

**STATE OF UTAH**

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**WEB STANDARDS AND GUIDELINES:  
PART 4.0 ACCESSIBILITY**

Department of Technology Services

January 31, 2011



# STATE OF UTAH WEB STANDARDS AND GUIDELINES: PART 4.0

## ACCESSIBILITY

Department of Technology Services  
Office of the Chief Technology Officer

January 31, 2011  
DTS Technology Standard 4300-0001-04

**Status:** TBD  
**Effective Date:** March 2011  
**Next Review Date:** March 2012  
**Approved By:** Stephen Fletcher, CIO

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### LEGAL AND STATUTORY AUTHORITY

#### AUTHORITY

The Department of Technology services is charged in *Utah Code 63F-1-104 et seq* with the overall responsibility for defining technology standards. The Chief Information Officer (CIO) has rulemaking and policy making authority for technology standards and practices for the Executive Branch agencies as specified in Utah Code 63F-1-206 et seq, with the exception of those agencies exempted in Utah Code 63F-1-102.

#### IMPLEMENTATION

Application of these standards, recommendations, and guidelines shall be applied to all new Web site development in the State of Utah commencing March 2011 for items designated as “required.” Existing Web sites should be made compliant as the sites are redesigned. Recommended practices and guidelines should be incorporated on a best effort basis.

#### CHANGES AND REVISIONS

Suggestions for changes, revisions, and additions to this document are encouraged. This standards document will be subject to review and revision one year from the initial date of publication, and every twelve months thereafter. Change recommendations will follow approved Architecture Review Board processes for enterprise standards approval and changes.

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## EXECUTIVE SUMMARY

The Web poses challenges and obstacles for users with disabilities. To ensure equal access to electronic information, the State of Utah has established standards and guidelines to guarantee accessibility to users with visual, physical, or developmental disabilities. A Web site that is accessible and usable improves the chances that Utah citizens can locate the information they are looking for when they need it. A Forrester Research report entitled *The Wide Range of Abilities and Its Impact on Computer Technology* revealed that 57% of working-age adults in the United States are likely to benefit from the use of accessible technology. A useful testing site for accessibility using Section 508 and WCAG is available at <http://checkwebsite.erigami.com/accessibility.html>.

This section of the guideline provides background information on state and federal laws addressing accessibility. It provides additional information on the two accessibility standards, and the tools available to help test and evaluate Web sites. Designing a Web site that is accessible and usable improves the chances that Utah citizens can locate the information they are looking for when they need it.

Another issue impacting usability is the fact that Utah has a growing population of people that do not speak English. One part of effective writing is developing content that is easier to translate. Accessibility includes making resources and services available to people who are not native speakers of English; this means that "translatability" is one of the criteria. The W3C [guideline 14](#) addresses keeping content clear and simple.

In response to the need to insure equal access to electronic and information technologies, the state of Utah has developed a set of standards for Web page design. The State of Utah is committed to providing an accessible web presence that enables the public full access to Utah government information and services. Web accessibility means that people with disabilities can use the Web. Web accessibility encompasses all disabilities that affect access to the Web, including visual, auditory, physical, speech, cognitive, and neurological disabilities.

Web accessibility means that people with disabilities can perceive, understand, navigate, and interact with the Web, and that they can contribute to the Web. Web accessibility also benefits others, including older people with changing abilities due to aging. Understanding that government has a responsibility to provide service to all citizens and businesses in its jurisdiction, the State of Utah will make reasonable efforts to accommodate all users by following the W3C recommendations. This policy describes these accessibility standards and may be updated periodically. The policy can be viewed at <http://www.utah.gov/accessibility.html>, and is reproduced within this Accessibility section.

