Websites and Access for People with Disabilities

Connecticut Library Association Conference

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New England ADA Center
Institute for Human Centered Design
200 Portland St
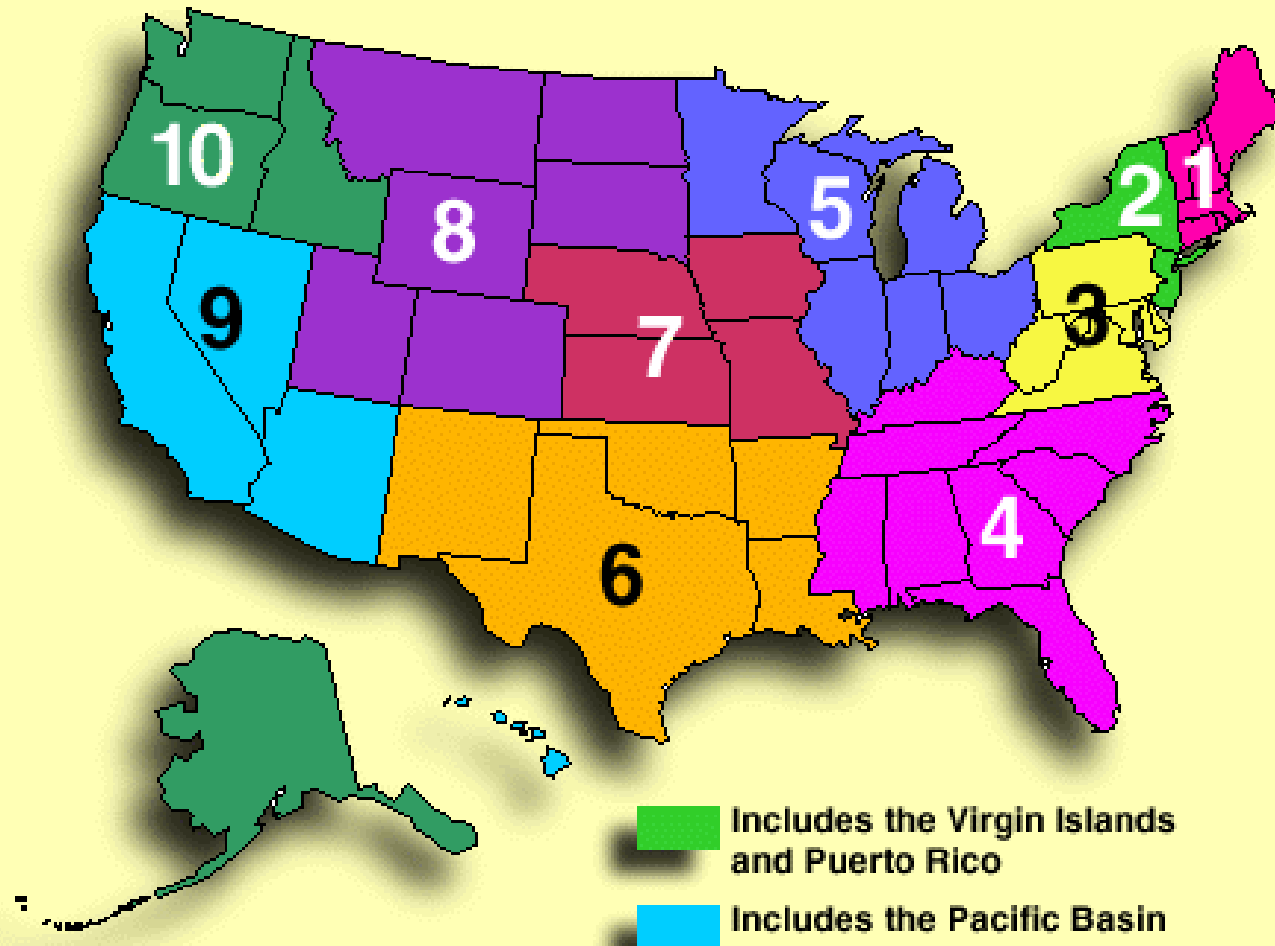Boston, MA 02210
800-9049-4232 voice/tty
adainfo@NewEnglandADA.org
www.newenglandada.org

