

WEB ACCESSIBILITY REPORT

Evaluating San Diego Metropolitan Transit System's Website

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Executive Summary

San Diego Metropolitan Transit System's (MTS) website provides on-demand information regarding transit locations, schedules, and fares. Website accessibility is important for this site, as many people with disabilities rely on transit to navigate the city. In this report, I evaluated the accessibility of the MTS homepage and bus route page. I used the W3C Easy Checks, HTML and CSS Validators, and the overall assessed readability score. To go more in-depth, I used two automated evaluations tools, the Siteimprove and WAVE browser extensions to evaluate further violations. All these findings were categorized into the POUR framework, using WebAIM WCAG 2.0 Checklist (<https://webaim.org/standards/wcag/checklist>).

Major findings showed that accessibility could be improved by addressing gaps in the HTML of the MTS site. Both pages evaluated were missing several WAI ARIA labels or had incorrect ID labelling. Pages did not follow clear hierarchy in heading structure. Use of media could also be improved as several images lacked alt-text, and users could not control rotating media animations (image carousels). To improve further accessibility on the site, MTS should fix HTML structuring, employ proper ARIA labelling, and give users more control over media.

About the Website

The MTS website is the official online information center for San Diego County transit. The site offers information on mapping routes, viewing bus or train (or trolley) schedules, assessing fare costs, and describing local events. The site appears to cater towards commuters and individuals looking to use transit to go to events. This is evident in the prominent Trip Planner feature on the homepage, where users can enter multiple locations and view which transit system, they need to get from point A to point B. The site appears to also cater towards new or infrequent transit users, with a Commute Cost Calculator featured on the homepage.

This report focuses on assessing the accessibility of the MTS homepage and Bus Routes subpage. The homepage (<https://www.sdmts.com/>) features aspects most major subpages, such as a Trip Planner tool, list of schedules, alerts and detours, fare information and local events. The Bus Routes page (<https://www.sdmts.com/transit-services/bus-routes>) includes a list of all bus routes with PDF links for each route. I chose to examine accessibility of the MTS website because many people with disabilities rely on public transit. Transit websites provide vital information regarding route scheduling, transit delays, and stop locations that people of all abilities should be able to access.

Methods and Tools

W3C Easy Checks

I went through both pages of the MTS site using the Easy Checks to get a baseline on accessibility - (<https://www.w3.org/WAI/test-evaluate/preliminary/#title>). Findings were noted and further categorized into the POUR findings as applicable

W3C HTML and CSS Validators

I ran the page URLs through HTML (<https://validator.w3.org/>) and CSS validators (<https://jigsaw.w3.org/css-validator/>). These findings were documented and compared with parsing notes from Siteimprove and WAVE analyses.

Readability Score

I used a free readability evaluator from WebFX (<https://www.webfx.com/tools/read-able/>) to assess readability of both site pages. This site gave an average reading age-level, and Gunning-Fog and Flesch Kincaid scores.

Siteimprove and WAVE Evaluation Tool Analysis

I used two automated accessibility browser extensions, Siteimprove (<https://www.siteimprove.com/integrations/browser-extensions/>) and WAVE Evaluation Tool (<https://wave.webaim.org/extension/>) to assess page accessibility according to POUR guidelines. Violations were further inspected through viewing the source code as needed and noting in the findings.

Findings

Perceivable

Guideline 1.1 Text Alternatives

- 1.1.1 Non-text Content: On the homepage, six images were missing alt text, one of these being a spacer image. In addition, seven images were not marked as decorative that should have been. Several buttons for trip planning were missing text. Two images on the Bus page were missing alt text, and one “Aria-labelledby” had an incorrect ID reference.

Guideline 1.2 Time-Based Media

- No violations

Guideline 1.3 Adaptable

- 1.3.1 Info and Relationships: On the homepage, the “Become a Rider Insider” email input field has no description. Additionally, there were 36 violations of ID rules, as IDs were used for multiple elements within both the homepage and bus page. There was also a WAI-ARIA group missing a name.

Guideline 1.4 Distinguishable

- 1.4.3 Contrast (Minimum): The homepage contains two links that are blue on a white background. The Bus page has the same violation with blue and white contrast being insufficient, with 104 contrast violations. The contrast ratio shows that the color contrast of links is not sufficient for low-vision users.
- 1.4.5 Images of Text: There are six images on the homepage that contain text – however, all of these images also have a caption below that reiterates the text in the image.
- 1.4.6 Contrast (Enhanced): There are 15 violations of AAA contrast for normal text (4.86/7) on the homepage. The Bus page has 209 violations of AAA contrast for normal text (4.83/7).

Operable

Guideline 2.1 Keyboard accessible

- No violations

Guideline 2.2 Enough Time

- 2.2.2 Pause, Stop, Hide: On the homepage, a carousel of image cards automatically starts, lasts longer than 5 seconds and the user is unable to stop.

