

# SiteCM™

## Creating and Maintaining Accessible Websites with SiteCM

The purpose of this document is to introduce individuals and organizations who create and maintain web content to the concept of Web Accessibility and address how to use SiteCM Professional Content Management System to manage a web site and maintain Accessibility.

This is a simplification of the requirements for lay people tasked with maintaining content on an accessible web site. This is not a comprehensive document for web designers. We have provided appendices that contain links to sites with additional information and resources.

The focus of this document is on **design and presentation issues** that affect Web Accessibility. Developing content that is accessible to users with learning disabilities or other cognitive disabilities is beyond the scope of this document and is a unique area of practice.



SiteCM™

[www.sitecm.com](http://www.sitecm.com)

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# Introduction

## What is Web Accessibility?

Web Accessibility (WA) ensures that web sites are usable by people with disabilities who might be accessing the web using Assistive Technologies. Assistive Technologies could be screen readers or input devices other than a standard keyboard and mouse.

Good WA involves following guidelines and simple rules when creating your site and maintaining content to ensure the greatest number of visitors can use your web site.

**Having an Accessible web site does not mean that your site design has to suffer.** An Accessible office building with a wheelchair ramp does not have to be less attractive than a non accessible office building that only has steps. Some techniques to improve Web Accessibility actually improve the web site for all users in much the same way that an elevator provides wheelchair access but is used by people of all abilities.

Web Accessibility as defined by the World Wide Web Consortium (W3C) involves four principals.

1. **Perceivable** - Information and user interface components must be presentable to users in ways they can perceive. (it can't be invisible to all of their senses)
2. **Operable** - User interface components and navigation must be operable by users of all abilities using a variety of means including Assistive Technologies.
3. **Understandable** - Information and the operation of user interface must be understandable. (the content or operation cannot be beyond their understanding)
4. **Robust** - Content must be robust enough that it can be interpreted reliably by a wide variety of user agents, including assistive technologies. (as technologies and user agents evolve, the content should remain accessible)

## Why is Web Accessibility Important?

The web has become an integral part of day to day life. The web is used to access information, entertainment, education, employment, and commerce. Many organizations have capitalized on the low cost of distributing information on the web and have cut back traditional delivery methods. Sites must be developed so that people of all abilities can access this vital information.

It is much easier to overcome many of the barriers to the disabled on the web than in traditional media. Screen readers, Braille monitors and other adaptive technologies allow disabled people to use the same content as able bodied people with no additional cost to the organization producing the information.

There are a large number of disabled people using the web. The recent report of US health department cites that nearly 20 percent of the US population is afflicted with some sort of

disability<sup>1</sup>. This is a broad definition that includes everything from temporary disabilities, colour blindness to quadriplegics but as our population ages, this is likely to increase. Planning ahead can ensure that these people will continue to be able to access your web site throughout life's changes.

Web Accessibility is also a good indicator of corporate social responsibility. It shows that your organization cares about all members of the community.

If doing the right thing is not enough of a motivation, the final reason to plan for web accessibility is the growing amount of legislation. The US has legislation that requires all federally funded web sites to be Accessible (Section 508). Many other governments have existing legislation or are considering it.

## Who decides what is Accessible

There are two major frameworks that people follow for determining Web Accessibility.

The World Wide Web Consortium (W3C) Web Accessibility Initiative (WAI) created a set of Web Content Accessibility Guidelines (WCAG 1.0) in 1999 and updated them (WCAG 2.0) in December 2008. The W3C is an influential international body that sets guidelines for many aspects of the web. WCAG is used as a reference point in many jurisdictions around the world.

The other major framework for our purposes is the US Section 508 legislation. Any organization in the US that receives funding from the Federal Government must ensure compliance with a set of accessibility guidelines. The good news is that the US 508 requirements nicely match the WCAG guidelines. Many other governments have existing legislation or guidelines.

## Compliance

To be included in the WCAG 2.0, each criterion must create a greater problem for people with disabilities than for those without disabilities. All criteria are also testable by a combination of human or machines. They have done a good job removing ambiguity.

The W3C has three levels of compliance: A (lowest), AA, and AAA (highest). The levels were determined based on many factors:

- Is the solution essential to allow the site to function with Assistive Technology
- Is it possible to satisfy the criteria for all sites and types of content
- Can the skills be reasonably achieved by the content owners
- Will the criteria impose limits on the look & feel or function of the web page

The point with WA is not to be more compliant than the next guy, the point is to have a usable web site.

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<sup>1</sup> <http://www.buzzle.com/articles/how-do-disabled-people-access-the-web.html>

## General Concepts

When working towards Web Accessibility the main thing to keep in mind is that your users might have a disability of some sort. They might be:

- visually impaired or blind
- hard of hearing or deaf
- mobility impaired so that they cannot use a traditional keyboard or mouse
- cognitively or learning impaired

Following all of the guidelines will not ensure that your site is accessible. Compliance with a guideline should not be confused with Accessibility. The guidelines are a good evaluation framework and they can tell you if your site is NOT accessible, but only experience and testing can determine if your site is accessible.

