovation & Technology (OIT)
ADA Standards (for visually impaired) Work Committee
January 19, 2001

The following ADA Standards were adopted by the Commission on Information Management (IMC) on January 19, 2001 as required by House Bill 00-1269, approved June 1, 2000, for information technology access for individuals who are blind or visually impaired.

HB 1269 requires:

1. the IMC to develop, on or before 2/1/01, nonvisual access standards for information technology systems employed by state agencies that:
   - A) provide blind or visually impaired individuals with access to information stored electronically by ensuring compatibility with adaptive technology systems so that such individuals have "full and equal access" when needed: AND
   - B) are designed to present information, including prompts used for interactive communications, in formats intended for both visual and nonvisual use, such as the use of text-only options.

2. the head of each state agency to develop a written, as part of its annual IT plan and to develop proposed budget requests to implement the nonvisual access standards for its agency at publicly accessible facilities.

3. the IMC to approve minimum standards and criteria to be used in approving/rejecting procurements by state agencies for adaptive technologies for nonvisual access uses in compliance with section 24-37.5-202, CRS by June 1, 2001.

4. the IMC/OIT to consult with state agencies and representatives of individuals who are blind or visually impaired in developing the nonvisual access standards and the procurement criteria.

5. the IMC to develop a "technology access clause that may be used in contracts by state agencies when they purchase, upgrade, or replace information technology equipment or software. It shall require that IT supplied by a vendor meet the standards set by the IMC.

Please note that HB 1269 does not require the installation of software or peripheral devices used for nonvisual access when the IT is being used by individuals who are not blind or visually impaired or the purchase of nonvisual adaptive equipment.

PROCESS:
In December 2000, the Governor's Office of Innovation and Technology (OIT) assembled a work committee to develop ADA standards for information technology access for individuals who are blind or visually impaired per the requirements established by HB 1269. The ADA Standards Work Committee is comprised of a cross section of private and public sector individuals as well as visually impaired persons. The Committee met initially on December 18, 2000 to develop proposed standards, using the W3C guidelines as its primary source document. On December 21, 2000 the Department of Justice issued its final accessibility standards for information technology as required by section 508 of the Rehabilitation Act Amendments of 1998. The Committee met again on January 8, 2001and compared the W3C guidelines with the applicable portions of the Department of Justice standards. Because the W3C standards were substantially integrated into the Department of Justice section 508 standards, the following recommended standards comport with both the applicable Department of Justice section 508 standards and the W3C private sector guidelines.

Pursuant to the dictates of HB 1269, the Work Committee's initial proposed standards focus on design criteria for web-based publicly accessible information. The standards cover the following specific categories: Equivalents, Color, Markup Language/Style Sheets, Tables, Natural Language, Time-Sensitive Content, and Dynamic Content and Device Independent.

**RECOMMENDATION:**
**Due to the quickly changing nature of technology, the ADA Standards Work Committee recommends that annual reviews of these standards be conducted and the standards be updated appropriately.**

## ADOPTED PROCUREMENT CRITERIA:

The following procurement criteria was adopted by the Commission on Information Management (IMC) as specified by Colorado Revised Statutes, and went into effect July 1, 2001:

> **State of Colorado Procurement Rules,**
> **Article 104, Specifications**
>
> **"All communication and information technology procurements, agreements, and contracts shall comply with Colorado Information Technology Accessibility Standards for the Blind and Visually impaired."**