Ten ADA Centers

Funded by the National Institute on Disability and Rehabilitation Research

Includes the Virgin Islands and Puerto Rico

Includes the Pacific Basin

800-949-4232 voice/tty

New England ADA Center

a project of

Institute for Human Centered Design

200 Portland St.
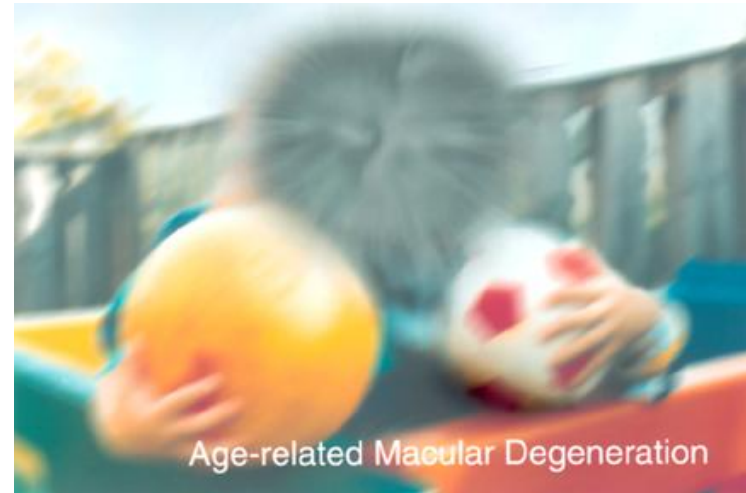
Boston

Who benefits from accessibility?

Assistive Technology
Activating Keys with Head Stick

Vision Impairments

Macular Degeneration

Photos courtesy of National Eye Institute http://www.nei.nih.gov/photo/sims/sims.htm

In general, magnification and high levels of illumination will assist in reading and other near vision tasks.

Vision Impairments

Cataracts

Normal Vision

Cataract

Photos courtesy of National Eye Institute http://www.nei.nih.gov/photo/sims/sims.htm

Age related cataracts are often yellow or brown causing loss of sensitivity to blue.

Vision Impairments

Diabetic Retinopathy

Photos courtesy of National Eye Institute http://www.nei.nih.gov/photo/sims/sims.htm

This is the largest single cause of visual impairment among those of working age.

Vision Impairments

Tunnel Vision/Retinitis Pigmentosa

Photos courtesy of National Eye Institute http://www.nei.nih.gov/photo/sims/sims.htm

This impairment often makes it possible to read small print but not large print.

Vision Impairments

Color Blindness

[Visicheck Website Simulation](#)

Avoid using color as the only means of distinguishing between choices.

Vision Impairments

Color Blindness

PUSH GREEN BUTTON TO START

Avoid using color as the only means of distinguishing between choices.

If the colors used in a site have poor contrast, it may be difficult for some users to read.

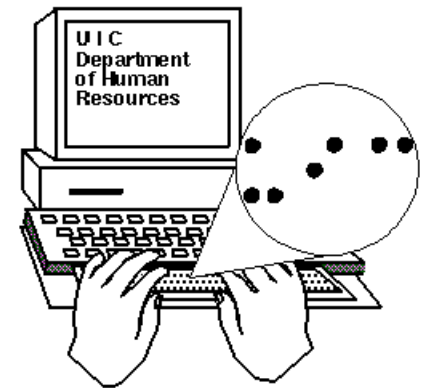This text has better contrast, but the headers below are better.

Color Contrast

Color Contrast

Color Contrast

Assistive Technology
Refreshable Braille Display

*Photos courtesy of tiresias.org,
deafblind.com and the University
of Maryland*

Assistive Technology
Screen Reading Software and Headset

Good
AccessIT

Needs Improvement
Bienville Parish Library

Choice of Standards

- Section 508 of Rehabilitation Act

- World Wide Web Consortiums'
  Web Content Accessibility Guidelines
  (WCAG) 2.0

Web standards: Section 508

(a) Text Tags

(b) Multimedia Presentations

(c) Color

(d) Readability

(e) Serve-Side Image Maps

(f) Client-Side Image Maps

(g)&(h) Data Table

Web standards: Section 508

(i) Frames

(j) Flicker Rate

(k) Text-Only Alternative

(l) Scripts

(m) Applets and Plug-Ins

(n) Electronic Forms

(o) Navigation Links

(p) Time Delays

Text Equivalents for Images

The issue:

- Screen readers can't "read" a photo or other graphic image

Section 508
Text Tags

Provide a text equivalent for every non-text element

Text Tags
(Also known as ALT Text)

Graphic

<IMG src=… **alt="United Nations Flag"** width=… >

Alt text No No's
Too long:
"Image of the United Nations Flag, blue background with white olive branches surrounding map of world, about one and a quarter inches by one inch

Text Tags
(Also known as ALT Text)

Graphic that's also a link

<IMG src=… **alt="Aeronautics Home Page"** width=…>

<IMG src=… **alt="Visit the Aeronautics Home Page"** width=…>

Alt text No No's
Reference to link:

"link to aeronautics home page" – Screen reader knows it's a link and says so

More ALT Text No No's

File information:

"spacer.gif 236 bytes"

Meaningless out of context:

"Click here"

Example: Graphic for registration should say Registration not Click Here

Registration

Multimedia Presentations

The issue:

- People who are deaf can't hear audio files and the audio part of multimedia

- People who are blind can't see the video part of multimedia content

Section 508
Multimedia Presentations

Multimedia presentations must include synchronized alternatives, such as captioning and described video

Multimedia

- Include a text *transcript* for informational audio files

- Provide synchronized text equivalents (*captions*) for the audio content of a multimedia presentation

- Provide synchronized *audio descriptions* of **significant** video information in multimedia presentations

Media Access Generator (MAGpie)

Free caption- and audio-description authoring tool for making multimedia accessible to persons with sensory disabilities developed by the National Center for Accessible Media

[Magpie](#)

Color

The issue:

- Screen reading software can't discern what color things are

- People who are colorblind can't distinguish between certain colors

Section 508
Color

All information conveyed with color must also be available without color

Color Alone - Problem

Tell us who you are. (required fields in red)

Company:

Salutation: (please select)

First name:

Last name:

Job title: (please select)

Phone: e.g., 415-555-1111

Web address: http://

E-mail:

Color with asterisk - OK

Tell us who you are. (* indicates required fields)

Company:

Salutation: (please select)

* First name:

* Last name:

Job title: (please select)

* Phone: e.g., 415-555-1111

Web address: http://

* E-mail:

Slide courtesy of Knowbility, Inc

Forms

The issue:

Labels (e.g. First Name) are often not clearly associated with the fields that needs to be typed in or checked

Section 508
Electronic Forms

Online forms 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.

Forms

- Do not use JavaScript to automatically change the location of the web browser

- Instead, allow the user to select the menu item, then select an adjacent form button to go to the page for the item they have selected (go, enter, submit buttons)

Data Tables

The issue:

- Data tables are designed for viewing

- Column and row headers can be discerned while reading data but difficult for screen reader to pick up

Section 508
Data Tables

Identify row and column headers for data tables

Data Table

Shelly's Daughters

	Name	Age	Birthday
by birth	Jackie	5	April 5
	Beth	8	January 14
by marriage	Jenny	12	Feb 12

Frames

The issue:

- A frameset is a web page which defines a collection of at least two other separate web pages, which are combined in the same visual space