## Assistive Technologies

There are a wide variety of Assistive Technologies used to access web sites. They include:

- Screen reader software, that converts text to voice and reads selected elements a site or which can read out everything that is happening on the computer.
- Braille terminals which have a Refreshable Braille display which renders text as Braille characters.
- Screen magnification software, or a modern browser (IE7, FF 3, Opera 9) which allows the user to zoom in on the site to a level that allows them to read and understand the content.
- Sip and puff controls for the mobility impaired that convert changes in airflow to cursor movement around a web page.

## Multimedia

SiteCM does not create Multimedia but it does support the use of it in the design of the site and in the content implemented by Content Owners. This document does not address multimedia compliance in depth because of the complexity of the issues involved.

As a rule, multimedia content creates challenges for people with many disabilities. Audio narration cannot be heard, background audio distracts or impairs the ability to understand the narration, visuals cannot be seen, and the pace of presentation can create issues for people with mobility or cognitive impairment who might not be able to react or understand as quickly as the majority of users.

Multimedia can be used if it serves a decorative function and does not convey important content, or if the content of the material is available from other sources on the site. If you plan on including multi-media in your site to convey information please refer to the further reading suggestions in the Appendices.

## Structure

We have created this document specifically to address WA using SiteCM Professional Web Content Management System. We look at various common tasks. We do not follow WCAG or 508 in a specific order. Where possible we have included reference to which guidelines are being met however this is not a point by point compliance guide.

We have divided the document into two sections. The first section, Design Requirements is intended for the web designer. It is also useful for site owners to read to understand the issues that the designer is trying to address. The second section is for the Content Owners who will be using SiteCM to manage their site.

## 10 Quick Tips

*<http://www.w3.org/WAI/quicktips/Overview.php>*

1. **Images & animations:** Use the alt attribute to describe the function of each visual.
2. **Image maps.** Use the client-side map and text for hotspots.
3. **Multimedia.** Provide captioning and transcripts of audio, and descriptions of video.
4. **Hypertext links.** Use text that makes sense when read out of context. For example, avoid "click here."
5. **Page organization.** Use headings, lists, and consistent structure. Use CSS for layout and style where possible.
6. **Graphs & charts.** Summarize or use the longdesc attribute.
7. **Scripts, applets, & plug-ins.** Provide alternative content in case active features are inaccessible or unsupported.
8. **Frames.** Use the noframes element and meaningful titles.
9. **Tables.** Make line-by-line reading sensible. Summarize.
10. **Check your work.** Use tools, checklist, and guidelines at <http://www.w3.org/TR/WCAG>

## Design Requirements

The framework or template of a SiteCM site is developed by your web designer who should be familiar with WA. This section has been included to help site owners understand some of the larger requirements of accessibility that your designer has dealt with prior to handing the site over to you.

Most of these issues are accommodated using Cascading Style Sheets and programming that is beyond the skill of most Content Owners. Decisions made in design help ensure that the content you create using SiteCM remains Accessible.

Designers new to Web Accessibility should read the complete document. It is important to be familiar with all issues before you spend time accommodating one criteria only to find out that it conflicts with another criteria.

The key to accessibility is the ability to understand the text that is being presented.

## Visual Presentation

How text is presented both in layout and colour selection can have a huge impact on how it is understood and accessed by people with cognitive or other disabilities. Text should be presented so that it can be perceived without its presentation interfering with its readability.

The good news for designers is that the WCAG allows the use of an Accessible style sheet to accommodate these issues. The most common failure is declaring a foreground colour without a background colour or vice versa.

## Specific criteria for compliance are:

- Allow users to specify both the foreground (text) colour and the background colour. This should be left as flexible as possible because many of these colour selections may not be intuitive.
- Allow users to set narrower blocks of text. For Accessibility lines of text should not exceed 80 characters. This is not a bad guideline for all content anyway.
- Allow users to set line and paragraph spacing so it is easier to track lines of text.
- If you use left and right justification by default, allow users to set to left (or right) only. Justifying to both margins looks pretty but can affect letter and word spacing which affects some users.

<http://www.w3.org/TR/UNDERSTANDING-WCAG20/visual-audio-contrast-visual-presentation.html>

## Predictable Interface

This is an Accessibility guideline but is also just good interface and usability design. A predictable interface makes your content easier to understand and navigate for all users regardless of ability or access method. Make the layout of content and behavior of interactive components predictable.

SiteCM already supports and enforces the recommendation for consistent navigation but there are three other recommendations for a predictable interface.

1. Change on request: changes of context are initiated only by user request. For example, use “activate” rather than “focus” as a trigger for changes.
2. Consistent Identification: components with the same functionality within your site are identified consistently
3. On Input: Changing the setting of any component does not automatically cause a change of context unless the user has been warned of the behavior in advance.

