



**A Primer on Microsoft Word & Portable Document Format (PDF)**  
**Document Accessibility**

Erin J. Farley  
Research Consultant  
Choice Research Associates  
June 2021

This product was made possible by a subgrant from the National Crime Victim Law Institute (NCVLI) pursuant to award number 2018-V3-GX-K018, awarded to NCVLI by the Office for Victims of Crime (OVC), Office of Justice Programs, U.S. Department of Justice. The opinions, findings, conclusions or recommendations expressed in this document are those of the author(s) and do not necessarily represent the official position or policies of the U.S. Department of Justice or NCVLI.

**Table of Contents**

Introduction..... 1  
 Detecting Accessibility Issues in Microsoft Word..... 2  
     Example 1: Missing Alternative Text..... 4  
     Example 2: Tables with No Header Row Specified ..... 6  
     Example 3: Repeated Blank Space ..... 8  
     Example 4: Headings and Logical Reading Structure ..... 9  
 Saving Document as PDF ..... 10  
 For Users with Adobe Acrobat Pro DC ..... 11  
     Accessibility Components ..... 13  
 Features for Resolving Accessibility Issues..... 18  
 Additional Resources..... 19

**Table of Figures**

Figure 1. Check for Accessibility Issues ..... 2  
 Figure 2. Accessibility Checker Inspection Results..... 4  
 Figure 3. Format Picture – Alt Text..... 5  
 Figure 4. Table Example Presenting Individual Contact Information ..... 6  
 Figure 5. Table Tools and Design ..... 6  
 Figure 6. Confirm Checked Box Next to Header Row..... 7  
 Figure 7. Check Box Repeat as Header Row at Top of Each Page ..... 7  
 Figure 8. Alternative Text for Table ..... 8  
 Figure 9. Example of Repeated Blank Space ..... 9  
 Figure 10. Example of a Heading..... 9  
 Figure 11. Save as PDF ..... 10  
 Figure 12. Document Structure Tags for Accessibility ..... 11  
 Figure 13. Save as Adobe PDF ..... 12  
 Figure 14. Create from File ..... 13  
 Figure 15. Adobe Acrobat Pro DC Tool Selection ..... 14  
 Figure 16. Adobe Accessibility Tools ..... 15  
 Figure 17. Accessibility Checker Options ..... 16  
 Figure 18. Accessibility Check Issues..... 17

## Introduction

This document is intended to provide guidance on how to identify accessibility issues found in Microsoft Word and Portable Document Format (PDF) documents. This guide is for Personal Computer (PC) users, however links to helpful information and resources for Macintosh (MAC) users is provided at the end of the document.

First, it is recommended that, when possible, a user should address accessibility issues *before* transforming a document into a PDF. This approach is beneficial to all users, but it is particularly helpful for those who not have Adobe Acrobat Pro and the accessibility tools available through this software. With this in mind, this guide will provide instructions on how to identify accessibility issues in Microsoft Word (2016 version), a commonly used application that is used to create PDFs, as well as in Adobe Acrobat Pro DC (2020 version). This document also provides examples on how to address accessibility issues in Microsoft Word, as well as additional resources for users interested in learning more.<sup>1</sup>

There are a number of ways in which a user can transform a source document (e.g., Microsoft word) into a PDF however, not all methods transfer accessibility features equally. As a result, the method selected will impact the amount of accessibility features which are successfully transferred.<sup>2</sup> The best option is to use Adobe Acrobat software. PDFs were originally created by Adobe Acrobat and as a result Adobe Acrobat is one of the best tools to use when transforming a source document (e.g., Microsoft Word) with accessibility features into a PDF. However, Adobe Acrobat Pro requires a monthly subscription and users may not have access to this software. If a user does not have access to Adobe Acrobat Pro other methods can be utilized which have been shown to keep most accessibility features through the transformation process. For example, if the source document is in Microsoft Word the user can save the document as a PDF, transferring many of the accessibility features. While the user can be assured that most accessibility features established in Microsoft Word will be transferred to the PDF, the only way to confirm and detect remaining issues would be to run an additional accessibility check on the document. Free accessibility checkers are available, however no one particular free resource is recommended. Most importantly, there is no guarantee that these free accessibility tools are able to identify all remaining accessibility issues. In fact, no matter what checker tool is used (free or paid), there are some issues that will always require manual review and correction. One method that can be used to create a PDF document that is discouraged is the use of the Print option. When printing a document, there is an option to print as PDF

---

<sup>1</sup> Both software applications provide accessibility tools that help users meet the accessibility standards of Section 508 of the Rehabilitation Act and the Web Content Accessibility Guidelines (WCAG) 2.0 Level AA. WCAG standards and Section 508 were developed to address the accessibility needs for a range of users including the blind, D/deaf, hard of hearing, those with low vision, limited movement, speech disabilities, photosensitivity, select learning disabilities and cognitive limitations.

