Building Accessibility Into The Workflow

Rick Ells
Computing & Communications
University of Washington
Seattle, Washington
rells@cac.washington.edu
http://staff.washington.edu/rells/
Challenge

• Accessible design standards are well defined
• Many sites do not follow accessible design standards
• Accessible design advocates are on the outside of the process
• How can accessibility become part of the process?
**Looking at Section 508**

- **1194.22 Standards define 16 discrete criteria in no particular order**

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<tbody>
<tr>
<td>A.</td>
<td><strong>Text equivalent for every non-text element</strong></td>
<td>B.</td>
<td><strong>Synchronize equivalent alternatives for multimedia presentations</strong></td>
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<tr>
<td>E.</td>
<td><strong>Each active region of a server-side image map shall be provided with redundant text links</strong></td>
<td>F.</td>
<td><strong>Use client-side image maps instead of server-side image maps if possible</strong></td>
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<td>C.</td>
<td><strong>All information conveyed with color is also available without color</strong></td>
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<td>G.</td>
<td><strong>Identify row and column headers for data tables</strong></td>
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<td>I.</td>
<td><strong>Title frames with text that facilitates frame identification and navigation</strong></td>
<td>J.</td>
<td><strong>Avoid screen flicker between 2 Hz and 55 Hz</strong></td>
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<td>M.</td>
<td><strong>When page requires applet, plug-in, or application, provide link to compliant version</strong></td>
<td>N.</td>
<td><strong>Forms should allow people using assistive technology access to information, elements, and functionality necessary to use form</strong></td>
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<td>O.</td>
<td><strong>Provide method to skip repetitive navigation links</strong></td>
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<td>H.</td>
<td><strong>Associate data cells with header cells with markup in tables with multi-level row and column headers</strong></td>
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<td>L.</td>
<td><strong>When using scripting for display and interface, provide functional text that can be read by assistive technology</strong></td>
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<td>P.</td>
<td><strong>When a timed response is required, alert user and give sufficient time to indicate more time is needed</strong></td>
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Decision Tree?
Typical Reaction

A. Text Equivalent for every non-text element
B. Synthesize equivalent alternatives for multimedia presentations
C. All information conveyed with color is also available without color
D. Provide method of skip repetitive navigation links
E. Each active region of a server-side image map shall be provided with redundant text links
F. Use client-side image maps instead of server-side image maps if possible
G. Identify raw and caption headers for data tables
H. Forms should allow people using assistive technology access to information, elements, and functionality necessary to use forms
I. Title frames with text that facilitates frame identification and navigation
J. Avoid screen flicker between 2 Hz and 55 Hz
K. Provide text equivalent for any non-text content (other than text that is purely decorative)
L. Provide identifying row and column headers for data tables
M. When a timed response is required, alert user and give sufficient time to indicate more time is needed
N. Provide Text equivalent
O. Provide synchronized spoken version, alternative
P. Provide equivalent information without color
Q. Content, interface without style sheet
R. Use client-side image maps
S. Provide identifying row and column headers for data tables
T. Associate data cells and header cells
U. Use such terms with text to facilitate identification and navigation
V. Avoid flicker with frequency between 2 Hz and 55 Hz
W. Provide test page with page title and relevant information or functionality
X. Use DHTML to construct dynamic text that can be read by existing software
Y. Provide link to compliant page if any exists
Z. Provide link to compliant page if any exists
AA. Provide method to skip
BB. Provide method to skip
CC. Provide method to skip
DD. Provide method to skip
Basic Publication Workflow

Where does accessibility fit?
Opportunistic Reuse Workflow

From *Managing Enterprise Content: A Unified Approach* by Ann Rockley
Going Beyond Retrofitting

“A common response from programmers after receiving an accessibility evaluation is that it would have been much easier to incorporate the requested changes at the beginning of the site development lifecycle. …building accessibility into a site early in the development lifecycle saves time and money compared to retrofitting.”

Law, Jacko, and Edwards, “Programmer-Focused Website Accessibility Evaluations,” ASSETS’05 Conference, October 2005
### Sorting Out The Requirements

#### Alternative and Associative Text
- A. Text Equivalent for every non-text element
- E. Each active region of a server-side image map shall be provided with redundant text links
- I. Title frames with text that facilitates frame identification and navigation

#### Technologies
- B. Synchronize equivalent alternatives for multimedia presentations
- F. Use client-side image maps instead of server-side image maps if possible

#### Graphics and Color
- C. All information conveyed with color is also available without color
- G. Identify row and column headers for data tables

#### Usable Design
- D. Documents readable without requiring associated style sheet
- H. Associate data cells with header cells with markup in tables with multi-level row and column headers
- J. Avoid screen flicker between 2 Hz and 55 Hz

#### Additional Requirements
- K. Provide text page with equivalent information and functionality when compliance not possible otherwise
- L. When using scrolling for display and interface, provide functional text that can be read with assistive technology
- M. When page requires applet, plug-in, or application, provide link to compliant version
- N. Forms should allow people using assistive technology access to information, elements, and functionality necessary to use form
- O. Provide method to skip repetitive navigation links
- P. When a timed response is required, alert user and give sufficient time to indicate more time is needed
1194.22 For Roles

Alternative and Associative Text
A. Text equivalent for every non-text element
G. Identify row and column headers in data tables
H. Associate data cells with header cells with markup in tables with multi-level row and column headers
I. Title frames with text that facilitates identification and navigation
L. When using scripting for display and interface, provide functional text that can be read with assistive technology

Technologies
E. Each active region of a server-side image map shall be provided with redundant text links
F. Use client-side image maps instead of server-side image maps if possible
M. When page requires applet, plug-in, or application, provide link to compliant version

Graphics and Color
C. All information conveyed with color is also available without color
J. Avoid screen flicker between 2 Hz and 55 Hz

Usable Design
D. Documents readable without requiring associated style sheet.
N. Forms should allow people using assistive technology access to information, elements, and functionality necessary to use form.
O. Provide method to skip repetitive navigation links
P. When a timed response is required, alert user and give sufficient time to indicate more time is needed.

