Web Accessibility 101

General Overview
NWESD 189 Staff

✓ David Forsythe, Assistant Superintendent of Operations
✓ Jessica Haag, Communications Specialist
✓ Kyle Bunker, Technology Services Director
✓ Kyann Flint, Guest Disability Advocate
Disclaimer

- This presentation does not replace legal advice
- We will not tell you “how to” fix your website, but we will review guidelines and share information we’ve gathered
- We will try to point you in the right direction
Agenda

1. Regulations
   - Disabilities & Assistive Technology

2. Guidelines

3. Process to Improve
   - Questions
   - Link to resources
Section 1: Why?

✓ It’s the right thing to do!
✓ It’s just as important to have an accessible website as having a ramp or an ASL interpreter for a meeting
✓ Federal Law
✓ State Law
✓ Districts are receiving Office of Civil Rights Complaints against their website accessibility
National Statistics on Disabilities

56.7 million people in the US have a disability.

That’s **19%** of our entire population!

8.1 million of those are visually impaired.

7.6 million of those are hearing impaired.
Washington State Statistics on Disabilities

911,800 (12.8%) of non-institutionalized people have a disability
283,900 (4.0%) have a disability type of hearing impaired
162,800 (2.3%) have a disability type of visually impaired
440,900 (6.6%) have a disability type of ambulatory (serious difficulty walking or climbing stairs)
147,000 (13.5%) WA State students have an Individualized Education Plan (IEP)
33,000 (3.1%) WA State students have a Section 504 Plan

Data from 2015 Disability Status Report by Cornell University and OSPI
Risk Management

Generally there is:

- Coverage for Special Education Claims
- Exclusions for relief or complaints filed with local, state or federal administrative body such as Human Rights Commission, OSPI, EEOC
- Exclusions for compliance with ADA act of 1990- won’t cover cost or expenses to make premises accessible

- But always check with your District Risk Manager or your Risk Management or Insurance Provider for details on your Coverage Agreement
Regulations

✓ Rehabilitation Act of 1973
  ✓ Section 504
✓ Title II of Americans with Disabilities Act (ADA) (1990)
✓ Rehabilitation Act: Section 508 (2000)
✓ Washington State Law against Discrimination (RCW 49.60.010)
Section 508 (Revised 2017)

- Effective January 18, 2018
- Safe Harbor: "legacy (websites, web-based applications, and electronic documents) ICT that complies with the existing 508 Standards and has not been altered after the compliance date (i.e., one year after publication of the final rule) need not be modified or upgraded to conform to the Revised 508 Standards. However, when existing ICT is altered after the compliance date, such alterations must comply with the Revised 508 Standards."
Ms. Wheelchair of Washington State

- Kyann Flint, Disability Advocate: Squalicum High School, Bellingham Washington & Western Washington University
- https://www.facebook.com/Ms.WheelchairWa/?ref=ts Facebook: @Ms.WheelchairWA
- https://www.linkedin.com/in/kyann-flint-8a498288/
- Twitter: @kyann_flint
Disability Types

- Visual
  - Low Vision
  - Color Blind
- Hearing
- Motor Skills
- Cognitive
- Aging can contribute
Assistive Technology

✓ Screen Readers
✓ Magnifiers
✓ Special Keyboards
✓ Voice Control
✓ Mobile Devices
✓ Search Engines
✓ Captioning
Questions?
Section 2: Guidelines

✓ What needs to be accessible?
  ✓ Design & Flow
  ✓ WCAG
    ✓ Perceivable
    ✓ Operable
    ✓ Understandable
    ✓ Robust
“Accessibility isn’t a niche issue; it’s an everyone issue.”

- Eleanor Ratliff, Smashing Magazine
Thinking about design & flow:

Examples:

- Low vision = usually works well on small screens
- Cognitive issues = better site flow overall
- Focusing on good design will actually help to create sites that are better for everyone.
“You never really understand a person until you consider things from his point of view...until you climb into his skin and walk around in it.”