<http://www.w3.org/TR/UNDERSTANDING-WCAG20/consistent-behavior.html>

## Text Alternatives

To be compliant a site must provide text alternatives for all non-text content on the site. In this area of practice, text is considered to be electronic text which is presentation neutral. It can be rendered visually, as sound, as Braille, or be manipulated in other ways that allow users with a disability to access the content.

Images of text should be avoided wherever possible. For example, a JPEG image of text cannot be read by a screen reader. Alt text of images can be read however images of text are also not affected by changes to the style sheets which can be used to achieve compatibility for other requirements and disabilities.

This topic is covered in more detail in the content owner section.

There are several exceptions relevant to the designers

- Controls or inputs such as forms: These must have a name that describes their use.
- Time based media such as video or audio files need text to identify the content. Time based media has a whole section in WCAG 2.0 and is beyond the scope of this document.
- Sensory content such as works of art or performance that is not being used primarily to convey information
- CAPTCHA: SiteCM provides audio equivalents
- Decoration, formatting and Invisible text: If it does not convey important relevant information it does not need to be rendered as text.

Text Alternatives do not apply to logos and trademarks but it is good practice to provide alternative text (alt text) to ensure that these can be read. Anytime that an image is used to convey text, the designer must make sure that the content can be accessed in other ways.

<http://www.w3.org/TR/UNDERSTANDING-WCAG20/text-equiv-all.html>

<http://www.w3.org/TR/UNDERSTANDING-WCAG20/visual-audio-contrast-text-presentation.html>

## Contrast

To assist the visually impaired, WCAG requires that a site have a high contrast between text and background colours. There are also requirements to ensure that colour blindness does not reduce usability.

This requirement does not limit your design to black and white but it will impact your design elements. Text used as decoration and conveys no information is not required to be compliant.

This requirement applies to text and images of text that are meant to be understood as text. Incidental text, such as a photo that includes a street sign, or other decorative text that is not intended to convey information is not considered. We would interpret this to mean that it is acceptable to use a pull quote as an image which perhaps does not conform to the standards, as long as the content is available in conforming text in close proximity.

This is important when building navigation and creating roll over effects. If a roll over reduces contrast then it could become unusable by certain groups of users.

The guidelines on contrast specify contrast ratios. This is the difference between the luminance of the brightest colour (white) to that of the darkest colour (black) used. So grey on white has a lower contrast ratio than black on white. Red on Orange has an even lower ratio.

A contrast ratio of 4.5:1 is used for level AA compliance because it compensates for the loss in contrast sensitivity usually experienced by users with 20/40 vision or equivalent. 20/40 is commonly reported as typical visual acuity of elders at roughly age 80.

A contrast ratio of 7:1 was chosen for level AAA compliance because it compensates for the loss in contrast sensitivity usually experienced by users with approximately 20/80 vision. People with more than this degree of vision loss usually use assistive technologies such as screen readers to access their content. This level also provides contrast enhancement for color deficiency as well.

Large scale text (with at least 18 point or 14 point bold) can have a contrast ratio of 3.1 for AA and 4.5 to 1 for AAA.

The WAI suggests not specifying text colour, background colour, or text size, which would allow the users default browser settings to take effect. This is not usually an acceptable solution for a site as navigation and other elements generally have effects applied.

Common failures are specifying the foreground colour without specifying a background colour or vice versa. Another common failure is where background images are used. Background images can have variations in contrast across the image.

To comply with this guideline, you can provide a link (with sufficient contrast) that will load a high contrast style sheet. Generally this would have to be at the top of the page. This also relates to

the Visual Presentation guidelines. Text presented as images will not be affected by this technique therefore should be avoided unless it is strictly decorative. The image alt text will not be affected by the style sheet.

The appendices provide links to tools that allow to you check the contrast of your design.

<http://www.w3.org/TR/UNDERSTANDING-WCAG20/visual-audio-contrast-contrast.html>

<http://www.w3.org/TR/UNDERSTANDING-WCAG20/visual-audio-contrast7.html>

## Use of Color

Web designers use colour in many different ways on a site. It enhances a sites appeal, its usability, and accessibility for many people.

Some users have difficulty perceiving colour and what makes a site easier for some makes it more difficult for others by either hiding meaning or making it more difficult to perceive. Providing another means to convey the information can ease this problem. As an example, use red text AND a symbol or text cue to indicate a mandatory field rather than red text alone.

It is recommended that designers use a contrast ratio of at least 3:1 and provide additional visual cues on focus for links or controls where colour alone is used to identify them. An example is using colour and an underscore or bold presentation to indicate a link.

This is a difficult criterion to check automatically and relies on experience to determine if it has been met sufficiently.

