**What is WCAG?**

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# Intro to WCAG

WCAG stands for Web Content Accessibility Guidelines. These guidelines are created, in part, for a larger accessibility initiative which was initiated by the World Wide Web Consortium otherwise called W3C. They were made in order to provide a set of rules that, when followed, would make a web site more accessible to people with disabilities such as those with poor vision or hearing.

## P.O.U.R.

The WCAG guidelines are organized under four main principles. These four main principles are:

**Perceivable** – Having all the components of information and user interface available to the user in a medium that is perceivable through more than one sense. This essentially means that a site should support a user’s ability, or disability, with regards to a certain sense. Making it so a user can utilize a site without being able to see or without being able to hear.

**Operable** – Having all of the various interface components operable through the use of multiple mediums such as through a mouse, keyboard, or through verbal processing software. This principle is of the idea that the user must always be able to use an element on the page such as a button through the use of only the keyboard or only the mouse or another recognized interface.

**Understandable** – Having a site that is understandable means presenting the information in a manner that is simplistic and organized. The complexity of the information within the site should be based on the target audience of the content. Use language and information in a manner that the target audience would likely be able to understand.

**Robust** – How robust a site is, is determined by how well other user agents such as browsers, file viewers, and assistive technologies, are able to understand the document.

## Priorities and Checkpoints

WCAG has been approved as an ISO standard: ISO/IEC 40500: 2012 (ISO, 2012) and functions based on a series of prioritized checkpoints containing a series of leveled conformance requirements. Lower leveled priorities and conformances are extremely vital and if left out would make it impossible for someone with a disability to access certain parts of a site. The higher leveled priorities and conformances are those that are more optional. Not including them won’t completely cut out someone from accessing a part of a site but won’t make it any easier for them.

There are three different levels of priorities or checkpoints in WCAG:

**Priority 1:** A web content developer must satisfy this checkpoint. Otherwise, one or more groups will find it impossible to access information in the document.

**Priority 2:** A web content developer should satisfy this checkpoint. Otherwise, one or more groups will find it difficult to access information in the document.

**Priority 3:** A web developer may address this checkpoint. Otherwise one or more groups will find it somewhat difficult to access information in the document.

(W3C, Checklist of Checkpoints for Web Content Accessibility Guidelines 1.0)

## Levels of Conformance

Within these priorities there are three different levels of conformances that are based around certain requirements: A, AA, and AAA. These conformance levels are similar to the prioritized checkpoints in terms of how needed they are in a site. The lower level (A) must be included while the higher level (AAA) is more or less optional depending on the requirements of the site. The higher levels of conformance are more difficult to implement into a site based on the general amount of work and restrictions on site design that comes with meeting the stricter conformance criteria.

For example the use of colour in a site is often used to convey information to the user. Using the colour blue can often dictate that something is a link while red text tells about an error or something of immediate importance. The conformance requirements for colour at different levels goes as follows:

**(A) 1.4.1 Use of Colour:** Colour is not used as the only visual means of conveying information, indicating an action, prompting a response, or distinguishing a visual element.

**(AA) 1.4.3 Contrast (Minimum):** The visual presentation of text and images of text has a contrast ratio of at least 4.5:1 except for the following: large text, incidental and logotypes.

**(AAA) 1.4.6 Contrast (Enhanced):** The visual presentation of text and images of text has a contrast ratio of at least 7:1, except for the following: large text, incidental and logotypes.

(W3C, Web Content Accessibility Guidelines (WCAG) 2.0, 2008*)*

As you may notice the higher level of colour conformance to the WCAG means following and increasingly stricter set of rules on the design of a site. This makes designing a site that fits many forms of high level conformance very difficult and restrictive on extending a personality to the site.

You should also note that the different conformance levels are often considered more important than priorities or checkpoints. When sites are rated on their accessibility they are rated based on conformance level criteria rather than based on completed checkpoints or priorities.

In order for a site to be considered compliant with level A, AA or AAA they must satisfy all of the criteria and checkpoints within that given level of conformance as well as all lower level criteria. For example a site that complies with all A and AA conformance criteria would be considered level AA compliant. On the other hand a site that complies with all A and AAA but not AA can only be considered level A compliant.

# The Existence of WCAG Today

In today’s world communication through electronic means is the fastest growing form of technology and communication. With such an uprising in the electronic median we need to find ways to allow those who are predisposed to be at a disadvantage to be able to use online services much like anyone else.

Many of the more developed countries existing laws and rights would say that if someone with a disability, such as being legally blind, can’t use your site because the inability for assistive technology to understand your site then it could become an issue of discrimination. The issue of discrimination exists simply because the site is not assistive technology friendly and isn’t designed for fair use of the site amongst many people from different classes and abilities.

The Government of Ontario and the Legislative Assembly states that by 2016 all existing government public websites and web content must conform to the WCAG 2.0 Level AA criteria other than captions and pre-recorded audio descriptions. By 2020 all public and internal government sites and content must conform to all WCAG 2.0 Level AA criteria. (Ministry of Economic Trade and Development)

On the other hand public businesses with a site posted after January 1, 2012, must conform to WCAG 2.0 Level A criteria except for captions and pre-recorded audio descriptions. By the year 2021 all public websites and web content, posted after 2012, must conform to WCAG 2.0 Level AA criteria other than captions and pre-recorded audio descriptions. This is the government’s way of making things fair for people attempting to use services provided by companies. (Ministry of Economic Trade and Development)

Though Ontario is just a small example other countries, such as Australia, Hong Kong and New Zealand, also require the WCAG 2.0 Level AA criteria for public sites. Other countries, such as India, Germany, and France, require criteria from their own set of guidelines that is based around WCAG 2.0 Level AA criteria. (PowerMapper, 2012)

# Design Practices to Conform to WCAG Criteria

While there are a lot of design principles and practices needed to conform to WCAG criteria there are a few common ones that can make your site much more accessible while not heavily constraining the overall design and personality of the site.

