Accessibility Report

CIS 435 Human Computer Interaction
Professor Joyram Chakraborty

Authored by
Adam Boube, Jacob Kahn, Jasmine Rivera, Sophie Okere, and Trevor Danielewski

Table of Contents

Abstract **2**
Government Website: Baltimore City Sheriff Office **2**
Website Overview 2
Critical Elements 2
Accessibility Score 4
Conclusion 5
Commercial Website: Taragüi **6**
Website Overview 6
Critical Elements & POUR 6
Perceivable 6
Operable 6
Understandable 7
Robust 7
Conclusion 7
Compliant 9
Non-Compliant 9
References 12

Abstract

This report summarizes the findings from an analysis of two websites, a government site and a non-English site, to evaluate their implementations of web accessibility guidelines. The goal is to assess and classify their compliance with key principles outlined by WCAG, W3C, UAAG, and ATAG. The websites analyzed are the Baltimore City Sheriff's Office and Taragüi. The analysis concludes that both websites fail to incorporate substantial accessibility features to ensure they are usable by people of different backgrounds and abilities. This report provides an in-depth discussion of the findings.

Government Website: Baltimore City Sheriff Office

Website Overview

This website is the official home page of the Baltimore City Sheriff's Office. It provides information about the role the Sheriff's Office plays in serving the city and its residents. It also offers resources to help people with common questions or more serious inquiries, as well as options to fill out assistance forms and view available job opportunities.

Critical Elements

While evaluating the Baltimore City Sheriff's Office, we identified several accessibility issues that confide in the WCAG 2.1 requirements. Below are our findings of the critical elements present on the interface, as well as those who are affected with these issues.

(1.1.1: Non-text Content):

Many images on the interface lack proper alternative text, using title attributes instead of added descriptions. Users who rely on text will not be able to understand the purpose of these images, making the visual content inaccessible.

(1.3.1 - Info and relationships):

We identified 3 elements on the interface where the semantic order is incorrect. Heading tags are present within code, but do not contain any visible text content. Necessary heading order is important for users to understand the structure of the content to understand what is trying to be presented on the page. Misconfigurations present confusions and harder navigation.

(1.4.3 - Minimum Contrast):

The accessibility checker highlighted an element where the contrast between the foreground and background colors do not meet the minimum standards of at least 3:1. Lower contrasts can make text and other elements difficult for users with color difficulties.

(1.4.4 - Resize Text):

An element was detected where the meta viewport prevents users from scaling their text and/or zooming throughout the page. By restricting the zoom feature, users with vision impairments are not able to read the content comfortably. Ensuring that all users can adjust their text while still being able to function the interface is a necessary accessibility feature for a positive experience.

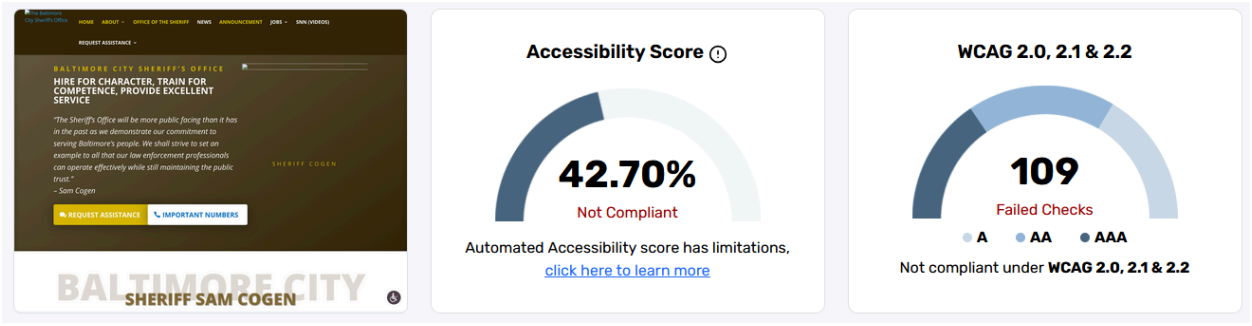
(2.4.1 - Bypass Blocks):