<http://www.w3.org/TR/UNDERSTANDING-WCAG20/visual-audio-contrast-without-color.html>

## Text Scalability

The intent of these criteria is that text that is relevant for comprehension or navigation can be perceived by people using standard web browsers and assistive technologies.

While many of us never adjust our browser settings, the popular browsers (IE, Firefox) allow the users to set their text size and font declaration. They also have the option to allow the user to override any styles specified by the designer in the CSS. People with disabilities rely on these settings and can end up seeing things quite differently than you intended.

More recent browser versions have also introduced the ability to zoom into the content which is incredibly useful for designers as it does not affect the layout or influence the style declarations in your site, however, it is a general criteria of creating an accessible website that you do not rely on a single technology to provide accessibility.

The designer is responsible for ensuring that the content remains usable when the text is resized.

Content satisfies the Success Criterion if it can be scaled up to 200%, that is, up to twice the width and height. Above this limit generally other techniques such as zoom or screen readers would likely be used. Designers could support scaling beyond that limit; however, this may introduce usability problems. For example, words may be too wide to fit causing them to be truncated; layout constraints may cause text to overlap with other content; or only one word of a

sentence may fit on each line, causing the sentence to be displayed as a vertical column of text that is difficult to read.

There are many ways that this can be accommodated with a reasonable effort

- Provide controls that allow users to change the text size up to 200%
- Ensure that there is no loss of functionality when text resizes if text containers do not.
- Ensure that text containers resize when the text resizes.

Text presented as an image is not resizable and therefore should only be used as decoration. Most scaling techniques will not scale the Alt Text.

<http://www.w3.org/TR/UNDERSTANDING-WCAG20/visual-audio-contrast-scale.html>

## Focus

Someone who cannot use a mouse navigates using a keyboard or other input devices. These operate by changing the focus. You can test your design by using the arrow keys to move through your site elements and activate them using the Enter button. If you can access all content on your site with the keyboard as your only input device then you have met this criteria.

When testing your design and navigation, it is important to watch for keyboard traps. The web page might restrict the focus to a subsection of the content. If you ever need to use anything other than the arrow keys to move focus this must be indicated.

You should also keep in mind Focus order. If the page can be navigated sequentially and this is important to meaning and operation of the page, then the focus should move through the content in a way that preserves this meaning. Since there may be several possible logical reading orders for the content, the focus order may match any of them but should serve to enhance comprehension.

Flaws in this are most apparent in navigation with flyout menu systems. If a menu does not appear when you move focus to it with the keyboard, there must be a way to access the items that appear on that menu. This is resolved by ensuring each top level item has a landing page that displays the sub-navigation for the section.

Another issue to watch for is that the focus is indicated visually so that users know where the focus is on the page. Enhance the focus indicator in the browser, by creating a highly visible one in the content. The default focus indicator in many browsers is a thin, dotted, black line. It can be difficult to see the line when it is around a form element which already has an outline, when the focused element is inside a table cell, when the focused element is very small, or when the background of the page is a dark color.

In this technique, when the user places focus on an element, using the mouse, tab key, arrow keys, keyboard shortcuts, or any other method, the application makes that focus more visible, using a combination of a highly contrasting color, a thick line, and other visual indicators such as a glow.

- Use HTML Controls for links

- Use the onclick event for anchors and buttons

<http://www.w3.org/TR/UNDERSTANDING-WCAG20/keyboard-operation.html>

<http://www.w3.org/TR/UNDERSTANDING-WCAG20/keyboard-operation-keyboard-operable.html>

<http://www.w3.org/TR/UNDERSTANDING-WCAG20/navigation-mechanisms-focus-order.html>

<http://www.w3.org/TR/UNDERSTANDING-WCAG20/navigation-mechanisms-focus-visible.html>

<http://www.w3.org/TR/UNDERSTANDING-WCAG20/consistent-behavior-receive-focus.html>

## Bypass

This criterion ensures that people who navigate sequentially through content have more direct access to the primary content of the web page and can avoid repetitive elements. Repetitive elements could be navigation, advertising frames and headers. A sighted user can scan to the body content but someone using a screen reader must listen to all of the repeated content at every page.

An acceptable technique to comply with these criteria is to provide a link at the top of each page that goes directly to the main content area.

<http://www.w3.org/TR/UNDERSTANDING-WCAG20/navigation-mechanisms-skip.html>

## Location

It is important that all users, with disabilities or not, can easily tell where they are within your site. Breadcrumbs are an important technique to ensure accessibility by orienting the user to their position within a site. These are easy to add to your interface with SiteCM.

HOME > PRODUCTS > SITECM™ > FEATURES > PAGE MANAGEMENT

Another technique is to make sure that the user's location is highlighted in the navigation. For large sites this requires the use of accordion navigation systems. This is less compliant than using breadcrumbs because of colour issues however it is easy to add.