- Harper Lee, To Kill a Mockingbird
First-hand experience

✓ Straw test – low vision
✓ Enlarge your fonts – low vision
✓ Check for sufficient color contrast – low vision
  http://webaim.org/resources/contrastchecker/
  Search for: High Contrast Extension
✓ Pencil test/go mouse less – mobility issues
Questions?
KEEP CALM AND USE WCAG 2.0
Web Accessibility Guidelines

✓ The official guidelines are outlined in the **Web Content Accessibility Guidelines 2.0 AA (WCAG)**
✓ Established by the Accessibility Initiative of the **World Wide Web Consortium (W3C)**
✓ Three levels of accessibility: **A, AA, AAA**
✓ Web Accessibility Initiative – Accessible Rich Internet Applications (WAI - ARIA)
✓ Four key principles: **POUR** (Perceivable, Operable, Understandable, Robust)
<table>
<thead>
<tr>
<th>HTML5 Element</th>
<th>ARIA Role</th>
</tr>
</thead>
<tbody>
<tr>
<td><code>article</code></td>
<td>&quot;article&quot;</td>
</tr>
<tr>
<td><code>footer</code></td>
<td>&quot;contentinfo&quot;</td>
</tr>
<tr>
<td><code>header</code></td>
<td>&quot;banner&quot;</td>
</tr>
<tr>
<td><code>nav</code></td>
<td>&quot;navigation&quot;</td>
</tr>
<tr>
<td><code>section</code></td>
<td>&quot;region&quot;</td>
</tr>
<tr>
<td><code>main</code></td>
<td>&quot;main&quot;</td>
</tr>
</tbody>
</table>

ARIA Landmark Roles [http://webaim.org/techniques/aria/#landmarks](http://webaim.org/techniques/aria/#landmarks)

Rules of ARIA: [https://w3c.github.io/using-aria/#intro](https://w3c.github.io/using-aria/#intro)
POUR

✓ **Perceivable** (users need to be aware of web content)
✓ **Operable** (users need to be able to navigate, find and interact with website content)
✓ **Understandable** (users need to be able to comprehend all navigation, interaction and content)
✓ **Robust** (enable users to choose technologies to meet their needs)
1. Perceivable
Guideline 1.1 Text Alternatives:

Provide text alternatives for any non-text content
This includes: Images, forms/buttons, embedded multimedia, frames

✓ Be accurate
✓ Be concise
✓ Do NOT be redundant
✓ Do NOT use the phrases "image of ..." or "graphic of ..." to describe the image

Source: http://webaim.org/standards/wcag/checklist
Guideline 1.1 Text Alternatives:

Provide text alternatives for any non-text content
This includes: Images, forms/buttons, embedded multimedia, frames

Images and Text-to-Speech example:

Image with text

Website Accessibility & Compliance Workshop
June 7th, 9 AM – 12 or September 13th, 9AM – 12 at the NWESD, Anacortes | $25

What is Read:
“link graphic [filename]”

Source: http://webaim.org/standards/wcag/checklist
Guideline 1.1 Text Alternatives:

Provide text alternatives for any non-text content
This includes: Images, forms/buttons, embedded multimedia, frames

What would be appropriate alternative text for the image
1. "Image of baby monkey"
2. "Little monkey, cutest animal on earth"
3. An empty alt attribute (alt=""
4. "Baby monkey"
5. It depends on the context

Source: http://webaim.org/standards/wcag/checklist
Guideline 1.2 Time-based Media:

Provide alternatives for time-based media (example)

Captions, transcripts, audio descriptions, audio for video content

✓ **Synchronized** - the text content should appear at about the same time that audio would be available

✓ **Equivalent** - content provided in captions should be equivalent to the words spoken

✓ **Accessible** - caption content should be readily accessible

Source: http://webaim.org/standards/wcag/checklist
Guideline 1.3 Adaptable:

Create content that can be presented in different ways (ex: simpler layout) without losing information or structure.

✓ Semantic markup

✓ Tables

✓ Reading and navigation order

Source: http://webaim.org/standards/wcag/checklist
Semantic Markup

<h1>, <h2>, <h3>, <p>, <i>
## Tables

(Example)

### Shelly's Daughters

<table>
<thead>
<tr>
<th>Name</th>
<th>Age</th>
<th>Birthday</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jackie</td>
<td>5</td>
<td>April 5</td>
</tr>
<tr>
<td>Beth</td>
<td>8</td>
<td>January 14</td>
</tr>
</tbody>
</table>

Source: [http://webaim.org/standards/wcag/checklist](http://webaim.org/standards/wcag/checklist)
Reading & Navigation Order

determined by the code order  (example)

✓ Set document Language ex: using an “en” code for English

✓ Content Linearization: the page should have a linear progression in a step-wise manner (think about how an audio/screenreaders would navigate the page)

✓ Navigating Content (using the tab key, and links should make sense when read out loud)

Source: http://webaim.org/standards/wcag/checklist
Guideline 1.4 Distinguishable:

Make it easier for users to see and hear content including separating foreground from background

Use proper color contrast

Good contrast  Bad contrast

Color Checker (example) Level AA requires a contrast of 4.5:1 for normal text and 3:1 for large text

Source: http://webaim.org/standards/wcag/checklist
Example: Low Vision

Source: http://webaim.org/standards/wcag/checklist
Take 5 minutes to look at your website

- Perceivable -
2. Operable
**Guideline 2.1 Keyboard Accessible:**

Make all functionality available from a keyboard

The following best practices can facilitate efficient keyboard navigation:

- Provide a "skip to main content" link on the page
- Use a proper heading structure
- Provide ARIA landmarks or HTML5 structural elements (<main>, <nav>, etc.) usable elements

**KEYBOARD TESTING >>**

<table>
<thead>
<tr>
<th>Interaction</th>
<th>Keystrokes</th>
<th>Notes</th>
</tr>
</thead>
</table>
| **Navigate to most elements** | • Tab | • Keyboard focus indicators must be present.  
|                      | • Shift + Tab | • Navigation order should be logical and intuitive.  
|                      | navigate backward | |
| **Link**             | Enter      | Ensure elements with ARIA role="button" can be activated with both key commands.  
| **Button**           | Enter or [Spacebar] | |
| **Checkbox**         | [Spacebar] - check/unchack a checkbox | Checkboxes should be used when one or more option can be selected.  
| **Radio buttons**    | •  or  - select an option.  
|                      | • Tab - move to the next element. | Radio buttons should be used when only one option from a group can be selected.  
| **Select (dropdown) menu** | •  - navigate between menu options  
|                      | • [Spacebar] - expand | You can also filter by typing letters, but this behavior varies by browser. Some will filter as you type, like autocomplete. Others will only sort by first letter. E.g., in a list of US States, hitting A then R may take you to Arizona, or it may take you to Alabama and then Rhode Island.  

Source: http://webaim.org/standards/wcag/checklist
Guideline 2.2 Enough Time:

Provide enough time to read and use content

“When a timed response is required, the user shall be alerted and given sufficient time to indicate more time is required”

- Web-based intranet & internet information & applications
  Section 508 Standards Guide

Source: http://webaim.org/standards/wcag/checklist
Guideline 2.3 Seizures:

Do not design content in a way that is known to cause seizures

WARNING personal susceptible to photoepileptic seizures should not follow these links

A strobing, flickering image
An optical illusion image

Source: http://webaim.org/standards/wcag/checklist
Take 5 minutes to look at your website

- Operable -
3. Understandable
Guideline 3.1 Readable:

Make text content readable and understandable

Website copy

- Main titles should be in H1 headings, meaningful, and contain keywords
- Subheadings are in H2 heading, meaningful, and contain keywords
- Content is further divided into blocks or paragraphs constructed around a single major idea
- Write clearly using short sentences

Source: http://webaim.org/standards/wcag/checklist
Guideline 3.1 Readable:

Make text content readable and understandable

Website copy continued...

- Avoid acronyms and abbreviations; or explain them
- Avoid slang, industry jargon or marketing fluff
- Use active voice, use positive terms
- Ensure that every word and paragraph is necessary
- Give direct instructions

Source: http://webaim.org/standards/wcag/checklist
Working with hyperlinks:

Website copy continued...

- Avoid ‘click here’, ‘go’, ‘read more’ or images as links as they do not make sense of context
- Create meaningful links within text
- Differentiate links by color and underline
- No more than 20 links on a page
- Use enough space between links

Source: http://webaim.org/standards/wcag/checklist
Guideline 3.2 Predictable:

Make Web pages appear in predictable ways

- For example, people who use screen magnifiers see only part of the screen at any point in time; a consistent layout makes it easier for them to find navigation bars and other components.

- Placing repeated components in the same relative order within a set of Web pages allows users with reading disabilities to focus on an area of the screen rather than spending additional time decoding the text of each link.

- Users with limited use of their hands can more easily determine how to complete their tasks using the fewest keystrokes.