## ADOPTED IT ACCESSIBILITY STANDARDS:

1. The following terms, as defined, shall be used in interpreting the standards:
   A. Accessible – Content is accessible when it may be used by someone with a disability.
   B. Applet – A program inserted into a Web page.
   C. Assistive technology – Software or hardware that has been specifically designed to assist people with disabilities in carrying out daily activities. Assistive technology includes wheelchairs, reading machines, devices for grasping, etc. In the area of Web Accessibility, common software-based assistive technologies include screen readers, screen magnifiers, speech synthesizers, and voice input software that operate in conjunction with graphical desktop browsers (among other user agents). Hardware assistive technologies include alternative keyboards and pointing devices.
   D. ASCII art – ASCII art refers to text characters and symbols that are combined to create an image. For example ";-)" is the smiley emoticon.
   E. Authoring tool – HTML editors, document conversion tools, tools that generate Web content from databases are all authoring tools.
   F. Backward compatible – Design that continues to work with earlier versions of a language, program, etc.
   G. Braille – Braille uses six raised dots in different patterns to represent letters and numbers to be read by people who are blind with their fingertips. A Braille display, commonly referred to as a "dynamic Braille display," raises or lowers dot patterns on command from an electronic device, usually a computer. The result is a line of Braille that can change from moment to moment. Current dynamic Braille displays range in size from one cell (six or eight dots) to an eighty-cell line, most having between twelve and twenty cells per line.
   H. Caption – A caption is a text transcript for the audio track of a video presentation that is synchronized with the video and audio tracks. Captions are generally rendered visually by being superimposed over the video, which benefits people who are deaf and hard-of-hearing, and anyone who cannot hear the audio (e.g., in a crowded room).
   I. Collated text transcript – A collated text transcript combines (collates) captions with text descriptions of video information (descriptions of the actions, body language, graphics, and scene changes of the video track).
   J. Content developer – someone who authors Web pages or designs Web sites.
   K. Deprecated – A deprecated element or attribute is one that has been outdated by newer constructs. Deprecated elements may become obsolete in future versions of HTML. Authors should avoid using deprecated elements and attributes. User agents should continue to support them for reasons of backward compatibility.
   L. Device independent – Users must be able to interact with a user agent (and the document it renders) using the supported input and output devices of their choice and according to their needs. Input devices may include pointing devices, keyboards, Braille devices, head wands, microphones, and others. Output devices may include monitors, speech synthesizers, and Braille devices.

Please note that "device-independent support" does not mean that user agents must support every input or output device. User agents should offer redundant input and output mechanisms for those devices that are supported. For example, if a user agent supports keyboard and mouse input, users should be able to interact with all features using either the keyboard or the mouse.

M. Document Content, Structure, and Presentation – The content of a document refers to what it says to the user through natural language, images, sounds, movies, animations, etc. The structure of a document is how it is organized logically (e.g., by chapter, with an introduction and table of contents, etc.). An element (e.g., P, STRONG, BLOCKQUOTE in HTML) that specifies document structure is called a **structural element**. The presentation of a document is how the document is rendered (e.g., as print, as a two-dimensional graphical presentation, as a text-only presentation, as synthesized speech, as Braille, etc.). An element that specifies document presentation (e.g., B, FONT, CENTER) is called a **presentation element**.

   Consider a document heading, for example. The content of the heading is what the heading says (e.g., "Sailboats"). In HTML, the heading is a structural element marked up with, for example, an H2 element. Finally, the presentation of the heading might be a bold block text in the margin, a centered line of text, a title spoken with a certain voice style (like an aural font), etc.

N. Dynamic HTML (DHTML) – DHTML is the marketing term applied to a mixture of standards including HTML, style sheets, the Document Object Model (DOM) and scripting.

O. Element – This document uses the term "element" both in the strict SGML sense (an element is a syntactic construct) and more generally to mean a type of content (such as video or sound) or a logical construct (such as a heading or list). The second sense emphasizes that a guideline inspired by HTML could easily apply to another markup language.

   Note that some (SGML) elements have content that is rendered (e.g., the P, LI, or TABLE elements in HTML), some are replaced by external content (e.g., IMG), and some affect processing (e.g., STYLE and SCRIPT cause information to be processed by a style sheet or script engine). An element that causes text characters to be part of the document is called a text element.

P. Equivalent – Content is "equivalent" to other content when both fulfill essentially the same function or purpose upon presentation to the user. In the context of this document, the equivalent must fulfill essentially the same function for the person with a disability (at least insofar as is feasible, given the nature of the disability and the state of technology), as the primary content does for the person without any disability. For example, the text "The Full Moon" might convey the same information as an image of a full moon when presented to users. Note that equivalent information focuses on fulfilling the same function. If the image is part of a link and understanding the image is crucial to guessing the link target, an equivalent must also give users an idea of the link target. Providing equivalent information for inaccessible content is one of the primary ways authors can make their documents accessible to people with disabilities.

