RECOMMENDATION ON ACCESSIBILITY STANDARDS FOR CALIFORNIA STATE WEB PAGES

INFORMATION ORGANIZATION, USABILITY, CURRENCY, AND ACCESSIBILITY WORKING GROUP

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Executive Summary

According to the 2000 Census, nearly 6.2 million Californians have an identified disability. By the year 2010, this number is expected to increase to 11 million, nearly 30% of the state's population.[1] State government is responsible for providing service to all citizens, including those with disabilities. Technology provides government the ability to reach its citizens electronically. It is imperative that the state's web presence be designed in a manner that is accessible to all citizens, and compatible with commonly used assistive technologies. When properly designed, the websites can provide an effective means for people with disabilities to interact with government.

In 2003, California amended Government Code 11135 – adopting, in its entirety, Section 508 of the amended U.S. Rehabilitation Act of 1973. Subpart B paragraphs 1194.22 (a)-(p) of Section 508 provide the Standards for accessibility of government websites. At the time the legislation was enacted state departments and agencies were not provided with explanations or interpretations of the law indicating how it should be implemented. Web accessibility training and defined resources for implementation are still desperately needed. Additionally, the law has not been systematically enforced at the state level.

Inaccessible web pages and services place the state at risk of lawsuits and loss of federal funds. Pursuing legal action is one method that citizens and businesses can enforce the rights defined in Government Code 11135. Departments receiving federal funding are subject to audit at any time; this includes their web pages and services associated with the program receiving the funds. Loss of citizen support for government is also a risk associated with insufficient access to government information and services. California is responsible for ensuring all constituents have equal access to state government.

This recommendation provides the business case for implementing and enforcing web accessibility standards for state websites. Standards and guidelines to support website accessibility are defined along with tips for how to implement them. A high level approach to implementation is provided. The recommendation addresses tools for implementation and references for additional information. Web accessibility training for webmasters and web developers will be provided by the Department of Rehabilitation in August and September 2006 to support the recommended standards. Information about the scheduled trainings and additional training needs are included in this document.

[1] 2000 Census and California Department of Finance Demographic Research Unit.

Section I – Business Case

California is a diverse state. As of the 2000 Census, there were an estimated 54 million Americans with disabilities, including nearly 6.2 million Californians with identified disabilities. By 2010, it is anticipated that there will be 11 million Californians with disabilities – that accounts for nearly 30% of the state population. It is important to understand that these statistics use only a narrow definition of disability. A study by Microsoft indicates that an approximate 57% of adult computer users could benefit from some sort of assistive technology.[2] As our population ages and technology becomes more ubiquitous, we will see an increase in the use of assistive technology including alternative pointing devices (trackballs instead of a mouse), screen magnifiers to compensate for vision loss, and many new and exciting technologies not yet even invented. As a technological leader, California should be in the forefront of ensuring that all of our citizens can fully participate in the electronic offerings of their government.

Beyond social justice and demographics, ensuring that all Californians have access to state information and online services is the law. California accepts billions of dollars from the Federal Government, and in accepting those funds we are required to adhere to the Federal Section 508 standard. Inaccessible websites put the state at risk for lawsuits and penalties from federal audits. Even when state monies are involved, California state law requires that websites be accessible.

All citizens and employees, including those who have disabilities, have a right to access California information resources and online services important for their personal well-being, commerce, recreation, and independence. It is imperative, on a humanitarian, technological, and financial basis that California state government incorporates accessibility as essential in its web development and presence as soon as possible. For every day of delay, hundreds of new state documents are introduced to the Web. If these documents are not accessible, California will have dissatisfied citizens and be at risk for employment-related and civil rights discrimination complaints, lawsuits, and the loss of federal funds.

History and Legislation

California state government is committed to ensuring this goal through the development and use of accessible electronic and information technology.

The California legislature followed the lead of the U.S. Congress that enacted Section 508 in the amended U.S. Rehabilitation Act of 1973 to eliminate barriers in information technology, to make available new opportunities for people with disabilities, and to encourage development of technologies that will help achieve these goals. The state legislature expressed this commitment in California Government Code 11135 that adopted, in its entirety, Section 508 of the amended U.S. Rehabilitation Act of 1973.