The following key topic areas are covered in this section of the Web Standards and Guidelines:

- 4.1 Utah Accessibility Policy
- 4.2 Federal Law
- 4.3 Standards - Section 508 and
- 4.4 Standards - W3C (World Wide Web Consortium)
- 4.5 Web Accessibility Design Issues and Best Practices
- 4.6 Accessibility and Document Image Files
- 4.7 Screen Readers
- 4.8 Multimedia, Audio, and Video Files
- 4.9 Non-Standard Extensions
- 4.10 JAVA and JavaScript Accessibility
- 4.11 Usability Tools
- 4.12 Other Usability Resources

## 4.0 ACCESSIBILITY AND USABILITY GUIDELINES

### 4.1 UTAH ACCESSIBILITY POLICY

#### GUIDANCE: REQUIRED

Understanding that government has a responsibility to provide service to all citizens and businesses in its jurisdiction, the State of Utah will make reasonable efforts to accommodate all users by following the W3C recommendations. This policy describes these accessibility standards and may be updated periodically.

#### Design Standards

***Straightforward Design*** - Our website uses simple information architecture, organized navigation and reliable headings throughout. Utah has adopted a statewide header used on every state agency website to provide consistency to the user and an easy way to navigate back to the home page regardless of location.

***Images With Alternative Text*** - This text provides further detail for an image or destination of a hyperlinked image. It is commonly called an ALT tag, and they are accessible to screen readers, and visible when the mouse is placed over the image. They also provide a description of graphics for people who have images turned off on their browser.

***Relative Font Sizing*** - The font size of the website can be modified (up or down) using the tool at the top of the page.

***The Navigation*** - The main navigation, located just below the title banner (Utah.gov logo), uses lists. Lists make it easier for screen readers to literally read down the list without having to sort through unnecessary code. Lists also allow the users to use the tab key to move from link to link.

***Style Sheets*** - Cascading Style Sheets (CSS) centralize the style information for the website. Using CSS allows for greater flexibility when a style change

is needed to accommodate a specific disability. It also keeps the code clean and is faster to download.

**Layout** - The design was built to accommodate the vast majority of visitors. Our website is best viewed at 1024 x 768 resolution, which was selected as it accommodates 96.3% of Utah.gov visitors.

**Image Maps** - When an image needs to be linked to several different locations, this is used rather than dividing the image into separate image files, and causing more confusion for screen readers.

**Multimedia** - When available, the transcripts of audio and video description are linked with the file.

**Hypertext Links** - Text is specifically chosen to make sense when read out of context, so all users know where they are going when they select a link.

**Scripts and AJAX** - Alternative methods for searching or alternative content are provided in case active features are inaccessible or unsupported by a users browser.

**Validate** - Our design work is checked using tools, checklists, and guidelines at <http://www.w3.org/TR/WCAG>.

## 4.2 FEDERAL LAW

### GUIDANCE: RECOMMENDED AND REQUIRED AS APPLICABLE

#### **Americans with Disabilities Act**

Facts About the Americans with Disabilities Act is available from the U.S. Equal Employment Opportunity Commission <http://www.eeoc.gov/facts/fs-ada.html>

Title I of the Americans with Disabilities Act of 1990, which took effect July 26, 1992, prohibits private employers, state and local governments, employment agencies and labor unions from discriminating against qualified individuals with disabilities in job application procedures, hiring, firing, advancement, compensation, job training, and other terms, conditions and privileges of employment.

Title II covers "public entities." "Public entities include any State or local government and any of its departments, agencies, or other instrumentalities. All activities, services, and programs of public entities are covered, including activities of State legislatures and courts, town meetings, police and fire departments, motor vehicle licensing, and employment. Unlike section 504 of the Rehabilitation Act of 1973, which only covers programs receiving Federal financial assistance, title II extends to all the activities of State and local governments whether or not they receive Federal funds." Additional information is available at <http://www.usdoj.gov/crt/ada/t2hlt95.htm>.

In September 1996, the Civil Rights Division of the Department of Justice (DOJ) issued an opinion statement (letter #204) which directly addressed the issue of Web accessibility. "States and local governments as well as places of public accommodation are required to . . . provide effective communication, regardless of whether they generally communicate

through print media, audio media, or computerized media such as the Internet. Covered entities that use the Internet for communications regarding their programs, goods, or services must be prepared to offer those communications through accessible means as well."