	PRODUCTS	SERVICES	RESELLERS
HOME > SERVICES > DESIGN			
<b>Design</b>			
Process			
<b>Consulting</b>			
<b>Hosting &amp; Domains</b>			
<b>Website Analytics</b>			
		<b>Design Services</b>	
		<b>SiteCM web content management</b> can be implemented using your designer, a re the value of your established design rel design relationship brings to the success o	

<http://www.w3.org/TR/UNDERSTANDING-WCAG20/navigation-mechanisms-location.html>

## Multiple Ways to Locate Content

All users behave differently so to increase accessibility it is recommended that all sites have multiple ways to access content. The only exception to this guideline is when the content is the end result of a process or series of steps. For example, a transaction confirmation is only accessible as a result of having completed the transaction.

A SiteCM Site Map and the Site Search meet these criteria.

<http://www.w3.org/TR/UNDERSTANDING-WCAG20/navigation-mechanisms-location.html>

## Frames

The WCAG Guidelines and the Section 508 requirements all provide rules for the use of frames. Our strong recommendation is not to use frames.

## Help users avoid and correct mistakes

Many system errors that are considered user errors can easily be avoid with attention to detail when designing sites. This is a larger issue for sites with custom applications than it is for pure SiteCM sites.

<http://www.w3.org/TR/UNDERSTANDING-WCAG20/minimize-error.html>

# Content Management

This section addresses how Content Owners can use SiteCM to create and manage their sites with the goal of maintaining Web Accessibility.

## Outline

Section headings should be used to indicate sections of content. Headings should use the h1 to h6 styles and order should be maintained. Following this simple guideline ensures that users using Assistive Technologies can easily navigate between headings to more easily scan the page.

Headings (h1 etc) should not be used for visual effects. If you want to have a visual effect, use the font size and apply colour or weight.

**Contact Us** ← Heading 1

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**Vancouver** ← Heading 2

Toll Free: 866.738.0906  
Tel: 604.738.0906

Suite 407 - 163 W. Hastings St  
Vancouver, B.C., V6B 1H5

**Kamloops** ← Heading 2

Toll Free: 888.374.0906  
Tel: 250.374.0906  
Fax: 250.374.0915

#2a-1445 McGill Rd.,  
Kamloops, B.C., V2C 6K7

**To contact support click here** ← using font as visual effect

Telephone

\* Email

Product of Interest

\* First Name

Last Name

Company Name

Headings should be used in the correct order and be nested appropriately.

Keep headings short so that they are easy to scan

AA <http://www.w3.org/TR/UNDERSTANDING-WCAG20/navigation-mechanisms-descriptive.html>

AAA <http://www.w3.org/TR/UNDERSTANDING-WCAG20/navigation-mechanisms-headings.html>

## Images

There is nothing in any of the Accessibility guidelines and requirements to prevent you from including images on your web page but it must be done with sensitivity to Accessibility issues. The main issue with images is making the content available to the blind and people with visual impairment. The blind are generally using assistive technologies like screen readers, but you also need to consider visual impairment like low vision or colour blindness.

It is important to distinguish between images that are important for understanding the content of the text, and images that are used as decoration. Decorative images do not need to be Accessible.

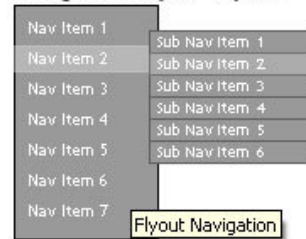
- Does your content make sense without access to the image? If it does, then the image is decorative.
- Does the image give an alternate presentation of content provided as text in the body of the page? An example would be a graphical representation of content provided in a table or details in a paragraph. This is acceptable because there is an accessible way of acquiring the information contained in the image.
- Text presented in logos is an exception to this guideline and is not required to be fully accessible.

## Alternative Text

The key to accessibility with images is to provide alternative text for the content in the image. Alternative text could be regular text presented in the content surrounding the image or it could be included in the “alt” attribute tag of the image. This is important for both the blind and the visually impaired.

Text presented as an image is not Accessible. It cannot be read by screen readers and it cannot be modified using an accessible style sheet to adjust contrast or colour selection.

### Navigation Style - Flyout



Flyout menus appear when you click on the anchor. When you click on another anchor, the previous flyout menu vanishes. This is hard to use and limits the number of flyouts you can have on a page.

Flyouts save screen space. The problem with flyouts is that when you click on an anchor, they disappear and you lose the information they were displaying.

Without the menu being persistent, or always visible, you have to re-open the menu again, they will not see your company or product features that you want to highlight. Without the menu being persistent, or always visible, you have to re-open the menu again, they will not see your company or product features that you want to highlight.

Alt text

When using images in your content with SiteCM, make sure you include appropriate text for the alt tag.

To make this easier, create alt text when you load an image to the library. Adding alt text to the image in the image library will ensure that the Alt attribute will be automatically included when the image is used so the page owner won't have to worry about it.