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[2] Microsoft Corporation Press Release. February 2, 2004. “New Research Study Shows 57 Percent of Adult Computer Users Can Benefit From Accessible Technology.” http://www.microsoft.com/presspass/features/2004/feb04/02-02aging.asp

With California's adoption of Section 508, state agencies and departments must provide both employees and members of the public with disabilities access to information that is comparable to the level of access available to those without disabilities.

To support the enacted legislation, Section 508 Subpart B, paragraphs 1194.22 (a)-(p) of the Technical Standards, were drafted to insure the accessibility of government web sites. These standards address web site development strategies needed to create a baseline level for accessibility. They provide accessibility standards for content provided on web sites, such as Portable Document Format (PDF), image files, audio and video, as well as data and information tables that pose a challenge to even the most skilled webmaster. These standards are available to state web developers through the federal government's Section 508 website (www.section508.gov).

The State of California, however, has not provided interpretations, training, or implementation tools to assist its web developers in implementing the standards. This has left many state agencies vulnerable to potential costly litigation. Over three years have passed since Section 508 was incorporated into state law. In that time, as previously mentioned, the amount of web content has grown exponentially. It is imperative, not only as a cost-effective measure, but also as a responsibility to our customers and employees with disabilities that these standards be enforced and that appropriate training and resources be made available immediately.

Recommended Approach

In addition to the Section 508 standards, the Internet's international standards body, the World Wide Web Consortium (W3C), has also proposed similar standards known as the Web Content Accessibility Guidelines (WCAG). The WCAG Version 1.0 Priority 1 and Priority 2 Checkpoints already incorporate the fourteen Section 508 Technical Standards mentioned above. The IOUCA believes that the inclusion of the additional W3C guidelines not addressed in the Section 508 Standards are important in supporting a state web presence that provides a greater level of independence and usability among California's citizens and employees with disabilities.

Benefits of an Accessible State Web Presence

There are great rewards for compliance with accessibility Standards and Guidelines. Compliance with Section 508 and WCAG 1.0 will benefit California's citizens with disabilities. Compliance will provide an additional benefit to those users who require keyboard-only access or use text-based browsers, low-end processors, slow modem connections, and/or no multi-media capabilities on their computer. Compliance also enhances access to California web sites by developing technologies such as Personal Digital Assistants (PDAs), Web TV, Internet phones, and other devices with Internet connectivity. In general, enhancements to comply with accessibility standards usually improve the general ease of use of a web site thus benefiting all users.

Scope of Implementation

The recommended standards for accessibility apply to all State of California public Internet web sites for state organizations that report to the Governor and the State Chief

Information Officer (CIO). It is hoped that the other constitutional offices will find these standards helpful as they work to make their public web sites accessible.

Section 508 of the amended Rehabilitation Act of 1973 and web accessibility is not limited, however, to public web sites. State agencies and departments should ensure that their Extranet (business to business, not intended for public viewing) and Intranet (available only to staff within the organization) sites are accessible and comply with Section 508.

Implementation timeframes should be assessed and established based initially on urgency, ease of implementation, and the volume of traffic or visibility. A self-evaluation by each agency with a hierarchical implementation plan should be conducted immediately and on an ongoing basis.

Web Applications

The IOUCA recognizes that accessibility for web applications is an important, related issue. The California Enterprise Architecture Program will develop accessibility standards for web applications at a later time with input from the IOUCA. Although this document does not explicitly address web applications, it does address some components of online applications such as HTML forms. As with any online content, web application developers should be familiar with and meet the performance criteria outlined in this document.

Contractors and Outsourcing

Some organizations hire contractors to develop web sites and applications. These standards apply to all of a state agency or department's web pages, regardless of whether the pages were developed in-house or by a contractor, and regardless of the domain name used in the web page's address.

Training and Resources

These standards are intended for all web masters, developers, and content contributors who create or maintain web pages for their organization. In many organizations, staff will have to learn new processes, procedures, and systems in order to create accessible web pages. In some cases, this will require extensive implementation planning and staff training. These efforts will only succeed with a commitment from the executive and management levels in the organization to provide sufficient personnel, funding, and technical resources.