Guideline 2.3 Seizures and Physical Reactions

- No violations

Guideline 2.4 Navigable

- 2.4.1 Bypass Blocks: On the homepage, a link is provided to skip to main content, but it skips to the bottom of the page, and passes main content
- 2.4.2 Page Titled: The Bus Routes page has a descriptive and informative title of “Bus Routes”, which is present in the title attribute and on the page heading. However, this title is different in the navigation menu, where it is referred to as “Bus Schedules.”
- 2.4.4 Link Purpose (In Context): The PDF links on the bus page all use the same link text of “PDF”, and there are not WAI-ARIA labels to clearly distinguish between their destinations.
- 2.4.7 Focus Visible: On the homepage and on the bus page, visual focus is barely visible when tabbing through “schedules”, “alerts & detours” navigation menus, footer menu, and image and text cards. On the homepage, several links and buttons do not indicate visual focus when tabbed over, such as the location sharing button in the Trip Planner. The Bus page shows visual focus on links and buttons through an underline, but the color contrast between blue and white is reduced as the blue button becomes lighter when in focus.
- 2.4.10 Section Headings: The homepage uses h2 heading, but no other headings – lacks meaningful hierarchy. The bus page begins with an H2 Heading for the breadcrumbs, which might be confusing and does not show a sensible page structure.

Guideline 2.5 Input Modalities

- No violations

Understandable

Guideline 3.1 Readable

The homepage had a readability of 2.9 (bus page) - 4.7 (homepage) on the Gunning-Fog index. Readability was said to be appropriate for those 11-12 years of age and older.

- 3.1.2 Language of Parts: Spanish on the page is not defined using a language attribute on the homepage– “Dia de los muertos”

Guideline 3.2 Predictable

- No violations

Guideline 3.3 Input Assistance

- 3.3.2 Labels of Instructions: On the homepage and bus page, one input field was missing a description. In addition, the “Aria-labelledby” attribute for the side menu on the bus page has an incorrect ID reference.

Robust

Guideline 4.1 Compatible

- 4.1.1 Parsing: Homepage - The HTML checker found 120 warnings and 179 HTML parsing errors. The Siteimprove checker found 36 errors with ID elements on pages being used multiple times. Subpage - The HTML checker found 98 warnings 341 HTML parsing errors

Guideline 4.1.2 ARIA

- For both the homepage and bus page there is a lack of description on one input field, and an iFrame missing a title on three occurrences.

Screen Reader Experience

I used Voice Over on Mac to test the screen reading experience on the homepage and bus routes page. My experience using the screen reader highlighted violations found in my accessibility evaluation. When

navigating through the homepage, I was unable to ascertain the function of certain buttons that were not labeled. The screen reader voiced “button” for button icons signifying search (in the navigation bar), current location and reverse order. These buttons rely solely on visual indication to reflect their purpose. The image cards on the homepage did not interact well with the screen reader. The screen reader reads through the entire card even if you advance through to the next card. This caused me to lose track of where I was in the carousel.

The bus page had fewer varied elements, but more repeated violations. The stylistic elements applied to signify numerical order of bus routes were not formatted for the screen reader. In example, the styling applied for “1|” preceding the bus route name was read as “1 vertical line. Moreover, all PDF links were named “PDF” so it was difficult to understand which PDF route schedule was specific to each route. This appeared to rely heavily on the user’s recall.

Recommendations

- Add appropriate alt text to all images and avoid using images with text inside on both pages.
- Enhance visual focus when using keyboard to tab through the pages. Improve visibility of focus states.
- Ensure all input fields have descriptions
- Add descriptive labels to buttons that describe function
- Avoid unnecessarily styling on numerical content
- Add applicable language attributes to accurately signify all languages present
- Adjust “Skip to main content” link so that it points the user at the main content of the homepage, instead of the footer
- Add informative aria labels to distinguish between PDF destinations on the bus page
- Correct all HTML parsing errors sitewide
- Change the navigation title of the bus page to match the title attributes within the page

Appendix
Figure 1: Homepage

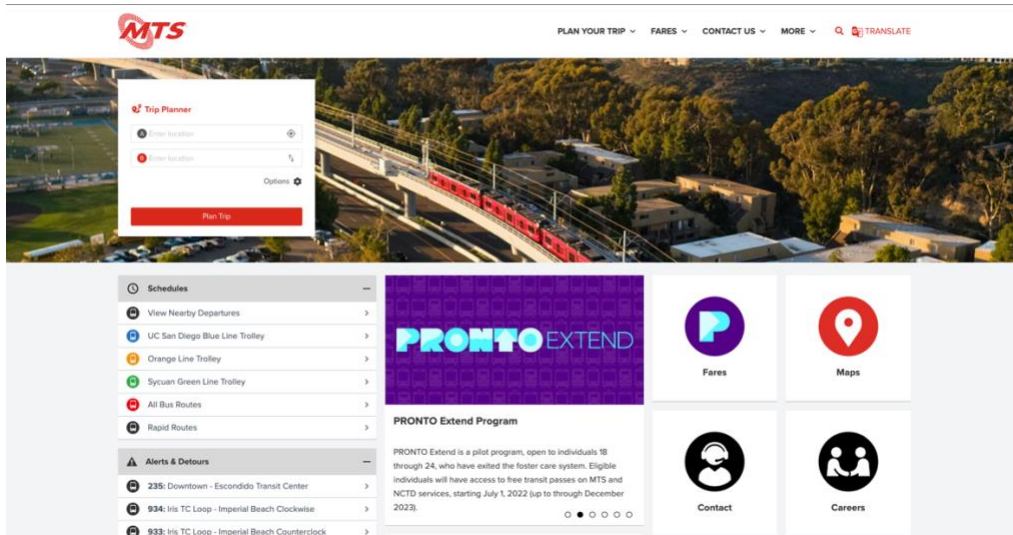


Figure 2: Subpage – Bus Routes