Source: http://webaim.org/standards/wcag/checklist
Guideline 3.3 Input Assistance:

Help users avoid and correct mistakes

Examples:

✓ Hiding optional form fields

✓ Labels or instructions are provided when content requires user input

✓ Input errors are automatically detected and the error is described to the user in text

Source: http://webaim.org/standards/wcag/checklist
Take 5 minutes to look at your website

- Understandable -
4. Robust

Source: http://webaim.org/standards/wcag/checklist
Guideline 4.1 Compatible:

Maximize compatibility with current and future user agents, including assistive technologies

Examples:

✓ Hiding optional form fields

✓ Labels or instructions are provided when content requires user input

✓ Input errors are automatically detected and the error is described to the user in text

Significant HTML/XHTML validation/parsing errors are avoided. Check at http://validator.w3.org/

Source: http://webaim.org/standards/wcag/checklist
Take 5 minutes to look at your website

- Robust -
**BEFORE**

**Welcome to CityLights**
Citylights is the new portal for visitors and residents. Find out what’s on, book tickets, and get the latest news.

- Heat wave linked to temperatures
- Man Gets Nine Months in Violin Case
- Lack of brains hinders research

**Elsewhere on the Web**
Please see the following websites for important information. Citylights take no responsibility for their content. For artichoke advice, call the number below.

- Killer Bees. Click here.
- Onions. Click here.

Artichoke advice telephone hotline: (1) 269 24553 / (1) 269 C-H-O-K-E

**AFTER**

**Welcome to CityLights**
Citylights is the new portal for visitors and residents. Find out what’s on, book tickets, and get the latest news.

- Heat wave linked to temperatures
- Man Gets Nine Months in Violin Case
- Lack of brains hinders research

**Elsewhere on the Web**
Please see the following websites for important information. Citylights take no responsibility for their content. For artichoke advice, call the number below.

- Killer Bees
- Onions

Artichoke advice telephone hotline: (1) 269 24553 / (1) 269 C-H-O-K-E

Source: https://www.w3.org/WAI/demos/bad/before/home.html
Before:

Welcome to CityLights

CITYLIGHTS is the new portal for visitors and residents. Find out what's on, book tickets, and get the latest news.

Free Penguins

"Free penguins" slogan at zoo benefit concert causes confusion among city rockers. Adjective or verb? Read More...

Heat wave linked to temperatures

Man gets nine months in violin case

Lack of brains hinders research

Mayor: These kinds of crimes need more creative, effective punishments. For example, we could require compulsory more.

Brain donations: huge drop off in brain donations due to the great 'success' of 'Slow Traffic, Safe Streets' policy. Read More...

More City Parks

More parks and more green space throughout the city at the price of already rare car parking spaces, how will this affect you? Read More...

Elsewhere on the Web

Please see the following websites for important information. Citylights take no responsibility for their content. For artichoke advice, call the number below.

Killer bees. Click here.

Artichoke advice telephone hotline: (1) 269 C-H-O-K-E

After three years of effort city scientists now agree that the primary cause of the 2003 heatwave was hot air from our... Heat wave - full story

Vioin case full story

Brain donations - full story

Citylights Concert

City Lights Concert

Citylights Survey

More parks and more green space throughout the city at the price of already rare car parking spaces, how will this affect you? Take Survey

Artichoke advice telephone hotline: (1) 269 24653 / (1) 269 C-H-O-K-E

Source: https://www.w3.org/WAI/demos/bad/before/home.html
Questions?
Section 3: Moving Forward

✓ Developing Awareness
✓ First Steps
✓ District Needs Assessment
✓ Prioritizing Work
✓ Resources
  ✓ Regulations
  ✓ Checklists
  ✓ Tools
  ✓ Other Resources
Developing Awareness:

- Communications Staff
  - web publishers
- Technical Staff
- Decision Makers
- Organizational Awareness
  - Teachers and Administrative Staff
  - Kent Video
First Steps

- Target High Traffic pages (Google analytics)
- Target items that affect multiple resources
  - Themes & Style sheets
  - Templates
- Some accessibility is better than none (A-level)
  - Structured headings (in order)
  - Labels on form fields
  - Alternative text on images
  - Add captions to videos
- Test for color contrast
- Add contact information so visitors can request website information in an alternate format.

“If you experience difficulty with the accessibility of any web pages or documents on this website, please request this information in an alternate format. You may email the information requests directly to: communications@nwesd.org or call to request (360) 299-4000”
District Needs Assessment:

Let’s make some lists

1. How does the district disseminate information?
   - Web sites (District, Schools, Teachers)
   - Videos
   - Forms (collecting data from Staff, Student, Community etc.)
   - Fliers (Word Docs, PDFs)
   - Calendars
   - Social Media
   - Teacher Parent Communications
   - School Messaging Services
Assessing Your District cont...