- Frames are presented to screen readers as lists of website pages

Frames - Examples
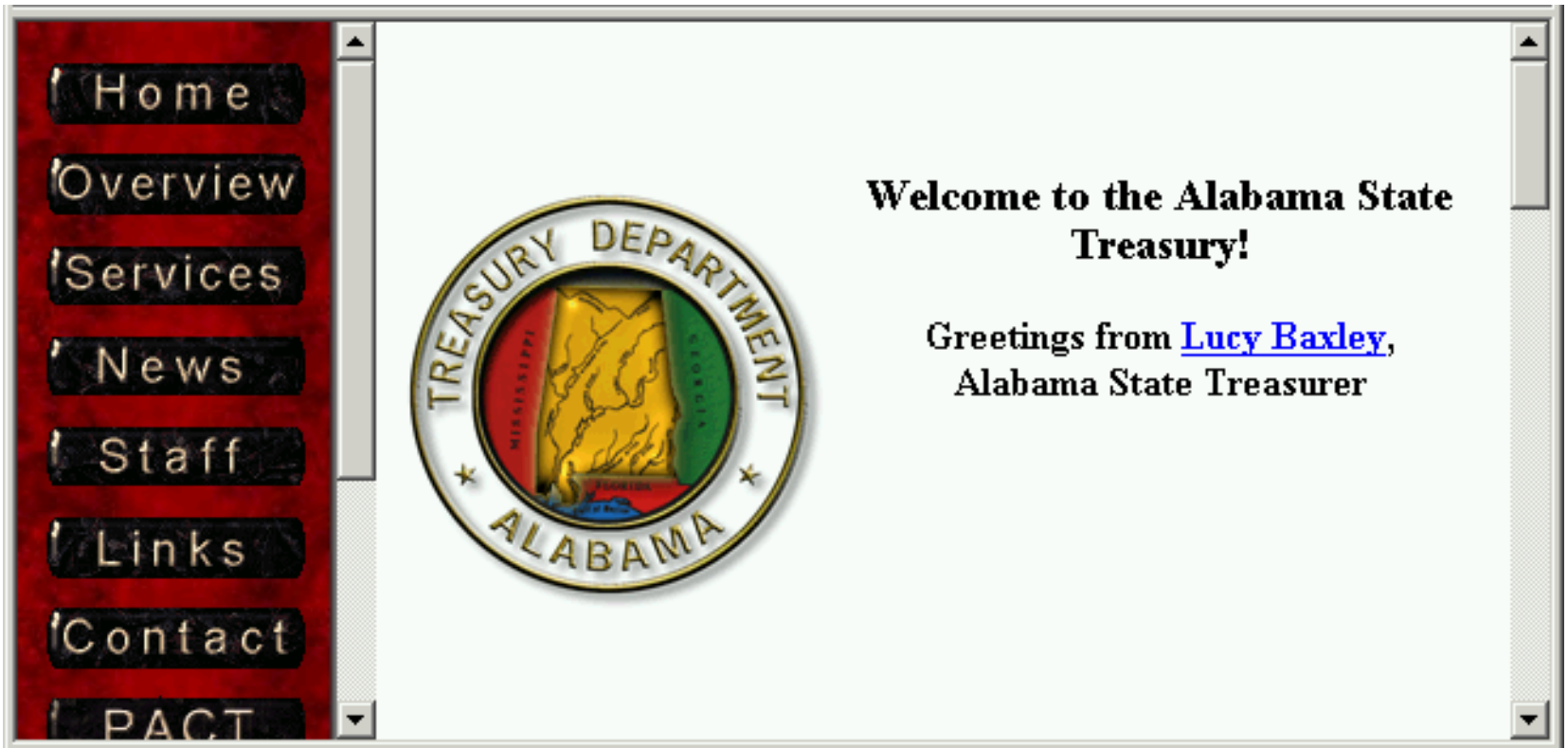
What the person using a screen reader hears:
   FRAME: frame 70890
   FRAME: frame 70888

Section 508
Frames

Give frames titles that make sense and facilitate navigation

Flickering

The issue:

Flicker in the range 2 Hz to 55 Hz may cause seizures in people with photosensitive epilepsy.