File Types

All of the State's web pages would be affected by these standards, regardless of the type of web page. In addition to web pages with .htm or .html file extensions, these standards apply to web pages with other file extensions such as .asp and .php.

The use of other technologies (e.g., Java, Flash, AJAX) and other document formats (e.g., Adobe Acrobat PDF, Microsoft Word, WordPerfect) is permissible if used in accordance with the standards outlined in this document. See the sections on Applets

and Plug-ins and Downloadable Documents for more information. In the absence of any specific guidelines, document authors and webmasters should always consider the accessibility performance criteria included later in this document.

Barriers to Implementation

LACK OF FAMILIARITY WITH ACCESSIBILITY

Lack of knowledge and understanding of how to successfully integrate accessibility into state web design and content are the major barriers to making this recommendation into reality. The state must ensure that good communication and training are in place to support our own staff as they are asked to follow this recommendation. The IOUCA is working closely with the Department of Rehabilitation to support their commitment to the delivery of training, and the provision of reliable tools and accurate information for state webmasters and content developers to utilize.

PDF DOCUMENTS

Portable Document Format (PDF) is a popular format for making documents available over the Internet. Improperly prepared PDF documents, particularly those originating from scanned images, are not accessible to many people with complete or low vision loss. PDF documents which originate as images, without Optical Character Recognition (OCR) cannot be converted to speech output that is readable by assistive technologies. (Please refer to the Special Note on PDFs later in this document.) California, like many governments, has used the format widely for creating documents to be placed on state web sites.

Creation PDFs that are accessible places the burden on the authors to create properly constructed documents. The widespread need to properly educate and train all state government staff who create a document that may later be converted to PDF is critical and currently poses a great challenge. Ensuring that PDFs are accessible will present a significant challenge, whether dealing with new documents or converting selected older ones. The IOUCA and the California Enterprise Architecture Program are meeting with Adobe to explore how best this issue can be addressed.

ADVANCED TECHNOLOGIES

Web developers are constantly “pushing the envelope” and exploring new, flashy, and exciting methods of displaying information online. Some of these technologies are things like Adobe Flash, AJAX, or Java. Often these techniques are adopted by web developers without careful consideration and understanding of the accessibility challenges inherent in new technology. Unfortunately the pace of development in assistive technology for users with disabilities lags behind that of the Internet.

IMPLEMENTATION, MONITORING, AND ACCOUNTABILITY

Developing well thoughtful implementation plans with appropriate and reasonable timeframes is paramount. Site redesigns, new content management systems, and the

planned training and technical resources will reduce these barriers and move the state forward in meeting its commitment to accessibility. Although there are free tools to evaluate the accessibility of a single web page, these methods rely on each individual webmaster and content creator to validate each individual page. Without an enterprise approach to evaluating, monitoring, and repairing web accessibility, compliance will continue to be inconsistent and extremely challenging for individual webmasters.

Section II – Recommended Standards and Guidelines

Standards

State agencies subject to this policy will take reasonable steps to design and develop web sites that are accessible to people with disabilities as well as those without disabilities.

Web page developers, designers, programmers, and content providers should become familiar with the standards and guidelines for achieving universal Web accessibility and should apply these principles in designing and creating any official state web sites.

State Web sites should meet both the Web accessibility standards in California Government Code 11135, which adopted the Section 508 standards issued by the United States Access Board[3], and the Priority 1 and 2 level checkpoints of the Web Content Accessibility Guidelines 1.0 (WCAG 1.0 "AA" Conformance Level) developed by the World Wide Web Consortium (W3C).

In addition, the Department of Rehabilitation has drafted five recommendations based upon its work with 508, WCAG and the communities serving persons with disabilities.

Avoid using small images or text as links. [Ref: CA DOR #1]

Avoid using frames. [Ref: CA DOR #2 Based on WCAG 10]

If a downloadable document cannot be provided in an accessible electronic format, provide information on how to request an alternate format. [Ref: CA DOR #3]

Provide contact information. [Ref: CA DOR #4]

Test for accessibility. [Ref: CA DOR #5]

These additions increase the level of accessibility and empowerment to a website visitor or employee with a disability without difficulty or major expense. They are easily achieved best practices and techniques.