Section 504 of the Rehabilitation Act of 1973 prohibits discrimination based on disability in programs or activities receiving federal financial assistance. The U.S. Department of Education gives grants of financial assistance to schools and colleges and to certain other entities, including vocational rehabilitation programs. The U.S. Department of Education's Section 504 regulation is enforced by the Office for Civil Rights (OCR) and is in the federal code of regulations at [34 CFR 104.34 CFR 104](#) .

Under CFR 104.41 Subpart E applies to postsecondary education programs and activities, including postsecondary vocational education programs and activities, that receive or benefit from Federal financial assistance and to recipients that operate, or that receive or benefit from Federal financial assistance for the operation of, such programs or activities.

Additional information is available from the [U.S. Department of Justice](#).

For additional information see "The Americans with Disabilities Act of 1990", at <http://www.eeoc.gov>

Section 508 of the [Workforce Investment Act](#) [Workforce Investment Act](#) applies to Federal departments and agencies. However, state agencies that receive Federal funds under the Technology Related Assistance for Individuals with Disabilities Act of 1988, are required by that Act to comply with Section 508.

The **U.S. Department of Justice** issued "Enforcement of Title VI of the Civil Rights Act of 1964—[National Origin Discrimination Against Persons with Limited English Proficiency](#) [National Origin Discrimination Against Persons with Limited English Proficiency](#) ," a guidance document that sets forth compliance standards to ensure that programs and activities provided in English are accessible to individuals with limited English proficiency. These guidelines may be helpful to an agency in determining the parts of its Web site content that should be available in languages in addition to English. The guidelines recommend that agencies consider:

1. the number or proportion of people in the eligible service population with limited English proficiency;

the frequency with which those individuals contact the program;

the importance of the services provided; and

the level of federal funds provided to the recipient agency, the frequency of client or individual contact with the program, the criticality of the services offered to the client or individual and the cost of providing the information in languages other than English.

### **4.3 STANDARDS—SECTION 508**

#### **GUIDANCE: RECOMMENDED AND REQUIRED AS APPLICABLE**

In 1998 Congress modified the Rehabilitation Act to include *Section 508, Electronic and Information Technology Accessibility Standards*. Section 508 eliminates barriers in information technology and makes new opportunities for people with disabilities. The standards cover:

- Software Applications and Operating Systems
- Web-based Information or Applications
- Telecommunications Products
- Video and Multimedia Products
- Self Contained, Closed Products
- Desktop and Portable Computers

The Federal Access Board standards are available at <http://www.access-board.gov/508.htm>. The following is an extract from Section 508 of the Rehabilitation Act: § 1194.22 *Web-based Intranet and Internet Information and Applications*.

- (a) A text equivalent for every non-text element shall be provided (e.g., via "alt," "longdesc," or in element content).
- (b) Equivalent alternatives for any multimedia presentation should be synchronized with the presentation.
- (c) Web pages shall be designed so that all information conveyed with color is also available without color, for example from context or markup.
- (d) Pages shall be organized so they are readable without requiring an associated style sheet.
- (e) Redundant text links shall be provided for each active region of a server-side image map.
- (f) 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.
- (g) Row and column headers shall be identified for data tables.
- (h) 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.
- (i) Frames shall be titled with text that facilitates frame identification and navigation.
- (j) Pages shall be designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.
- (k) A text-only page (which can be provided by CSS), 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.

- (l) 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.
- (m) 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 compliant plug-in or applet.
- (n) 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.
- (o) A method shall be provided that permits users to skip repetitive navigation links.
- (p) When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required.

The following is an extract from the Section 508 Standards: § 1194.21 *Software Applications and Operating Systems*.

