



To: IT Service Management
From: Digital Content & Accessibility
Subject: [REDACTED] Preliminary Accessibility Evaluation
Date: September 26, 2016

The Digital Content & Accessibility team in MSU Information Technology conducted a preliminary evaluation of the accessibility of [REDACTED] against WCAG 2.0 Level AA. The evaluation did not include all functionality of [REDACTED] or all criteria of WCAG 2.0 Level AA. For more detail on the portions of the service that were reviewed refer to the screenshots below.

The accessibility evaluation discovered significant problems impacting users with a variety of disabilities including screen reader users, users who are color blind, users with dexterity impairments limiting their use of a mouse, and users with cognitive disabilities.

For instance, because the [REDACTED] popups [REDACTED] cannot be operated by keyboard, keyboard only and screen reader users will have no way to [REDACTED]. In addition to accessibility problems affecting these groups, there were a high number of blockers (accessibility problems that would prevent access to core processes) for form labeling and validation.

To improve the accessibility of [REDACTED] for individuals with disabilities, these initial findings should be considered and further review and remediation should be conducted. For more information, please contact the Digital Content & Accessibility team (webaccess@msu.edu, (517) 884-0666). For accessibility tutorials, please visit our website, webaccess.msu.edu.

Detailed Findings

Assistive Technology Support

- **Level 4 (Blocker):** Because the [REDACTED] button for forms precedes the form itself, the relationship between the submit button and the form is not made clear to screen reader users (see [1.3.1 Info and Relationships](#) and [1.3.2 Meaningful Sequence](#)).
- **Level 4 (Blocker):** Likely because of improper use of `tabindex="-1"` on many elements (and possibly javascript targeting non-interactive elements), many elements that are not interactive are identified as "clickable" by screen readers. In addition this phrase is repeated more than once for most affected elements, and as many as 9 times per element before the elements correct label is read (See [4.1.2 Name, Role, Value](#)).
- **Level 3 (Critical):** Because the keyboard focus is moved to the "OK" button in the [REDACTED] lightbox, screen reader users have to move backwards to understand the purpose of the lightbox and button (See [1.3.2 Meaningful Sequence](#)).
- **Level 3 (Critical):** Because screen reader focus is not restricted to the [REDACTED] lightbox, screen reader users could accidentally leave the lightbox and become lost (See [1.3.2 Meaningful Sequence](#)).
- **Level 3 (Critical):** The [REDACTED] link on the [REDACTED] page is not read by a screen reader when it is reached by tab (See [1.3.2 Meaningful Sequence](#)).
- **Level 3 (Critical):** Many unlabeled hidden interactive elements exist on the [REDACTED] page, causing the screen reader to repeatedly read the word "clickable" (See [1.3.2 Meaningful Sequence](#)).

- **Level 3 (Critical):** The [REDACTED] field is not being read properly by a screen reader in the [REDACTED] form on the [REDACTED] screen. It is reading the column and row letter and number in the table and not the value of the cell. (See [4.1.2 Name, Role, Value](#)).
- **Level 2 (Major):** While the “Click to Expand”/“Click to Collapse” link in the left navigation (identified with [REDACTED]) does communicate its current state (whether it is expanded or collapsed) to assistive technology, it does not fully communicate its name or role because it does not identify what it will expand or collapse (See [4.1.2 Name, Role, Value](#)).
- **Level 2 (Major):** The [REDACTED] button on the [REDACTED] screen is coded as a link instead of a button (See [1.3.1 Info and Relationships](#)).
- **Level 1 (Minor):** Tree items in the [REDACTED] tree which do not have children are given the attribute `aria-expanded="false"`. This causes them to be announced as “Collapsed” by the screen reader. Tree items which do not have children should not be given the `aria-expanded` attribute (See [4.1.2 Name, Role, Value](#) and [ARIA Authoring Practices Tree view Design Pattern](#)).
- **Level 1 (Minor):** The items in the left navigation are read twice by screen readers (See [1.3.2 Meaningful Sequence](#)).

Audio and Video Content

- No audio or video content was reviewed during this evaluation.

Color and Visual Elements

- **Level 3 (Critical):** The color red is the only means used to identify form fields in error (See [1.4.1 Use of Color](#)).

Content Structure

- **Level 3 (Critical):** Page titles lead with [REDACTED] and do not reference the [REDACTED] name. Proper pages titles should follow the format of Unique page name followed by site or unit name, followed by the organization name. In this case [REDACTED] for the [REDACTED] page, [REDACTED] for the [REDACTED] page, etc. (See [2.4.2 Page Titled](#)).
- **Level 3 (Critical):** In the [REDACTED] page, the very last element in the tab order that is read by the screen reader as “[REDACTED] dialog” is read as a dialog even though there is nothing there. (See [2.4.6 Headings and Labels](#)).
- **Level 2 (Major):** There are three headings on the [REDACTED] page that read [REDACTED] (See [2.4.6 Headings and Labels](#))

Forms and Error Prevention

- **Level 4 (Blocker):** Because the error tooltips for form fields in the [REDACTED] form are not communicated to screen readers, screen reader users will not be able to know which form fields are in error (See [3.3.1 Error Identification](#)).
- **Level 4 (Blocker):** When clicking on the [REDACTED] text box a separate window is loaded with form fields that have labels and instructions which do not communicate anything meaningful to the average users (e.g., “Enter String” or “The Data Object “allcontactslookupa” requires parameters to be specified.”) (See [3.3.2 Labels or Instructions](#)).
- **Level 4 (Blocker):** There are no labels or instructions explaining the purpose of the [REDACTED] field below forms, making it unclear to users who will see these comments

(e.g., the form owner or other users of the system), or whether the comments are associated with the [REDACTED] or the form itself (See [3.3.2 Labels or Instructions](#)).