As part of fulfilling the same function of content, an equivalent may involve a description of that content (i.e., what the content looks like or sounds like). For example, in order for users to understand the information conveyed by a complex chart, authors should describe the visual information in the chart.

Since text content can be presented to the user as synthesized speech, Braille, and visually displayed text, these guidelines require text equivalents for graphic and audio information. Text equivalents must be written so that they convey all essential content. Non-text equivalents (e.g., an auditory description of a visual presentation , a video of a person telling a story using sign language as an equivalent for a written story, etc.) also improve accessibility for people who cannot access visual information or written text, including many individuals with blindness, cognitive disabilities, learning disabilities, and deafness.

Equivalent information may be provided in a number of ways, including through attributes (e.g., a text value for the "alt" attribute in HTML and SMIL), as part of element content (e.g., the OBJECT in HTML), as part of the document's prose, or via a linked document (e.g., designated by the "longdesc" attribute in HTML or a description link). Depending on the complexity of the equivalent, it may be necessary to combine techniques (e.g., use "alt" for an abbreviated equivalent, useful to familiar readers, in addition to "longdesc" for a link to more complete information, useful to first-time readers).

One example of a non-text equivalent is an auditory description of the key visual elements of a presentation. The description is either a pre-recorded human voice or a synthesized voice (recorded or generated on the fly). The auditory description is synchronized with the audio track of the presentation, usually during natural pauses in the audio track. Auditory descriptions include information about actions, body language, graphics, and scene changes.

Q. Image – a graphical presentation.

R. Image map – An image that has been divided into regions with associated actions. Clicking on an active region causes an action to occur.

When a user clicks on an active region of a client-side image map, the user agent calculates in which region the click occurred and follows the link associated with that region. Clicking on an active region of a server-side image map causes the coordinates of the click to be sent to a server, which then performs some action.

Content developers can make client-side image maps accessible by providing device-independent access to the same links associated with the image map's regions. Client-side image maps allow the user agent to provide immediate feedback as to whether or not the user's pointer is over an active region.

S. Important – Information in a document is important if understanding that information is crucial to understanding the document.

T. Text link – The rendered text content of a link.

2. A text equivalent for every non-text element shall be provided (e.g., via “alt”, “longdesc”, or in element content).
3. Equivalent alternatives for any multimedia presentation shall be synchronized with the presentation.
4. Web pages shall be designed so that all information conveyed with color is also available without color, for example from context or markup.
5. Documents shall be organized so they are readable without requiring an associated style sheet.
6. Redundant text links shall be provided for each active region of a server-side image map.
7. Client-side image maps shall be provided instead of server-side image maps except where the regions cannot be defined with an available geometric shape.
8. Row and column headers shall be identified for data tables.
9. Markup shall be used to associate data cells and header cells for data tables that have two or more logical levels of row or column headers.
10. Frames shall be titled with text that facilitates frame identification and navigation.
11. Pages shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.
12. A text-only page, with equivalent information or functionality, shall be provided to make a web site comply with the provisions of this part, when compliance cannot be accomplished in any other way. The content of the text-only page shall be updated whenever the primary page changes.
13. When pages utilize scripting languages to display content, or to create interface elements, the information provided by the script shall be identified with functional text that can be read by assistive technology.
14. When a web page requires that an applet, plug-in or other application be present on the client system to interpret page content, the page must provide a link to a plug-in or applet that complies with standards 1 through 12 above.
15. When electronic forms are designed to be completed on-line, the form shall allow people using assistive technology to access the information, field elements, and functionality required for completion and submission of the form, including all directions and cues.
16. A method shall be provided that permits users to skip repetitive navigation links.
17. When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.
18. Textual information shall be provided through operating system functions for displaying text. The minimum information that shall be made available is text content, text input caret location, and text attributes.
19. Applications shall not override user selected contrast and color selections and other individual display attributes.
20. When animation is displayed, the information shall be displayable in at least one non-animated presentation mode at the option of the user.
21. Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.
22. When a product permits a user to adjust color and contrast settings, a variety of color selections capable of producing a range of contrast levels shall be provided.
23. Software shall not use flashing or blinking text, objects, or other elements having a flash or blink frequency greater than 2 Hz and lower than 55 Hz.
24. The initial web page shall provide a contact name and e-mail address for feedback.