Image Name	<input type="text" value="map-parking.jpg"/>
Categories	<ul style="list-style-type: none"><li>-----Images</li><li>-----call to actions</li><li>-----Email</li><li>-----links</li><li>-----Photo Gallery</li></ul>
URL	<input type="text" value="/SiteCM/vmap-parking.jpg"/>
Alt Text	<input type="text" value="Where to Find Us - Parki"/>

It should be noted however that the context of image can have an impact on what is an appropriate Alt attribute so you should always check it.

When creating Alt attribute, it should indicate both the content and function of the image which would otherwise be apparent to sighted users. If the equivalent information cannot be presented simply, you can use the longdesc attribute or you can provide a link to a page with further description.

Long Description:  

A good Alt attribute should be

1. Succinct: It is being read to the user who has a screen reader so if it is decorative, don't tell them that it is a yellow butterfly over a green field
2. Equivalent: to the information being presented in the image
3. Not Redundant: If the content is presented elsewhere on the page in text content, then the image is decorative. Say so and move on. Don't tell them that it is an image, they already know that.
4. Appropriate for the context

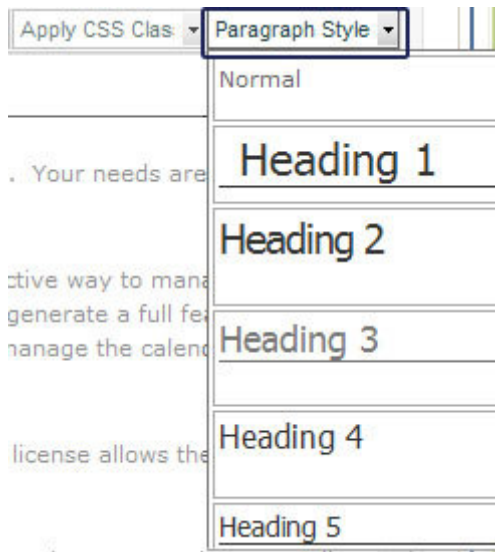
<http://www.webaim.org/techniques/alttext/>

<http://www.w3.org/TR/UNDERSTANDING-WCAG20/visual-audio-contrast-text-images.html>

## Accommodating Visual Impairment

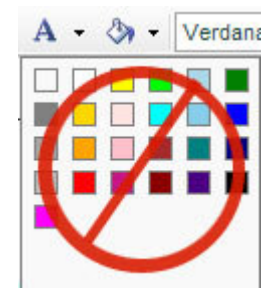
Visual impairment includes a broad spectrum of disabilities from low vision to colour blindness. These users might not use Assistive Technologies like screen readers but do have issues that could affect their ability to interpret information contained in images. Your designer has already gone to considerable effort to ensure that your site is accessible for the visually impaired, so a bit of extra effort when creating your image content is quite simple.

1. Don't *ever* use background images in your tables. This can override the effort that your designer put in to create an accessible style sheet and can cause issues for people with visual impairment who might be affected by changes in contrast as text is written over the image. {ILLUSTRATE}
2. Create high contrast graphics. If you are creating graphics in Photoshop there are tools you can use to check the contrast. High contrast is black and white but there are many other colour combinations that will work. Links are provided in the appendices.
3. Test your images using a colour blindness simulator. Links are provided in the appendices.
4. Only use custom styles defined by your designer and found in the SiteCM page editor. If you feel you need more, please contact your designer. This is explained more below.



## Colour

Your designer has put a lot of effort into creating Cascading Style Sheets that are accessible or can be made accessible by using special controls. Generally these controls are included in an Accessibility Toolbar at the top of your content. You paid for the designer's expertise and attention to detail in creating this. If you declare colours in your content editing, your



designer's efforts could be undermined and result in reduced accessibility and non compliance.

Only use custom styles, not the colour palette, for content that must be accessible. The custom styles have been created with alternate values to compensate for low vision and colour impairment. **The default colour palette tool will override settings in your accessibility toolbar reducing its effectiveness.** If you need additional styles contact your designer or SiteCM support. Styles can be declared for table cells, text, and many other uses.

Changing colours for decorative purposes might seem like a small issue but has an impact on accessibility for the visually impaired.

- Colour selection affects contrast rendering content difficult or impossible to read.
- Colour selection has unique considerations for people with disabilities related to the perception of colour.

When using the custom styles to highlight text, don't rely only on colour to highlight content. The use of bold text also emphasizes the content and increases accessibility for some users who have issues with colour.

## Text

Text is key for all of your site users whether or not they have disabilities. Your designer has carefully selected accessible styles and colours so it is best to use the default styles. Adding additional text characteristics can negatively affect compliance and reduce accessibility.

## Tables

Tables are great in the right time and place but use them carefully. Tables are great for presenting structured data but are also used to achieve advanced layouts.