- **Level 4 (Blocker):** The [REDACTED] and [REDACTED] form fields do not have a label which is communicated to assistive technology (<label> tags should be associated with form fields using the “for” attribute). This would make it extremely difficult for screen reader users to [REDACTED] (See [3.3.2 Labels or Instructions](#)).
- **Level 4 (Blocker):** Each option in dropdown menus is read as if it were the first option (See [3.3.2 Labels or Instructions](#)).
- **Level 4 (Blocker):** The separate window that is opened when the [REDACTED] field is clicked can only be opened by keyboard alone if the user presses the down arrow while the field has keyboard focus. However, this is not standard functionality and instructions are only provided screen reader users, meaning that keyboard only users would not know how to open this window to change the value of the [REDACTED] field (See [3.3.2 Labels or Instructions](#)).
- **Level 4 (Blocker):** The error tooltips for form fields in the [REDACTED] form are not keyboard accessible and are not communicated to screen readers, making it impossible for keyboard only users, screen reader users, and likely touch screen devices users to read the suggestions for correcting errors (See [3.3.3 Error Suggestion](#)).
- **Level 4 (Blocker):** The [REDACTED] tooltip in the [REDACTED] form only states “The value in this field is invalid” and does not provide suggestions for correcting the error (See [3.3.3 Error Suggestion](#)).
- **Level 3 (Critical):** Because the [REDACTED] button for forms precedes the form itself users may have difficulty understanding its purpose or identifying how to submit a form (See [3.3.2 Labels or Instructions](#)).
- **Level 3 (Critical):** When typing in the [REDACTED] search field and quick search results are available, the screen reader announces “[.] results are available. Use up or down arrows to navigate”, however, with a screen reader on, these commands do not work (See [3.3.2 Labels or Instructions](#)).
- **Level 3 (Critical):** The error messages for the [REDACTED] page do not identify which fields is in error or provide suggestions for users to fix the error (See [3.3.1 Error Identification](#) and [3.3.3 Error Suggestion](#)).

Keyboard Support

- **Level 4 (Blocker):** Because the [REDACTED] popups the [REDACTED] cannot be operated by keyboard, keyboard only and screen reader users will have no way to see the status of [REDACTED] (See [2.1.1 Keyboard](#)).
- **Level 3 (Critical):** Default focus indicators in Firefox and chrome are not highly visible for many elements across the application, such as the left navigation elements and the [REDACTED] button on the [REDACTED] page (See [2.4.7 Focus Visible](#)).
- **Level 3 (Critical):** Likely because of improper use of `tabindex="-1"` on many elements, many inactive elements can be reached when tabbing through interactive elements with the screen reader on (See [2.4.3 Focus Order](#)).
- **Level 2 (Major):** The tooltips for the [REDACTED] cannot be displayed with keyboard alone and are not read by screen readers (See [2.1.1 Keyboard](#)).
- **Level 2 (Major):** Radio buttons on forms do not have a visible focus indicator (See [2.4.7 Focus Visible](#)).
- **Level 1 (Minor):** Hidden form fields follow the main header and the [REDACTED] button in the focus order on the sign in page (See [2.4.3 Focus Order](#)).

- **Level 1 (Minor):** Because the [REDACTED] button for forms precedes the form itself, keyboard users must back tab through all form fields once they have completed the form to submit (See [2.4.3 Focus Order](#)).

Navigation

- **Level 2 (Major):** some form fields in error are identified with a red outline, and other are not (See [3.2.4 Consistent Identification](#)).
- **Level 1 (Minor):** The text alternative to the [REDACTED] image link which returns the user to the [REDACTED] page reads [REDACTED] rather than [REDACTED] (See [2.4.4 Link Purpose \(In Context\)](#)).
- **Level 1 (Minor):** Because the [REDACTED] button for forms is positioned in a similar way to the [REDACTED] button (i.e., to the right of an [REDACTED] heading near the top of the main content of the page) users may select the [REDACTED] button by mistake, believing it will navigate them to the [REDACTED] section of the website (See [3.2.4 Consistent Identification](#)).
- **Level 1 (Minor):** The [REDACTED] text box is coded and visually styled as a text box, but cannot be edited like a textbox (See [3.2.4 Consistent Identification](#)).

User Control and Freedom

- **Level 4 (Blocker):** When the [REDACTED] radio button is selected while moving through [REDACTED] on the [REDACTED] page, focus is shifted away from the [REDACTED] radio button, meaning that the request [REDACTED] option cannot be selected and it is not possible to request [REDACTED] with a keyboard alone or with a screen reader (See [3.2.2 On Input](#) and [2.1.1 Keyboard](#)).
- **Level 2 (Major):** It is not made clear to screen reader users that selecting a tree item in the [REDACTED] tree on the [REDACTED] page will change the main content of the page (See [3.2.2 On Input](#)).

Severity Scale Explanation

Level	Severity	Explanation
4	Blocker	Prevents access to core processes or many secondary processes; causes harm
3	Critical	Prevents access to some secondary process; makes it difficult to access core processes or many secondary processes; causes significant discomfort
2	Major	Makes it inconvenient to access core processes or many secondary processes
1	Minor	Makes it inconvenient to access isolated processes
0	Lesser	Minor usability problem; usability observation