- (a) When software is designed to run on a system that has a keyboard, product functions shall be executable from a keyboard where the function itself or the result of performing a function can be discerned textually.
- (b) Applications shall not disrupt or disable activated features of other products that are identified as accessibility features, where those features are developed and documented according to industry standards. Applications also shall not disrupt or disable activated features of any operating system that are identified as accessibility features where the application programming interface for those accessibility features has been documented by the manufacturer of the operating system and is available to the product developer.
- (c) A well-defined on-screen indication of the current focus shall be provided that moves among interactive interface elements as the input focus changes. The focus shall be programmatically exposed so that assistive technology can track focus and focus changes.
- (d) Sufficient information about a user interface element including the identity, operation, and state of the element shall be available to assistive technology. When an image represents a program element, the information conveyed by the image must also be available in text.
- (e) When bitmap images are used to identify controls, status indicators, or other programmatic elements, the meaning assigned to those images shall be consistent throughout an application's performance.



- (f) 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.
- (g) Applications shall not override user selected contrast and color selections and other individual display attributes.
- (h) When animation is displayed, the information shall be displayable in at least one non-animated presentation mode at the option of the user.
- (i) Color coding shall not be used as the only means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.
- (j) 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.
- (k) 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.
- (l) When electronic forms are used, 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.

The Section 508 standards were effective June 21, 2001. The Center for Information Technology Accommodation (CITA), in the U.S. General Services Administration's Office of Government-wide Policy, has been charged with the task of educating federal employees and building the infrastructure necessary to support Section 508 implementation. GSA has established a Web site at <http://www.section508.gov> with resources for understanding and implementing the requirements of Section 508.

## 4.4 STANDARDS—W3C

### GUIDANCE: REQUIRED

The *World Wide Web Consortium (W3C) Web Content Accessibility Guidelines*, at <http://www.w3.org/TR/WAI-WEBCONTENT> addresses a range of standards for text, audio, and video usage on Web sites. The W3C identifies three types of checkpoints as follows:

**Priority 1**—A Web content developer *must* satisfy this checkpoint. Otherwise, one or more groups will find it impossible to access information on the page. Satisfying this checkpoint is a basic requirement for some groups to be able to use Web documents.

**Priority 2**—A Web content developer *should* satisfy this checkpoint. Otherwise, one or more groups will find it difficult to access information on the page. Satisfying this checkpoint will remove significant barriers to accessing Web documents.

**Priority 3**—A Web content developer *may* address this checkpoint. Otherwise, one or more groups will find it somewhat difficult to access information on the page. Satisfying this checkpoint will improve access to Web documents.

### Conformance Levels

1. Conformance Level "A"  
All Priority 1 checkpoints are satisfied.
2. Conformance Level "AA"  
All Priority 1 and 2 checkpoints are satisfied.
3. Conformance Level "AAA"  
All Priority 1, 2, and 3 checkpoints are satisfied.

The full checklist, including coding tips to improve accessibility, is available at <http://www.w3.org/TR/WAI-WEBCONTENT/>

## 4.5 WEB ACCESSIBILITY GUIDELINES AND BEST PRACTICES

### GUIDANCE: RECOMMENDED

The purpose of this list is to provide a summary of the types of issues to consider when creating and designing accessible HTML pages:

- Include a [Document Type Declaration](#) (DOCTYPE) on all Web pages. This declares what version of HTML is in use on the page, and assists the browser in rendering the page correctly.
- Avoid the use of HTML tags or extensions which are supported by only one browser.
- Use headings, lists, and consistent structure.
- Avoid the unnecessary use of icons, graphics, and photographs.
- Check Web pages and images at different monitor resolutions, monitor sizes, and color depth settings.
- Use plain backgrounds and simple layouts to improve the readability of text.
- Ensure that foreground and background color combinations provide sufficient contrast when viewed by someone having color deficits or when viewed on a black and white screen.
- Maintain a standard page layout and navigation method throughout the Web site.

- Do not abbreviate dates (for example, use December 1, 2011 rather than 12/1/11).
- Ensure that dynamic content is accessible or provide an alternative presentation or page.
- Until user agents allow users to freeze moving content, avoid movement in pages.
- Test Web pages with a variety of Web technologies, including, not limited to, graphical browsers with the images turned off, browsers with JavaScript disabled, a text based browser, using only a keyboard, and using assistive technology.