Using tables to get a fancy layout can backfire if people are using Assistive Technologies or have cognitive disabilities. Screen readers will move linearly through the content from left to right one row at a time. Merged cells and nested tables can impair a user's ability to understand the material.

- Don't use background images in the tables (see above)
- Label cells. Use TH as appropriate

This is a heading for the table

This cell will be read first	Second the contents of this cell will be read	Third the entire contents of this merged cell will then be read to the user.
Fourthly this merged cell will be read		
Fifth this cell	And sixth and last this one	

Table Wizard

Table Design | Table Properties | Cell Properties | Accessibility

Heading rows: 0 (Max. 3)

Heading columns: 0 (Max. 3)

Caption alignment: [v]

Caption: This is a heading for the table

Summary: and a summary of the table contents can be found here for screen readers.

Associate cells with headers

OK | Cancel

Even if you do apply custom styles, don't rely on colour coding alone to convey information.

## Links

Links are important for all users and should be constructed properly whether you are aiming for Accessibility or not.

Links should be provided with text that identifies the purpose of the link. This is a good guideline not only for Accessibility but for search engine optimization. Your site visitor should be able to determine where the link will take them or what it will do without clicking on it. Some Assistive Technologies provide users with a list of all links on a page. A link that reads "click here" will not give them any useful information when taken out of context this way.

Links to the same destination should also have the same description. This is a requirement for a good interface because it gives predictability but it is frequently ignored by search engine optimizers who pepper pages with keyword links all leading to the same place. Don't do this.

Sometimes it will not be possible to include the full context within the link.

1. Provide the context as close as possible to the link so that the user can identify the purpose without moving their focus. This could be in the same sentence, list item or table cell.
2. Include the context in the preceding text by positioning it at the end of a sentence. Screen readers go through text in order from top to bottom so this positioning prevents them from having to go backwards.

The guidelines do provide an exception for links where the purpose of the link cannot be determined from the information on the page. In our view, there is no good reason to have a link that has no context on the page. The example given by the W3C is as follows:

*Example:* The word guava in the following sentence "One of the notable exports is guava" is a link. The link could lead to a definition of guava, a chart listing the quantity of guava exported or a photograph of people harvesting guava. Until the link is activated, all readers are unsure and the person with a disability is not at any disadvantage.

In our opinion, all users would be better served by simply re-wording the content: "One of the notable exports is guava. [Learn more about guava exports.](#)"

SiteCM supports the creation of a title attribute on a link however this is not a suitable solution for accessibility because of poor support browsers and Adaptive Technologies.

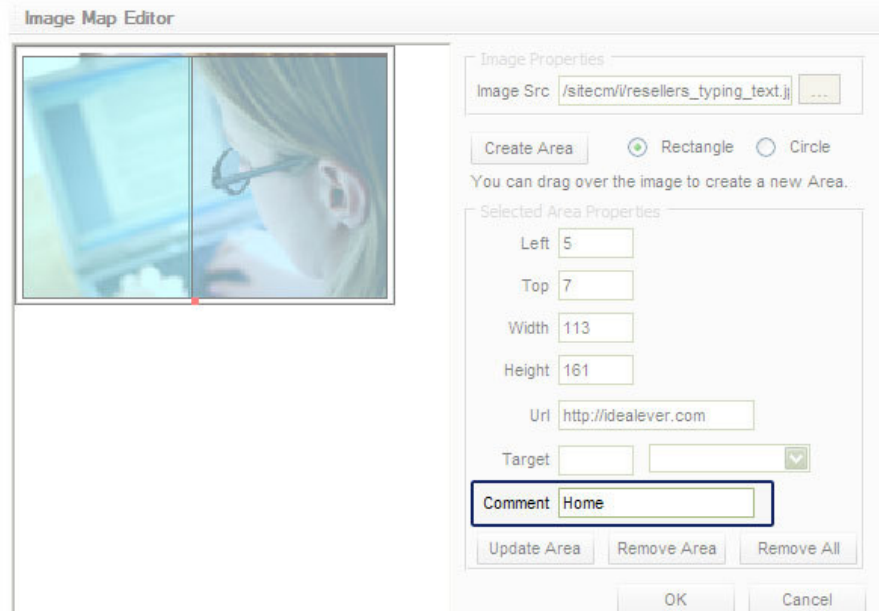
<http://www.w3.org/TR/UNDERSTANDING-WCAG20/navigation-mechanisms-refs.html>

<http://www.w3.org/TR/UNDERSTANDING-WCAG20/navigation-mechanisms-link.html>

## Image Maps

Image Maps are essentially just collections of links organized by their relationship to an underlying image. SiteCM supports the creation of client side image maps which can be made compliant with Web Accessibility Guidelines.

The only requirement is to use the alt attribute for both the image and the hot spots.



## Multimedia

While SiteCM will not create multimedia, it does allow you to incorporate this sort of content. You should ensure that your media developer is familiar with the WCAG and specify that you need compliant files.