Section 508
Flickering

Avoid causing the screen to flicker with a frequency greater than 2 Hz and lower than 55 Hz.
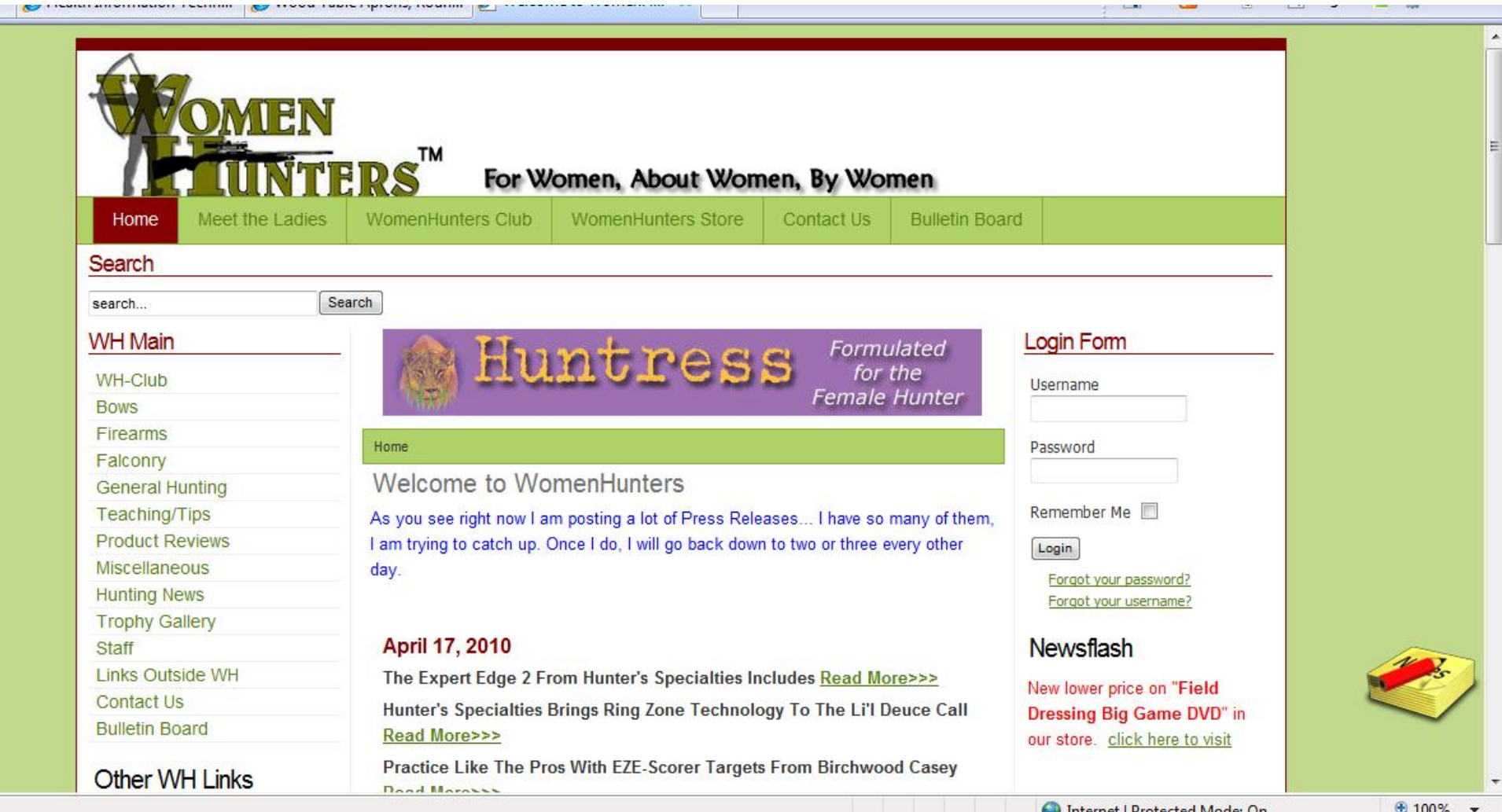
Navigation

The issue:

- Navigation links usually precede the main content

- People using screen readers have to listen to those links on every page, so main content is difficult to get to

Navigation

On every page have to listen to all side and top links before get to content

Section 508
Navigation Links

Users must be able to skip repetitive navigation links

Skip Top Navigation

The easiest method of creating a "skip navigation" link is to put it at the top of the page in regular text. Put the corresponding anchor (link destination) at the beginning of the main content.

Skip to Content

"Invisible" Skip Navigation Link

Other developers have decided to hide the link entirely. The most common method is to place a small invisible .gif image at the top of the page with `alt="Skip navigation"` as the alternative text.

This method does not work well for all users

Links

The issue:

People who use screen readers often pull up a list of links to figure out what's on the page.