Other
K. Provide text page with equivalent information and functionality when compliance not possible otherwise.
Decision Tree by Roles

- Alternatives and Associations
  - If non-text element
    - Provide Text equivalent
  - If using foreign language to display content on UI
  - Provide identifying row and column headers
  - If using tables
    - Provide equivalent information without color
  - If using multimedia table ReC Rooms
  - Associate data cells and header cells
  - Fill each frame with text to facilitate identification and navigation
  - If using frames
    - Provide equivalent information without color
  - If graphics are dynamic
    - Avoid flicker with frequency between 2 Hz and 56 Hz

- Graphics and Color
  - If color conveys meaning
    - Provide text-only page with equivalent information or functionality

- Technologies
  - If using image maps
  - Provide link to compliant plug-in or applet
  - Provide synchronized equivalent alternative
  - If Multi Media elements
  - Use client-side image maps

- Usable Design
  - If using style sheets
    - Provide style sheet
  - If electronic form
    - Provide means for assistive technology to access all elements required for completion and submission
    - Provide method to skip
    - Alert user and give sufficient time to indicate more time is required
  - If navigation links
    - Provide text-only page with equivalent information or functionality
  - If form response required
    - Provide text-only page with equivalent information or functionality

- Content readable without style sheet
Writer/Editor Role

• Write and gather text
  – Text content
  – Alternative texts for non-text objects

• Prepare for the Web
  – Rewrite into “plain language”
  – Organize into semantic structure (headings, paragraphs, lists, etc.)
Web Publisher Role

• Receive prepared text, graphics, alternative text, and long descriptions
• Place content in templates
• Place associative attributes in tables and forms
• Publish
Graphics Designer Role

• Develop color scheme, considering accessibility issues relating to color
  – Provide direction to Web Designer on color issues

• Prepare graphics and photos for use

• Provide graphics and photos to Writer/Editor for development of alternative text
Web Designer Role

• Develop templates and CSS, taking accessibility into consideration
  – Skip to content
  – Linearity of content (works without CSS)
  – Provide compliant support for applets

• Oversee selection and use of technologies used in Web site to insure accessibility
  – Javascript, AJAX, PDF, Flash
Systematic Reuse Workflow

From Managing Enterprise Content: A Unified Approach by Ann Rockley
Elements and Attributes
A. Text equivalent for every non-text element
   I. Title frames with text that facilitates identification and navigation
L. When using scripting for display and interface, provide functional text that can be read with assistive technology
N. Forms should allow people using assistive technology access to information, elements, and functionality necessary to use form

Technologies
E. Each active region of a server-side image map shall be provided with redundant text links
F. Use client-side image maps instead of server-side image maps if possible
P. When a timed response is required, alert user and give sufficient time to indicate more time is needed.

Table Structure
G. Identify row and column headers in data tables
H. Associate data cells with header cells with markup in tables with multi-level row and column headers

Templates and stylesheets
C. All information conveyed with color is also available without color
D. Documents readable without requiring associated style sheet.
J. Avoid screen flicker between 2 Hz and 55 Hz
O. Provide method to skip repetitive navigation links
M. When page requires applet, plug-in, or application, provide link to compliant version

Other
K. Provide text page with equivalent information and functionality when compliance not possible otherwise.
Building In Accessibility
About Tables

• Typical table entry interface
  – Presents matrix of whole table
  – You enter text into matrix cells
  – Then you go back and make the cells at the top of each column and the first cells each row into headers

• Why not…
  – Define columns and rows first, including heading text and scope definition, which will also define the data matrix
  – Then enter the matrix contents

• Result would be properly annotated, fully accessible tables
Key Points

• Prepare content into semantic units before entry
• Require alternative and associative texts at time elements and objects are added to system
• Design templates for full use of alternative and associative texts, intelligible linearity, and usability
• Manage technology used in pages
• Look ahead at approaching technologies to avoid inadvertent accessibility blocks
Discussion

• Content entry interfaces and processes need rethinking

• The approach of AJAX makes the need for better integration of accessibility into the design and management process imperative
  – Javascript not as inherently structured as HTML, more care will be necessary in using it

• Accessibility as an add-on will no longer work
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- Thatcher, Jim, et al, **Constructing Accessible Web Sites**, Glasshaus, 2002
- W3C
  - Implementation Plan for Web Accessibility, [http://www.w3.org/WAI/impl/Overview.html](http://www.w3.org/WAI/impl/Overview.html)
  - Selecting and Using Authoring Tools for Web Accessibility, [http://www.w3.org/WAI/impl/software.html](http://www.w3.org/WAI/impl/software.html)