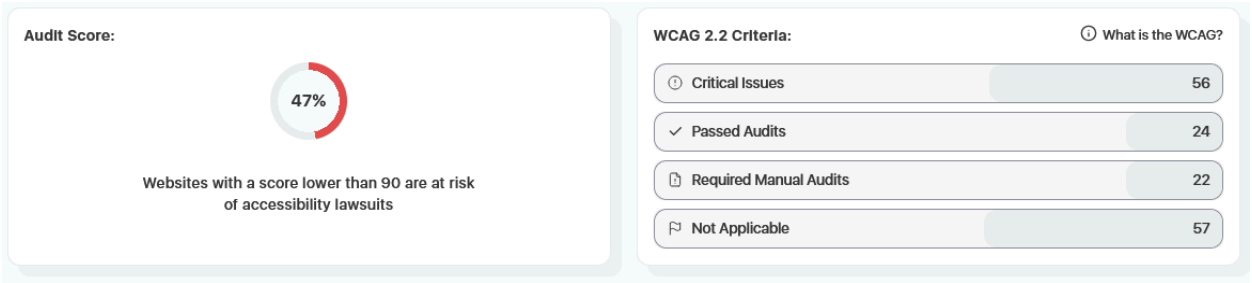
Our accessibility checker identified 38 failing elements where the page did not properly contain landmarks which contain header, main, navigation, and footer. Landmakers make navigation easier for users using assistive features because they give them a reference to skip to the important content. Without landmarks, readers and keyboard users will have to manually tab through elements, which is seen as inefficient.

(2.4.6 - Headings and Labels):

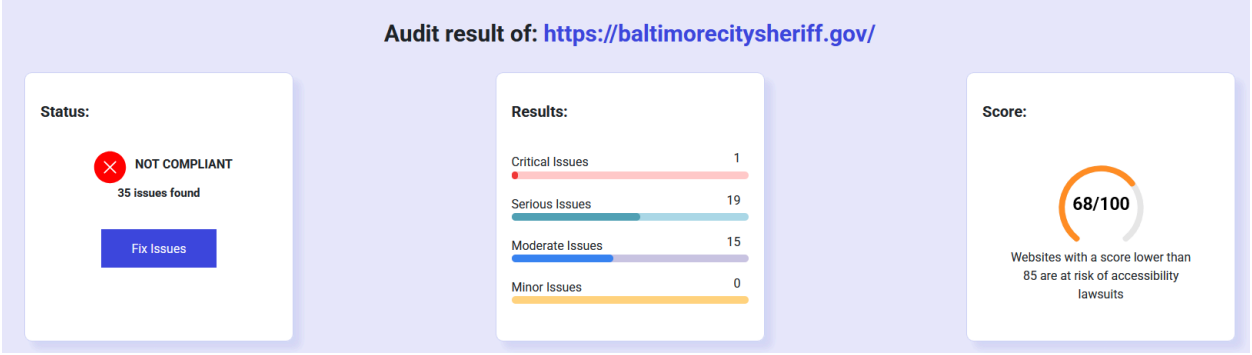
There is an instance where 1 page does not contain a level one heading. The h1 heading provides a signal for the main purpose of the content, which is important for readers. Without that primary heading, you may face difficulty understanding the focus of the page.

Accessibility Score





#	Issue	Total Failing Elements	Disabilities Affected	WCAG Success Criteria
1	Ensures the order of headings is semantically correct	3 elements	Blind, Deafblind, +1 more	Best Practice
2	Ensures links have discernible text	12 elements	Blind, Deafblind, +1 more	WCAG 2.0 - 2.2 Level A, +2 more
3	Ensures <meta name="viewport"> does not disable text scaling and zooming	1 element	Low Vision	WCAG 2.0 - 2.2 Level AA, +1 more
4	Ensure that the page, or at least one of its frames contains a level-one heading	1 element	Blind, Low Vision, +1 more	Best Practice
5	Ensures all page content is contained by landmarks	38 elements	Blind, Deafblind, +1 more	Best Practice
6	Ensures the contrast between foreground and background colors meets WCAG 2 AA minimum contrast ratio thresholds	1 element	Low Vision, Colorblindness	WCAG 2.0 - 2.2 Level AA, +1 more



Conclusion

When improving the accessibility of the Baltimore Sheriff Office Website, we need to address both the structure and content related concerns. The following list presents the necessary corrections that are recommended in the WCAG 2.1 standards to enhance the experience for every user:

1. Clear Links Texts:
    - Replace any missing text with labels that communicate the purpose of the link before navigating to it. This allows readers to navigate with confidence without assuming where each link will lead.
2. Color Contrast:
    - Adjust the contrast of the foreground and background colors so all elements meet the required WCAG 2.1 AA minimums. Higher contrast tends to those with color impairments.
3. Outside Languages:
    - Simply considering providing content in another common language or presenting a translation feature increases accessibility for those who are non-english speakers.
4. Landmarks:
    - Ensuring that every page contains semantic landmarks helps users who use assistive technology and want to identify main topics.
5. Proper Heading Structure:
    - Any empty or misconfigured heading tags should be fixed. Headings should reference a hierarchy from level one to three depending on context. The proper headings allow users to navigate more efficiently and understand the dynamic between sections.
6. Viewport
    - Configure the viewport settings to allow users to resize the text and zoom without restructuring the layout. This is highly important for low vision users who rely on reading content.