#### **4.5.1 Text Based Design**

- Avoid using side by side presentation of text, for example, columns and tables.
- End all sentences, headers, list items, etc. with a period or other suitable punctuation.
- All online forms must be accessible.
- Avoid/limit the use of bitmap images of text, unless a textual alternative is also provided.
- Consider using numbers instead of bullets to help the user to remember items.
- Provide meaningful and descriptive text for hyperlinks. Do not use short hand (e.g., "click here"). Instead, use something like "Follow this link to our News Page." (Screen readers can search specifically for linked text, "click here" provides no indication of where the link will take them.) If documents are provided in a specialized format (e.g., PDF, etc.) provide the equivalent text in HTML or plain text format.

#### **4.5.2 Graphics and Images**

- Keep the number of colors in Web pages to a minimum.
- Minimize the file size and number of images displayed on any one page.
- Design background images at the lowest color depth and resolution possible.
- Ensure that text can always be clearly read at any location against the background.
- Avoid or limit using image maps.
- Use the "ALT attribute" with image files to provide meaningful text for all images and pictures.

#### **4.5.3 Multimedia Files**

- Provide text transcriptions of all video clips.
- If possible, include captions or text tracts with a description or sounds of the movie.
- Provide descriptive passages about speakers and events being shown through video clips.

- Give a written description of any critical information that is contained in audio files contained on the Web site.
- If there is a link to an audio file, inform the user of the audio file format and file size in kilobytes.

#### 4.5.4 Wireless Access

Agencies should plan for providing access to information and services from a Web page using a cellular phone or other hand-held device. Page layouts for mobile devices can be generated with CSS for small screen devices that provide a text display. Mobile device guidelines are available in the ARB report Mobile Web Standards and Guidelines which is available at: <http://www.utahta.wikispaces.net/file/view/Mobile+Web+Standards+and+Guidelines+7.17.09.pdf>

Since many new devices such as the ipad, and other announced tablets, and a variety of smart phones use touch for navigation, additional consideration is necessary for usability and accessibility on these types of devices. Many of these devices provide additional assistive technologies to enhance usability and accessibility. Agency Web developers need to be familiar with device capabilities and how to use them with Agency Web sites. Section 5 of Utah Web Standards provides [Mobile Platform Design Guidelines](#).

## 4.6 ACCESSIBILITY AND DOCUMENT IMAGE FILES

### GUIDANCE: REQUIRED

Information contained in special purpose documents (as discussed in Section 3.2.15) must be accessible. Document image files are copies of electronic files, created with a specific application (e.g., word processor) and then published on the Web in vendor-specific file formats (e.g., portable document format [PDF] files) that create an image of a document. This type of file may limit accessibility for persons with low visual acuity or blindness, hearing impairment, motion impairment, and other disabilities.

The most common form of document files in use by Utah agencies are Adobe PDF files. Adobe has added PDF accessibility information resources at <http://access.adobe.com>.

## 4.7 SCREEN READERS

### GUIDANCE: RECOMMENDED

Use a screen reader to test for accessibility and usability. The following is a partial list of current screen readers:

**JAWS**—The free demo download includes the synthesizer and everything a user needs to install and operate JAWS for a time limited period. The download is available from <http://www.freedomscientific.com/jaws-hq.asp>.

**Connect Outloud**—Connect Outloud, at [https://www.freedomscientific.com/fs\\_products/software\\_connect.asp](https://www.freedomscientific.com/fs_products/software_connect.asp), is a scaled down version of JAWS. Connect Outloud 2.0 is based on JAWS for Windows 4.02. However, Connect Outloud does not have the full power of JAWS, and is not as useful as the full JAWS package for site testing purposes. However, this may meet the needs of Web developers who just want to hear their Web sites.