[3] Part 1194 to Chapter XI of Title 36 of the Code of Federal Regulations, Subpart B Section 22, under Section 508 of the Rehabilitation Act.

Accessibility Performance Criteria[4]

The goal of these standards is to insure that all information and functionality presented in a web site or web-based application is available in a manner that is:

- x Compliant with browser and system font size and color settings
- x Completely operable using the keyboard only
- x Completely operable using leading screen magnification software
- x Completely operable using leading screen reading software
- x Completely operable using leading speech recognition software
- x Completely understandable without sound
- x Completely understandable without color
- x Clear and consistent
- x Unlikely to trigger photosensitive seizures

[4] These Performance Criteria and Guidelines are based on the work of the State of Maine's Policy and Guidelines (Revised and Adopted by the Information Services Policy Board 9/18/03). Maine's policy and related information is available online at http://www.maine.gov/oit/accessibility/index.htm. Modifications were made to clarify text and incorporate W3C Priority 2 items that were not included in Maine's policy.

Guidelines[4]

1. Coding
2. Text
3. Colors
4. Images
5. Image Maps
6. Audio
7. Multimedia
8. Animation
9. Links
10. Forms
11. Data Tables
12. Frames
13. Scripts
14. Applets and Plug-Ins
15. Window Control
16. Page Layout
17. Page Content
18. Navigation
19. Downloadable Documents and Alternate Accessible Versions
20. Contact Information
21. Testing

Special Note on PDF Documents

1. Coding

a. Use valid, standard web programming code. [Ref: WCAG 3.2, 11.1]

What: The World Wide Web Consortium (W3C) sets and publishes standards for most web programming languages, including HTML 4.01, XHTML 1.0, CSS Level 1 & 2, DOM, and SMIL. Programming code is considered "valid" when it follows all the rules and conventions specified in the published standards.

Why: Screen readers and other assistive technologies can more accurately interpret and interact with web pages that are built using valid, standard code. W3C languages are designed with accessibility in mind. This will also make your site compatible with a wider range of web browsers and devices used by the general public.

How: Indicate the programming language you are using by starting your code with a document type declaration such as: <!DOCTYPE html PUBLIC "-//W3C//DTD HTML 4.01 Transitional//EN">. Use the W3C HTML Validation Service and W3C CSS Validation Service to check your code. Refer to the World Wide Web Consortium site for full specifications and documentation.

b. Use appropriate markup to convey document structure. [Ref: WCAG 3.5, 3.6, 3.7, 5.4]

What: HTML includes markup (programming code) to identify the structural elements of a document. For example, the <p> element identifies a paragraph and <h1> identifies a first-level heading.

Why: Screen readers use structural elements to help make reading more efficient. For example, some screen readers can skip from heading to heading to allow the user to "skim" the document.

How: Identify section heading, paragraphs, lists, quotes, etc using the appropriate tags instead of relying on formatting commands to distinguish these elements. For example, use <h1> tags to identify top-level headings rather than simply applying font-size or bold formatting commands. Do not misuse structural elements for formatting effects, such as using <h1> to make text bold or <blockquote> to indent a paragraph that is not actually a quotation.

c. Use style sheets for formatting whenever possible. [Ref: WCAG 3.3]

What: Cascading Style Sheets (CSS) is a formatting language designed to compliment HTML. While HTML is designed to identify a document's structure, CSS defines formatting and presentation. Most current browsers offer some level of support for CSS; however, older browser versions may not. Pages must be usable and function properly when CSS is not supported.

Why: In general, users can most easily override formatting settings made using CSS. The use of CSS for formatting also tends to facilitate the proper use of HTML to identify document structure.

How: See the W3C's Cascading Style Sheets site for specifications, tutorials, and resources.

Note: Some older web browsers, notably Internet Explorer 3 and Netscape 4, have problematic support for CSS. Be sure to test pages using CSS in multiple browsers.

d. Avoid deprecated W3C markup and technologies [Ref: WCAG 11.2]

What: A deprecated element or attribute is one that has been outdated by newer constructs. Deprecated elements may become obsolete in future versions of the standards. Using deprecated elements instead of newer elements will make your site incompatible with the latest version of HTML and may, despite your best intentions, decrease its accessibility.