Commercial Website: Taragüi

Website Overview

This website represents a popular Argentine yerba mate brand. It features information about the drink, which is enjoyed throughout South America, and provides guidance for consumers on how to prepare mate and learn more about it. The site also includes a blog section that offers useful information about the culture surrounding mate and the reasons people drink it, including the traditional rules for sharing and enjoying it.

Critical Elements & POUR

To analyze the website's critical elements, the acronym POUR is often used in web accessibility and usability guidelines, particularly within the Web Content Accessibility Guidelines (WCAG). POUR represents four key principles that help ensure a website is accessible to users of all abilities: Perceivable, Operable, Understandable, and Robust.

Perceivable

The idea behind Perceivable is that Information and user interface components must be presented in ways users can perceive, meaning they must be able to sense and access the content such as, through text alternatives for images or captions for videos.

The website maintains a simple and easy-to-navigate design; however, it uses only a few contrasting colors, which may limit visual clarity. While the videos and images included are helpful, many images lack alternative text or use unclear and ambiguous descriptions. Additionally, some images appear to be videos even though they are not playable, which can confuse users. The site also offers multiple languages; however, not all text, images, or videos are fully translated into the selected language.

Operable

The idea behind Operable is that user interface components and navigation must be operable, meaning users should be able to navigate and use the interface with a mouse, keyboard, or assistive tools.

The website allows users to navigate the interface using both a mouse and a keyboard, meeting basic operability requirements in most areas. Several links function properly, though a few dead links remain and may disrupt navigation. The site does not include any forms, and the contact button simply opens the user's default email application to compose a message. While some content is translated, certain buttons are not translated into the selected language, which can hinder usability for non-Spanish speakers. Additionally, users cannot change the selected

language without using a mouse. The TAB key does not reach the language selector, creating a significant accessibility issue for users who rely on keyboard navigation.

Understandable

The idea behind Understandable is that information and the operation of the user interface must be understandable, meaning the content and website functions should be clear, predictable, and easy to follow.

The website includes a language-switching feature, allowing users who speak different languages to access and understand the site's textual content. However, the site appears to mix Spanish and English, and it is unclear whether the navigation and content structure remain consistent across languages. This inconsistency may confuse users and reduce predictability. Also, when selecting certain navigation menu items in the English version, the site momentarily reverts to Spanish, which may further disrupt the user experience.

Robust

The idea behind Robust is that content must be robust enough to be interpreted by a wide variety of user agents, including assistive technologies, meaning the site should work reliably across different devices, browsers, and assistive technologies now and in the future.

The HTML source code shows that the site is heavily JavaScript. If implemented well, it can still be robust, but it also means that if JavaScript fails or is blocked, large parts of the pages might not render. Also, much of the page structure is built using generic elements rather than semantic HTML tags like <header>, <nav>, <main>, etc., which may hinder accurate interpretation by screen readers and other assistive tools.

Identify the critical elements that are related to POUR

Should include explanations of what these standards mean and examples displaying whether the website is in compliance with these standards.

Conclusion

Overall, the systems make an effort to follow the usability principles, but the execution is inconsistent. According to Shneiderman's 8 Golden Rules of Interface Design, Strive for Consistency means the interface should look and behave the same across all pages, switching through multiple languages shows the font and structure of the site changes and words do not fit in their text boxes, also on the english site some of the words are still in spanish. While the site

does provide universal usability only in languages, there are plenty of languages to choose from, there is no usability for those with disabilities, like hard of hearing, to access the website. The site offers a contact email that takes you out the website and into your mail application, so this does not support locus. The following lists the corrections that are recommended according to Shneiderman's 8 Golden Rules of Interface Design:

- Strive for consistency
    - Updating each interface of the website to be consistent and similar in terms of actions, terminology, appearance, font size and structure should be implemented to allow users to apply the same knowledge of what they learnt in one part of the interface to the others. This is also applied to the option of switching through different languages and hoping to see the same formatting and consistency.
- Cater to universal usability
    - The remedy for this would be designing the interface to be accommodating for different diverse users, including those with different experience levels, physical abilities, and technological experiences. This includes but is not limited to, providing audio options for people with loss of hearing, providing an accessibility icon, which would have different edit options for people with bad eyesight or color blindness. The website provides the option to switch between different languages for its different users, but that does not fully supplement the other universal usability that it does not offer.

- Offer informative feedback
    - Providing the opportunity through emails, chat box or text options for its users to be informed about what is happening and give adequate feedback within a reasonable time.