The key requirements for accessibility are subtitles or sign language of the script for videos.

There are additional requirements for interactive multimedia to ensure that people with disabilities can use the material successfully regardless of how they are accessing it.

<http://www.w3.org/TR/UNDERSTANDING-WCAG20/media-equiv.html>

<http://www.w3.org/TR/UNDERSTANDING-WCAG20/time-limits.html>

## 3<sup>rd</sup> Party Elements

SiteCM gives Content Owners the ability to easily embed a variety of 3<sup>rd</sup> party tools. The range from Facebook elements, Twitter feeds, Amazon reading lists, or surveys. Since you have no direct control over the way the elements are rendered, these elements could affect the Accessibility of your site. As long as they are not integral to the function and content of your site, these are generally acceptable but will fail strict Web Accessibility tests.

## Appendix 1: Section 508

Section 508 is much simpler than the W3C WCAG 2.0. Following the recommendations above should ensure that your site is compliant. Section 508 has not been updated and references WCAG 1.0.

The relevant requirements are provided here with comments.

### § 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 shall 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) Documents 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, 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 plug-in or applet that complies with §1194.21(a) through (l).
- 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.

### **Note to §1194.22:**

1. The Board interprets paragraphs (a) through (k) of this section as consistent with the following priority 1 Checkpoints of the Web Content Accessibility Guidelines 1.0 (WCAG 1.0) (May 5, 1999) published by the Web Accessibility Initiative of the World Wide Web Consortium:

2. Paragraphs (l), (m), (n), (o), and (p) of this section are different from WCAG 1.0. Web pages that conform to WCAG 1.0, level A (i.e., all priority 1 checkpoints) must also meet paragraphs (l), (m), (n), (o), and (p) of this section to comply with this section. WCAG 1.0 is available at <http://www.w3.org/TR/1999/WAI-WEBCONTENT-19990505>.

# Appendix 2: Additional Resources

## Guidelines

### W3C

The World Wide Web Consortium's Web Accessibility Initiative is the international leader in creating standards and guidelines.

WAI Homepage: <http://www.w3.org/WAI/>

WCAG 2.0 Homepage: <http://www.w3.org/TR/WCAG20/>

A very useful and well thought out resource is their Understanding WCAG 2.0 document which can be found at <http://www.w3.org/TR/UNDERSTANDING-WCAG20/>. This provides links to explanations of the purpose of each requirement and techniques for accommodating the guidelines.

### Section 508

Users in the United States are governed by Section 508 requirements. You can register with the site and take an online course (4 hrs) about designing accessible web sites.

<http://www.section508.gov>

## Tools

There are many extremely useful tools available to check your work and help you design and maintain accessible web site.

- <http://www.wat-c.org> is the Web Accessibility Tools Consortium and they maintain a list of free tools to help with the development and testing of accessible web sites.
- <http://www.w3.org/WAI/ER/tools/complete> is a list of commercial and free tools maintained by the W3C

No single tool can give you a complete analysis of compliance or accessibility.

A few tools that we have used are listed below. This list is provided as a service only. There is no warranty given or implied. You download and use these tools at your own risk. Please check for compatibility before you install.

As with many things, once you have found what you are looking for, you stop looking. There may be better tools out there.



## **WAT**

The Web Accessibility Toolbar is provided by Wat-C and is available in several languages for IE and Opera. Check the Wat-C site for current status of a Firefox version. This toolbar incorporates many different tests. Currently in Beta, there are a few glitches.

<http://www.paciellogroup.com/resources/wat-ie-about.html>

## **WAVE**

WAVE is a free service and toolbar provided by Web AIM (see below). The toolbar can be installed in Firefox and gives you a visual indication of accessibility with icons showing errors and warnings. You can also use WAVE to view your page as text only, outline or structure order. Viewing as plain text or structure orders gives you a good approximation of how the site is viewed using assistive technologies.

<http://wave.webaim.org/>

## **Contrast Checker**

This is included in the WAT toolbar but is also available as a stand-alone for Firefox. In my WAT 2.0 Beta version this function was not working properly so I had to use this version for Fire Fox.

<http://juicystudio.com/article/colour-contrast-analyser-firefox-extension.php>

## **Vischeck**

Vischeck shows you what your site and images will look like for someone who is colour blind. You can use an online service or download plugins for Photoshop however the plugin readme file is dated 2001 so it might not be compatible with newer versions.

<http://www.vischeck.com/vischeck/>

## **Screen Reader**

There are many commercial versions available but we have been using Thunder, a free screenreader for Windows XP and Vista.

<http://www.screenreader.net/>

There are also many vendors that have free trial downloads or limited functionality free versions

<http://www.naturalreaders.com> and <http://www.nvda-project.org/>

## **Organizations**

I got a lot out of Web Accessibility in Mind or Web AIM for short. They have a very thoughtful approach to web accessibility.

<http://www.webaim.org/>