Why: It is important to avoid deprecated elements so that your Web page is compliant with current browser technology. The presentational elements (like FONT) and color attributes have been deprecated in order to encourage authors to use style sheets, thus separating page style from page content.

For example, the new OBJECT element is far more versatile at handling content from different sources than the deprecated APPLET, and it is designed to degrade more gracefully if coded properly.

How: Use CSS for formatting when possible. Be familiar with the W3C's deprecated elements for the various standards the W3C develops (HTML, XML, CSS, etc)

e. Use metadata to add semantic information to pages and sites. [Ref WCAG 13.2]

What: Some of the code behind web pages provides information about the document itself. This is called "metadata" about the document - metadata is information about data. Well-crafted metadata can provide important orientation information to users. HTML elements that provide useful information about a document include <title>, <doctype>, <link>, and <meta> tags.

Why: Information about your content (metadata) allows information about the document to be understood and best used by technology devices including not only assistive technologies, but also technologies like PDAs, printers, etc. Proper use of metadata also supports the separation of content and presentation as recommended by the IOUCA.

How: See recommendations incorporated in the IOUCA Recommendations for the Separation of Presentation and Content.

2. Text

a. Avoid using images to display text. [Ref: WCAG 3.1]

What: Web developers often use images of text to achieve a specific style, size, or special effect.

Why: Users with limited vision rely on the ability to enlarge text or choose enhanced color combinations. However, most web browsers cannot change the size and color of images.

How: Whenever possible, use actual text instead of images of text. Style sheets can be used to achieve specific sizes, colors, or effects. Text that requires exact formatting, such as logos, are appropriate exceptions.

b. Avoid using absolute sizes for fonts. [Ref: WCAG 3.4]

What: Font sizes can be set using "absolute" or "relative" units of measurement. Absolute units, notably pixels, points, and inches,

are based on fixed physical measurements; Relative units, such as percentages, “em” units, or "small," "medium," or "large," are based on the user's default font size. Web developers can also choose not to define font sizes.

Why: Users with limited vision often rely on the ability to enlarge text. Most web browsers allow users to easily change the size of text that has been set with relative units (or not set at all). Using absolute font sizes generally makes it much more difficult for users to change text size to meet their needs.

How: Set font sizes using relative measurements or avoid setting font sizes altogether.

c. Specify the language of text. [Ref: WCAG 4.1, 4.3]

What: HTML uses the language attribute (“lang”) to specify language in a web page. It can be set for any HTML element.

Why: Words written in foreign languages can be unintelligible when spoken by a screen reader. Some screen readers are able to pronounce words in their appropriate language if it is specified.

How: Use the language attribute on the <html> element to identify the primary language of each document, for example, <html lang="en">, for English. Use the language attribute on or other elements to identify words or phrases in other languages. For example, a Spanish phrase within an English document could be coded as se habla español.

Note: Not all screen readers support automatic language changes, but setting the lang attribute will not negatively affect those that do not.

d. Avoid using "ASCII art.” [Ref: WCAG7.3]

What: "ASCII art" (and "emoticons") are images created using special arrangements of text characters and symbols. For example, ":-)" is often used to create a smiley face, and "-->" could be used as an arrow.

Why: Screen readers read most ASCII art literally, which can be extremely confusing. For example, ":-)" reads as "colon dash right parenthesis," and "-->" as "dash dash greater than."

How: Use images with appropriate alternate text instead of ASCII art.

3. Colors

a. Do not convey information with color alone. [Ref: WCAG 2.1; 508 (c)]

What: Color is often used to indicate special functions or status. For example, required form fields are frequently indicated with red labels.

Why: Users with blindness, limited vision, or color-blindness may miss information presented with color.

How: Whenever color is used as an indicator, use a non-color-based indicator as well. For example, required form fields could be identified with asterisks as well as color.

b. Use contrasting foreground and background colors. [Ref: WCAG 2.2]

What: Web authors can set specific colors to be used for foregrounds (text) and backgrounds. Sometimes images are used as backgrounds.

Why: Users with limited vision or color-blindness may have difficulty reading text that is similar in color to its background.

How: For text, use dark colors on light backgrounds, or vice versa. Avoid combinations of red and green as well as busy background images.