- Design dialogs to yield closure
    - Ensuring that each action is organized with a clear beginning, middle, and end while completing any process on the interface.

- Prevent errors
    - To make the interface better, it should be designed to prevent errors from occurring, like preventing deadlinks, and ensuring that if errors occur, they can be easily corrected, by providing simple, constructive, and specific instructions for error recovery.

- Permit easy reversal of actions
    - This website already does a good job in ensuring that each action is reversible and can be undone with a single action. Enhancing and updating this feature will relieve any anxiety when a customer uses the website.

- Support internal locus of control
    - Making sure that each user feels in total control of the actions and the system. This can be achieved by designing the system to respond to the user input in a predictive manner.

- Reduce short-term memory load
    - Because the human brain can only hold a limited amount of information in short term memory, the interface should be updated so it does not have too much information being put out. It should be simple and avoid any overloading across each screen. Designing the website with recognition over recall by having clear labels, menus, and visible key information is all that is needed.

Using the 7 plus or minus 2 rule, this website has a lot of long paragraphs to read, and instructions are not visible to read and understand.

Compliant

Despite the website's limitations, the website Taragui includes many features of the site being compliant to usability principles. The visual designs of the overall site use very few colors, and the ones provided contrast making the text readable against the background. The website also supports language changes, allowing users to switch languages easily, giving users a sense of control and universal experience. Navigation including a button reading “volver al inicio” which is “Return to home/start” makes it simpler for users to return to home and beginning of a page or section, also, and email/contact button provides a way for users to reach out for help or concerns of the site by opening the mailing application providing the sites contact email.

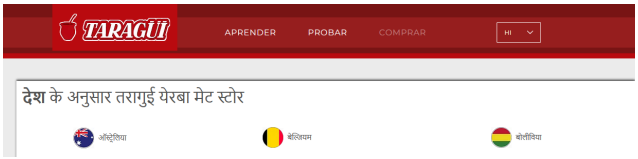
- Very few colors
- Contrasting colors
- Language changing
- User is in control
- There is a button that says “volver al inicio” which is “Return to home/start”
- Email/contact button opens up email app (desktop app)

Non-Compliant

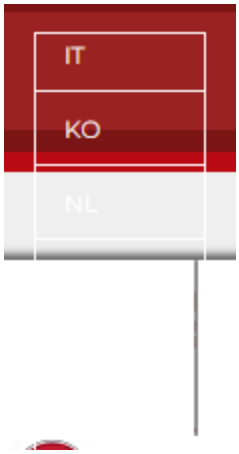
However the site's non-compliant features hold significant value to weaken its usability and accessibility. Not every language option is available, and even the ones that provide a few of the languages are not accurate. A few of the buttons don't work on the home page, the arrows move across slides and the more information plus buttons do not respond leading to dead links and interrupt navigation. Some YouTube videos provided require the user to sign in before viewing, and in certain browsers the video does not exist. The language changing navigation feature is difficult to see the languages listed due to an hollow navigation, and the colors

blending into the background. Users also cannot use the TAB key to navigate and must rely on mouse or pointer devices, which makes the site inaccessible for many users. Additionally, all pdfs provided are only in spanish, and switching languages images appearing products also remain in spanish. The page format from one language to another often breaks and causes text to shift and overlap.

- Not every language is there
- A few buttons don't work
- Dead links
- Need to sign into youtube to watch videos (from firefox, text on other browsers)
- Changing languages is difficult to see
- Cannot change language without a mouse/pointer device (cannot use the TAB button)
- Pdfs are only in spanish
- Images that look like videos don't do anything
- Changing into another language, the images will remain in spanish
- Changing to another language will mess up the format
  -

  - 

  -


IT
KO
NL

References

Ben Shneiderman. (n.d.). https://www.cs.umd.edu/users/ben/goldenrules.html

Kirkpatrick, A., & Cooper, M. (Eds.). (2025, May 6). *Web content accessibility guidelines (WCAG) 2.1*. W3C. https://www.w3.org/TR/2025/REC-WCAG21-20250506/

(WAI), W. W. A. I. (2025, June 23). *Web accessibility evaluation tools list*. Web Accessibility Initiative (WAI). https://www.w3.org/WAI/test-evaluate/tools/list/

(WAI), W. W. A. I. (2005, July). *User agent accessibility guidelines (UAAG) overview*. Web Accessibility Initiative (WAI). https://www.w3.org/WAI/standards-guidelines/uaag/

Yerba mate Taragüi. Taragüi Comex. https://www.taragui.com/

The Baltimore City Sheriff's Office. https://baltimorecitysheriff.gov/