**Windows-Eyes Professional** <http://www.gwmicro.com>

## 4.8 MULTIMEDIA, AUDIO, AND VIDEO FILES

### GUIDANCE: RECOMMENDED

Web casting, pod casting, and otherwise recording of public meetings and other State events has become commonplace and much of this material is accessible on many State Web sites. Accessibility for these types of media has been addressed in Section 508 and W3C standards and guidelines. File formats supported by the State are referenced in [Multimedia Internet Standards](#) 4300-0008.

### 4.8.1 Alternative Forms of Accommodation

#### GUIDANCE: RECOMMENDED

Under the Section 508 standards the "equivalent alternatives for any multimedia presentation should be captioned (open or closed captions) and synchronized with the presentation." The W3C Web Content Accessibility Guidelines addresses this requirement under the general recommendation to provide alternative forms of access for multimedia content. The alternatives are captions (that include dialog, and also identify who is speaking and notate sound effects and other significant audio) or provide an alternate method of access, including sign language, voice, fax, teletype, and captioning.

### 4.8.2 Captions

#### GUIDANCE: RECOMMENDED

The W3C standard Synchronized Multimedia Integration Language (SMIL), viewable at <http://www.w3.org/AudioVideo>, enables organizations to make accessible rich media/multimedia presentations which integrate streaming audio and video with images, text, or any other media type. The National Center for Accessible Media (NCAM) has developed and distributes (for free) the *Media Access Generator (MAGpie)*, at <http://ncam.wgbh.org/webaccess/magpie>, for creating captions and audio descriptions for rich media.

### 4.8.3 Audio Descriptions

**GUIDANCE: RECOMMENDED**

Audio description is the addition of text describing the important visual elements of the video that are necessary to understand the full intent of the information being presented. Audio description should be planned into the production of the video rather than added in post-production. National consulting on audio description and closed captioning is available from the WGBH Media Access Group at <http://main.wgbh.org/wgbh/pages/mag/services/description>.

## 4.9 NON-STANDARD EXTENSIONS

**GUIDANCE: RECOMMENDED**

State agencies should avoid vendor specific "non-standard" extensions and comply with applicable standards (e.g., [IEFT](#) (if using secure socket layer (SSL) connections), [W3C](#) (if using Cascading Style Sheets ([CSS](#)) and validated using the W3C [CSS Validation Service](#)). One procedure that can help State agencies avoid coding to a vendor specific technology is to test Web page designs with different browsers (e.g., Internet Explorer, Firefox, etc.) and screen readers.

## 4.10 JAVA AND JAVASCRIPT ACCESSIBILITY

**GUIDANCE: REQUIRED**

The World Wide Web Consortium (W3C) Web Content Accessibility Guidelines (version 1) address the use of JAVA under [Guideline 6. Ensure that pages featuring new technologies transform gracefully](#) and state "ensure that links that trigger scripts work when scripts are turned off or not supported (e.g., do not use "javascript" as the link target)." In the current draft of the Web Content Accessibility Guidelines they address the use of JAVA under [Principle 4: Content must be robust enough to work with current and future technologies](#). The success criteria for this is: "Technologies are used according to specification without exception."

## 4.11 USABILITY TOOLS

**GUIDANCE: RECOMMENDED**

Use multiple automated testing tools if possible and compare the results side-by-side. This will have the effect of emphasizing the more serious accessibility and usability problems with a software application, Web page, or other digital resource. Web sites should also be tested with a screen reader.

Agencies should use the tools recommended for testing Section 508 compliance as listed at <http://www.section508.gov/index.cfm?>

[FuseAction=TechTools](#) These tools and evaluate the accessibility errors to determine both the severity of the errors and the effort to fix them.

WebAIM (Web Accessibility in Mind) at Utah State University, has outlined a 7-step process for evaluating the level of accessibility of a Web site using a variety of easy-to-use tools and methods. The 7-step process is available at <http://www.webaim.org/techniques/evaluating><http://www.webaim.org/techniques/evaluating> .