Links - Examples
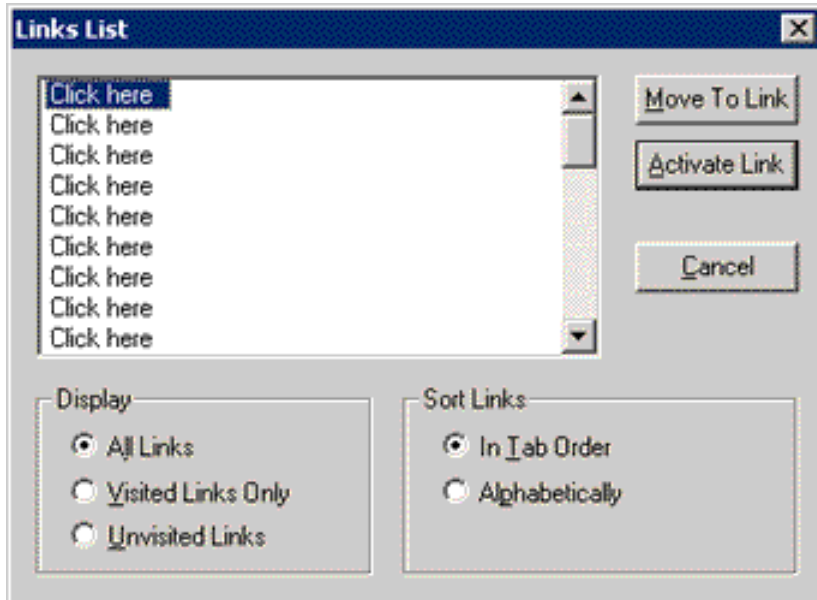
"Click here" doesn't tell anything about the link

Not clear which links go with which offers.

Links

- Use descriptive link text that lets the user know where the link goes

- Links to the same place should have the same text; links to different pages should be different

End of Section 508

Questions?

Next: general usability features (universal design)

Universal Design

*Slide courtesy
Lisa Spitz
Director of Design
CAST*

- **Navigation**

    – Provide multiple pathways for navigating through the website (e.g. table of contents, site map, site search)

    – Navigation that is on multiple pages should remain in the same location on all pages, and use the same labeling

    – What you click is what you get, page titles should match link titles

    – Links that go to the same location should have the same name

    – Links that go to different locations should have different names

Universal Design

*Slide courtesy
Lisa Spitz
Director of Design
CAST*

- **Hierarchy**

  - Use descriptive titles for all pages on the site

  - Reading and navigation order should be logical

  - Page structure should be obvious to both sighted and non-sighted users (e.g. Sighted users should be able to visually see the hierarchy on the page. Non-sighted, screen reader, users should be able to "see" the hierarchy with HTML coding for headings, lists, and specialized text)

Universal Design

*Slide courtesy
Lisa Spitz
Director of Design
CAST*

- **Content**
  - Use CSS to control positioning and styles for all content, not HTML
  - Avoid crowding the page with too much content, or too many links
  - Avoid content that moves, blinks, or flashes; or pops up automatically
  - Avoid horizontal scrolling
  - Identify the language of the page using the HTML lang attribute, and where appropriate sections of content that are in another language
  - Define ambiguous or unknown words with adjacent text or a glossary
  - Define abbreviations

Universal Design

*Slide courtesy
Lisa Spitz
Director of Design
CAST*

- **Text**

  - Use text colors with effective contrast
  - Keep line lengths to no more than 80 characters wide
  - Use left or center text justification, not right or justified
  - Keep line spacing at least ½ the height of text
  - Keep paragraph spacing at 1 ½ times line spacing
  - Allow people to enlarge or reduce text (e.g. program font size with "Ems" instead of "Pixels" or "Points", or provide alternate stylesheets for larger font sizes)
  - Do not rely on shape, size, color, or visual location for text directions (e.g. *"*Click on the blue circle to the right to continue")

Usability Evaluation

*Slide courtesy
Lisa Spitz
Director of Design
CAST*

- Turn off Style Sheets, does page still make sense?
- Turn off images, missing any important information?
- Check heading structure
- Check colors for contrast
- Check link text, does it make sense
- etc, etc…

Would you like to look at your site?

Where to go for more information

www.access-board.gov/508.htm - Section 508 standards and helpful guide to the standards

www.webaim.org - Web Accessibility In Mind, providing resources, tips and training on web accessibility

www.w3.org/wai - The World Wide Web Consortium's Web Accessibility Initiative has comprehensive recommendations for web accessibility

www.vischeck.com - Vischeck shows how a web page looks to someone who is color blind

www.ncam.org - Resources for producing accessible multimedia including captioning video.

Where to go for more information

New England ADA Center

800-949-4232 v/tty

www.NewEnglandADA.org