For example the following criteria is fairly simple and doesn’t add many constraints to the overall design of the site (W3C, How to Meet WCAG 2.0, 2013):

* Use text within hyperlinks that makes sense and has some description. Don’t use hyperlinks that have a simple saying like “Click Here”.
* Use alternative text for images and videos. This allows accessibility programs to read information about these objects for which it would not otherwise understand.
* Use the title attribute on forms and form fields to give the accessibility program something to read about the field and relay to the user.
* Avoid using colours and images as a main source of information for a site. These are unreadable by an accessibility program. Try making this information available in a textual format of some kind.
* Captchas should have the option to be either text or audio.
* Avoid using rollover/cascading menus as they are difficult for an accessibility program to interpret.
* Avoid leaving hidden text on a page that is irrelevant to what is currently occurring on the page. An accessibility program will still read this text and relay confusing and unusable information to the user.

The following examples fulfill higher level criteria though are more difficult to implement and add multiple constraints to site design (W3C, How to Meet WCAG 2.0, 2013):

* Use a sign language video where pre-recorded audio would be present
* Have a text to background colour ration of 7:1.
* If you are using pre-recorded speech audio then have either no background audio, the option to turn background audio off, or have the background audio at least 20 decibels less than the foreground audio.
* When an authenticated session expires, make sure the user can continue the activity without loss of data after re-authentication.
* Make some form of mechanism available so that the purpose of a link can be identified by link text alone, except when the purpose of the link would be ambiguous to users in general.
* Make some form of mechanism available so the user can identify specific definitions of abbreviations, words used in an unusual way such as: idioms and jargon, or identify the specific pronunciation of a word where the definition is ambiguous without knowing pronunciation.

# How to know if you comply with WCAG 2.0?

The answer to the question “does it comply with WCAG?” might be one of the more important questions to ask when it comes down to this matter. Since most governments and certain public sectors want you to have that quintessential stamp of accessibility.

The answer to this question will depend on the criteria of those who are giving out this stamp of approval. While these people will hopefully follow the guidelines provided it doesn’t always mean that everyone will have the same interpretation of what each of the guideline criteria might mean.

Assuming that everyone has the same interpretation of what each of the criteria means then the process becomes much simpler but still brings up some dilemmas in the assessment process. In order to truly know if something is accessible we would need someone with a specific disability to attempt to read/use the document and see if they can successfully do so. Unfortunately this is not a realistic testing scenario and could end up taking too much time to identify some of the basic issues.

The next closest thing we have to this is to use the assistive technology manually by someone who is already experienced in the field of accessibility. They will already have a strong understanding of how the software will function, how to make certain things more accessible, and will have likely developed a knowledge of what they need to look for in their assessments.

Assuming they assess the provided document and have no issues then it might be safe to say that your document would very likely conform to the WCAG criteria.

# Pitfalls of WCAG

Because WCAG was designed to be a generic set of rules that can apply to documents, web sites, and rich client applications the “rules” of WCAG are very generic and don’t delve into anything specific.

This higher level of guidance and recommendation means that these rules can have many different interpretations. The many different interpretations can lead people to find different solutions or implementations that they believe solve the problem that someone else may not.

On the development end this can cause strain between team members that may persist or alter the layout of certain iterations of the project development cycle. It can become especially cumbersome when dealing with the legal issues associated around accessibility. Different countries may have different interpretations making development of region locked content more difficult as there may be a different general consensus on accessibility depending on where you go.

# Benefits of WCAG

WCAG enforces more constraints on the general design of websites, documents, and client applications. Though this increases the difficulty and resources required for finishing these solutions it does help to promote a certain unity and quality within the projects.

The unity or cohesiveness between the different projects occurs because people have to implement certain things in a certain way. It ultimately limits the number of available options and possible differences within certain projects such as PDFs and websites.

The improvement in quality occurs mostly with websites and rich client applications. The quality is a result of having heavier constraints placed on the project. The heavier constraint means that the specific order and design of elements has to be taken into a heavier level of consideration. Consideration for how it can be simplified, how it can be more meaningful, and how it can be properly interpreted in multiple different user agents.

The most obvious benefit of WCAG is that it makes multi-media, digital information more available to those that have a disability or aren’t what many would be considered to be “tech-savvy”. This will produce a better quality of living for these people while giving them a fair and equal opportunity.

# Appendix

## Important Terminology

There are some terms that you may need to know before-hand though some will be explained later on in the report.

These terms include:

W3C – World Wide Web Consortium

WCAG – Web Content Accessibility Guidelines

IEC – International Electrotechnical Commission

ISO – International Organization for Standardization

WAI – Web Accessible Initiative started by W3C to make the World Wide Web more accessible to people with disabilities.

Web Content – In the context of this report, and the WCAG Overview, web content refers to information in a web page or application such as:

Natural information such as text, images, sounds

Code or markup that defines structure, presentation, etc.

Accessibility Programs – In the context of this report an accessibility program is a program that sends textual information back to the user. The information could be provided in the form of plain text or read out loud to the user in a text-to-speech functionality.

## References

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