4. Images

a. Provide "alternate text" for all images. [Ref: WCAG 1.1; 508 (a)]

What: The HTML image element (<img>) includes an "alternate text" attribute (alt) that is used to provide text that can be substituted when the image itself cannot be displayed. Alternate text is meant to be a concise replacement for an image and should serve the same purpose and convey the same meaning.

Why: Individuals who are blind cannot perceive information presented in images; screen-reading software reads alternate text instead.

How: ALL images must have appropriate alternate text. As a rule of thumb, consider what you might say if you were reading the web page to someone over the telephone. Alternate text should be brief, no more than a few words (150 characters).

For images that contain words or letters - use alternate text that includes the same words or letters. For images links - use alternate text that identifies the link's destination or function. You do not need to include the words "link to." For images that are invisible, purely

decorative, or otherwise do not convey meaning - use alt="" (null) to indicate that the image can be safely ignored by a screen reader.

Certain types of information, such as GIS and geographically coded data, currently may not be available in a displayable text format. At this time it is acceptable to use these formats without a text equivalent. However, these formats should be used with caution and only when necessary. If a more accessible format to present the same information is available, or becomes available, it should be used instead or provided as an alternative.

b. Provide full descriptions for graphs, diagrams, and other meaningful images. [Ref: WCAG 1.1; 508 (a)]

What: "Meaningful" images are images that convey more information than can appropriately be expressed as alternate text.

Why: A full description allows a user who cannot see or understand a meaningful image to receive the same information as a sighted individual.

How: Present a full description of a meaningful image either on the page on which the image appears or through a link immediately preceding or following the image. Use alternate text to provide a concise name for the image. For example, the alternate text of a graph should state its title and the long description should summarize its trends and/or present a table of its data.

Note: The long description attribute (“longdesc”) of the <img> element can also be used to provide a link to a full description. Because most web browsers do not yet support long description, it should not be used as the only method of providing a full description.

Note: Certain types of information, such as GIS or geographically coded data may not be currently available in a displayable text format.

5. Image Maps

a. Provide alternate text for each area in client-side image maps. [Ref: WCAG 1.1; 508 (a)]

What: Image maps are images divided into multiple "areas," with each area having its own hypertext link.

Why: Just as images must have alternate text, each area of an image map must also have appropriate alternate text for use when the image is not displayed.

How: Use alternate text that indicates the function or destination of the link for each area of a client-side image map. The image itself should have alternate text that indicates the overall function of the image map.

b. Avoid using server-side image maps. [Ref: WCAG 1.2, 9.1; 508 (e), (f)]

What: While client-side image maps and server-side image maps look and operate similarly, they are technically very different. Because of the way server-side image maps work, all information about the image and links is stored at the web server and is not available to the user's web browser or assistive technology.

Why: Screen readers cannot identify or read the separate areas or links within server-side image maps.

How: Whenever possible, use client-side image maps instead of server-side image maps. If server-side image maps must be used, provide a set of text links that duplicate all the functions/destinations included in the image map.

6. Audio

a. Do not convey information with sound alone. [Ref: WCAG 1.1; 508 (a)]

What: It is possible to use sound for a variety of purposes, including presenting warning signals, cues, or verbal instructions.

Why: Users who are deaf or hard of hearing may miss information provided only through sound.

How: Whenever significant information is provided by sound, include a visual indicator that provides the same information as well.

b. Provide text transcripts for audio containing speech. [Ref: WCAG 1.1; 508 (a)]

What: "Audio containing speech" includes audio recordings or live broadcasts of speeches, seminars, conferences, etc. A text transcript is a word-for-word written record of the spoken content of such an event.

Why: Individuals who are deaf or hard of hearing may require text transcripts to access audio information.

How: Provide a link to a text (or HTML) transcript of any audio presented on a web site. Transcripts should be posted within 48 hours of a request for the data.

7. Multimedia

a. Provide synchronized captions for multimedia containing speech. [Ref: WCAG 1.4, 508 (b)]

What: Multimedia generally refers to recorded or live media containing both video and audio tracks. Captioning (as in "closed captioned") is essentially a text transcript of the audio synchronized with the audio/video tracks of the presentation.

Why: Individuals who are deaf or hard of hearing may require captions to access the audio information in multimedia.