The W3C [Evaluating Web Sites for Accessibility](#) describes methods for conducting preliminary reviews and conformance evaluations of Web sites.

The W3C collection of information about evaluation, repair, and transformation tools useful for Web content developers and Web users who wish to make the Web more accessible is available at: <http://www.section508.gov/index.cfm?FuseAction=TechTools>

## 4.12 OTHER USABILITY RESOURCES

### GUIDANCE: RECOMMENDED

The National Institute of Standards and Technology (NIST) Web Metrics Test has a number of tools that support testing and evaluation of Web site usability. Additional information and download instructions for the free tools currently available are listed at <http://zing.ncsl.nist.gov/WebTools/tech.html>.

### 4.12.1 Online Training

#### GUIDANCE: RECOMMENDED

Section 508—Web Accessibility Course, at <http://www.jimthatcher.com/webcourse1.htm>.

Access E-Learning (AEL), at <http://www.accesslearning.net>. The ten modules cover:

1. Accessibility Issues of Disabilities in Distance Education
2. Planning for Accessibility in Distance Education
3. Making PowerPoint Slides Accessible
4. Making Video Accessible
5. Making Flash Accessible
6. Making Word Documents Accessible
7. Making Excel Documents Accessible
8. Making PDF Documents Accessible
9. Making HTML Files Accessible
10. Making Scripts and Java Accessible

#### 4.12.2 Accessibility Questions for Web Site Page Designs

**GUIDANCE: RECOMMENDED**

- Do Web pages have a text equivalent for every non-text element (e.g., via "alt," "longdesc," or in element content)?
- Do multimedia presentations have equivalent alternatives synchronized with the presentation?
- Are Web pages designed so that all information conveyed with color is also available without color?
- Are pages organized so they are readable without requiring an associated style sheet?
- Are redundant text links provided for each active region of a server-side image map?
- Are client-side image maps provided instead of server-side image maps except where the regions cannot be defined with an available geometric shape?
- Are row and column headers identified for data tables?
- Do tables use markup to associate data cells and header cells for data tables that have two or more logical levels of row or column headers?
- If frames are used, are they titled with text that facilitates frame identification and navigation?
- Are Web pages designed to avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz?
- Is a text-only page, with equivalent information or functionality, provided to make a Web site accessible, when compliance cannot be accomplished in any other way? Is the content of the text-only page updated whenever the primary page changes?
- If Web pages utilize scripting languages to display content, or to create interface elements, is the information provided by the script identified with functional text that can be read by assistive technology?
- If a Web page requires that an applet, plug-in, or other application be present on the client system to interpret page content, does the page provide a link to the plug-in or applet?
- If electronic forms are designed to be completed online, does the form 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?
- Is a method provided that permits users to skip repetitive navigation links?
- If a timed response is required, is the user alerted and given sufficient time to indicate that more time is required?
- Are Web pages designed to work on older versions of browsers?



#### 4.12.3 Additional Accessibility and Usability Resources

1. Usability.Gov [www.usability.gov](http://www.usability.gov)
2. Accessible Web Authoring Resources and Education [AWARE](#)
3. The [HTML Writers Guild](#)
4. International Center for Disability Resources on the Internet <http://www.icdri.org/index.html>
5. Accessibility Primer Page <http://www.icdri.org/accprim.htm>
6. Policies Relating to Web Accessibility <http://www.w3.org/WAI/References/Policy>
7. Adaptive Technology Resource Center HTML Commandments <http://www.utoronto.ca/atrc/rd/html/commandments.html>
8. The Web Standards Project <http://www.webstandards.org>
9. W3C CSS resources: W3C CSS Validator: <http://jigsaw.w3.org/css-validator/>
10. W3C Style Sheets home page <http://www.w3.org/Style/>
11. Accessibility & Microsoft <http://microsoft.com/enable>

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#### COMMENTS

Please direct comments and suggestions on this document to Robert Woolley via e-mail at [bwoolley@utah.gov](mailto:bwoolley@utah.gov) or by phone at (801) 538-1072.