2. What applications are Students required to use?
   ✓ Web Applications
   ✓ Curriculum
   ✓ Learning Management Systems

3. What resources are teachers using in the classroom?
   ✓ VCR Cassette

4. What resources are teachers recommending?

5. What resources are Staff required to use?
Now what?

- The goal is that 100% of your resources are accessible for everyone.
  - Visual
    - Low Vision
    - Color Blind
  - Hearing
  - Motor Skills
  - Cognitive

- Two main categories
  - Communications
  - Applications (web resources)
Prioritizing Work - Communications

✓ Is this a primary source of communications?
✓ How many people access the communications?
✓ Is there an alternate way to access the information?

✓ Is this communications accessible by someone who has:
  ✓ a visual impairment?
  ✓ a hearing impairment?
  ✓ a cognitive impairment?
  ✓ A physical impairment?

PRIORITY
Prioritizing Work - Resources

✓ Is the resource required to use or recommended?
✓ Who uses the resource?
✓ How many people use the resource?
✓ Is there an alternative way that someone could access or input the information?

✓ Is this resource accessible by someone who has:
  ✓ a visual impairment?
  ✓ a hearing impairment?
  ✓ a cognitive impairment?
  ✓ A physical impairment?
Quick Checks

How does the resource work with:

- Pen Test/Mouseless
  - Visual, Physical, Cognitive

- Small screen resolution
  - Visual, Cognitive

- Sound turned off
  - Hearing

- Larger than normal font sizes
  - Visual

- Black and white display
  - Visual

- Images turned off
  - Visual
Best Practices

✔ Form a Plan of Action
✔ Accessibility checkpoints at key milestones
✔ User testing with people with disabilities across all devices
✔ Accessibility is not an Add-On
  ✔ the best approach is to build in accessibility from the start
✔ Make sure your vendors are on board
✔ Communicate with content creators
  ✔ Cheat sheets
✔ Accessibility is a **process** and **not a project** and it is relevant throughout the lifetime of a website/application.
Resources - Regulations

- Rehabilitation Act: Section 508 (2017) website
  https://section508.gov/
- Article about 508 refresh
  https://goo.gl/e53Qu3
- Washington Office of CIO Policy 188
  https://ocio.wa.gov/policy/accessibility
- Washington Office of CIO Policy 188.10
  https://ocio.wa.gov/policy/minimum-accessibility-standard
- Actual WCAG Guidelines (Not technically a regulation)
  https://www.w3.org/TR/WCAG20/
Resources - Checklist

✓ WebAIM WCAG 2.0 Checklist
  http://webaim.org/standards/wcag/checklist

✓ WebAIM Section 508 Checklist
  http://webaim.org/standards/508/checklist

✓ UW Accessibility Checklist
  http://www.washington.edu/accessibility/checklist/

✓ Voluntary Product Accessibility Template (VPAT)
  http://www.itic.org/policy/accessibility/
Resources - Tools

- **Contrast Ratio Tools**
  - WebAim Contrast Checker
    [http://webaim.org/resources/contrastchecker/](http://webaim.org/resources/contrastchecker/)
  - Contrast Ratio Reporter
  - Color Contrast Spectrum
    [https://goo.gl/fNEHux](https://goo.gl/fNEHux)

- **Chrome Extensions**
  - Wave
    [http://wave.webaim.org/extension/](http://wave.webaim.org/extension/)

- **Chrome Extensions cont.**
  - Accessibility Developer Tools
    [https://goo.gl/u7EkVB](https://goo.gl/u7EkVB)
  - aXe
    [https://goo.gl/RgAhxE](https://goo.gl/RgAhxE)

- **Screen Readers**
  - Jaws
    [https://goo.gl/iPHJ1y](https://goo.gl/iPHJ1y)
  - Microsoft Narrator
    [https://goo.gl/mqxtv](https://goo.gl/mqxtv)
Resources – Other Resources

- NWESD Accessibility Resource Center
  www.nwesd.org/website-accessibility-resources
- UW Accessibility Resource Center
  http://www.washington.edu/accessibility/
- ESD 112 Accessibility Resource Center
  http://web3.esd112.org/accessibility/
- Kent School District
  https://www.kent.k12.wa.us/accessibility
- Deque University
  https://dequeuniversity.com/curriculum/online-classes/
Questions?
THANK YOU!

Contacts

David Forsythe  
dforsythe@nwesd.org  
(360) 299-4021

Jessica Haag  
jhaag@nwesd.org  
(360) 299-4017

Kyle Bunker  
kbunker@nwesd.org  
(360) 299-4061