How: Whenever possible, captions should be implemented using Synchronized Multimedia Integration Language (SMIL) to synchronize the display of text from a transcript with the video. As a less desirable alternative, captions can be added to a standard video recording and then converted to a web format.

b. Provide audio descriptions for multimedia with significant video. [Ref: WCAG 1.3]

What: Audio descriptions are verbal descriptions of the actions and images displayed in a video that are inserted during pauses in the regular dialog or audio track. Audio descriptions are only necessary if significant information is presented visually but not discernable from the dialog or audio track.

Why: Individuals who are blind or low-vision may require audio descriptions to access the visual information in multimedia.

How: Carefully consider whether audio descriptions are necessary to present the significant information of a multimedia recording. Many speech-intensive events, such as speeches, lectures, or conferences, may not need audio description.

8. Animation

a. Avoid flickering, blinking, and unnecessary animation. [Ref: WCAG 7.1, 7.2, 7.3; 508 (j)]

What: Animated graphics, Flash, Java, <blink> tags, <marquee> tags, and other techniques are often used to create a variety of animated effects.

Why: Flickering or blinking between 2 and 55 Hz (flashes per second) can trigger epileptic seizures. Animation can be distracting to users with certain visual or cognitive disabilities.

How: Do not cause elements to blink regularly between 2 and 55 Hz. Avoid animation and movement unless it provides significant additional information.

9. Links

a. Make sure that links are understandable out of context.) [Ref: WCAG 13.1]

What: A link is understandable out of context when it clearly indicates its destination or function without requiring additional information.

Why: Screen reader users often tab through links (skip from link to link by pressing the Tab key) in order to "scan" a page. Most screen readers also offer a "links list" feature to help speed the process of navigating to specific links. Links that are not understandable out of context, such as "click here" or "more," make these techniques much less efficient.

How: Use link text that is clear and unambiguous. Avoid using "click here."

b. Provide a means of skipping past repetitive navigation links. [Ref: 508 (o)]

What: Navigation links are the lists or "menus" of links to all the sections of a site that are often repeated on every page.

Why: Because navigation links are typically placed at the beginning (top left) of pages, screen reader users must read through all the navigation links before reaching the main area of the page. Individuals who use a keyboard instead of a mouse similarly must tab through all the navigation links before reaching the main area of the page. Providing a means of skipping these links can significantly improve efficiency and usability for screen reader and keyboard users.

How: Provide a link at the beginning of navigation lists which points to a target at the beginning of the main content area of the page. This link must be visible to screen reader and keyboard-only users, but can be hidden from other users. The link can be text or a small image with ALT-text such as “skip navigation”. The link is typically named “skip navigation” or “skip to content”. It is also acceptable to

design a page so that navigation links come at the end of the document.

Note: This is required only if your site contains a set of navigation links at or near the top of the page that repeats on multiple pages of the site.

c. Avoid using small images or text as links. [Ref: CA DOR #1]

What: The size of the "clickable" area of a link is limited to the size of the image or text that makes up the link.

Why: Mouse-users with limited fine motor control may have difficulty pointing to and clicking on links that are small, especially if the links are close together.

How: Make sure that images used for links are reasonably large (preferably 32 pixels by 16 pixels or larger). Use standard or enlarged font sizes for text links, and avoid using text links that are shorter than four characters in length. Additionally, avoid placing small links close together.

10. Forms

a. Associate labels with all form fields. [Ref: WCAG 12.4; 508 n]

What: HTML forms include "fields" such as buttons (<input type="button">), text boxes (<input type="text">), list boxes (<select>), and more. A text label typically identifies each field.

Why: Screen readers cannot always determine which label belongs to which field based on positioning alone. The <label> element makes this association clear.

How: Use the <label for="…"> tag to label every form field.

Note: The value of a label's "for" attribute is the corresponding field's id, not its name.

b. Position labels as close as possible to form fields. [Ref: WCAG 10.2; 508 (n)]

What: Using certain layout techniques, form labels are not always positioned immediately next to their fields.

Why: When screen magnification software enlarges a web page it also reduces the field of view. If form field label is positioned far away from its field, it may be impossible for a screen magnifier-user to view both the field and the label at the same time.