<sup>2</sup> For example, different sections of a document should have different tags depending on the content. Tags identify either content is a heading, subheading, paragraph, list, table, figure etc. These tags also need to be in the correct order to be read properly by assistive technology (e.g., screen reader). Depending on what method of transformation is used, some or most of this information may be lost.

(Microsoft Print to PDF). This method is discouraged because it often results in the loss of structure tags or other information needed for accessibility.<sup>3</sup>

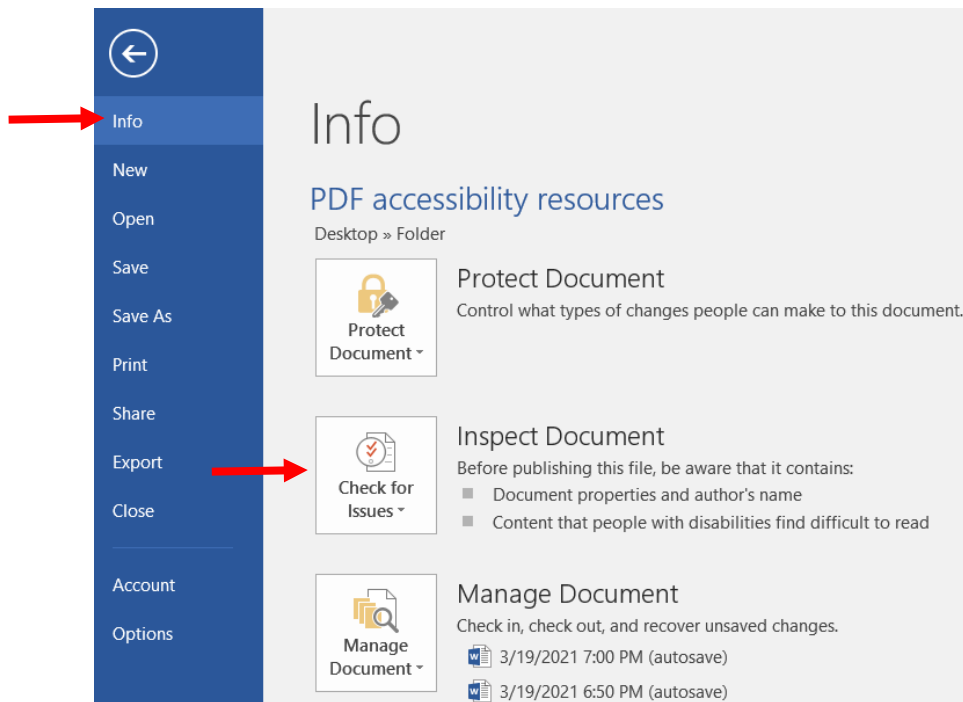
The following section describes how to check for accessibility issues in Microsoft Word, presents four common examples of accessibility issues, and ways to address them.

## Detecting Accessibility Issues in Microsoft Word

Once a document is finalized, a user should run the **Microsoft Accessibility Checker**. While the Microsoft Accessibility checker won't detect all problems (again, some issues require manual review), it does identify many accessibility issues and provides information on why certain issues create accessibility barriers and how to address them. Using the Microsoft Accessibility Checker is a useful resource in ensuring many accessibility issues have been addressed before saving as a PDF and is recommended for all users, including those with Adobe Acrobat Pro.

In order to run the Microsoft Accessibility Check, the user must first go to **File, Info, Check for Issues/Inspect document** (See Figure 1) and then select **Check Accessibility** (not pictured).

Figure 1. Check for Accessibility Issues



A dialog box titled **Accessibility Checker: Inspection Results** will appear on the right side of the screen. Accessibility issues in need of attention will be listed under **Errors, Warnings, and Tips** (See Figure 2 for an example of accessibility inspection results). **Errors** are the most serious issue

<sup>3</sup> Structure tags identify the structure and different components of a document.

and represents content that is difficult to read or understand for people with accessibility needs.

**Warnings** are less serious but do make the document harder to read. **Tips** represent content that can be understood but may be an issue and can be presented in a different way.

By clicking on the different errors, warnings, and tips, the user will be taken to the specific location of the accessibility issue in the document. The Inspection Results dialog box also provides additional information addressing accessibility issues and are labeled **Why Fix** and **How To Fix** (See Figure 2). In addition, at the very bottom of the Inspection Results dialog box users will find a link to an additional resource labeled **Read more about making documents accessible**.

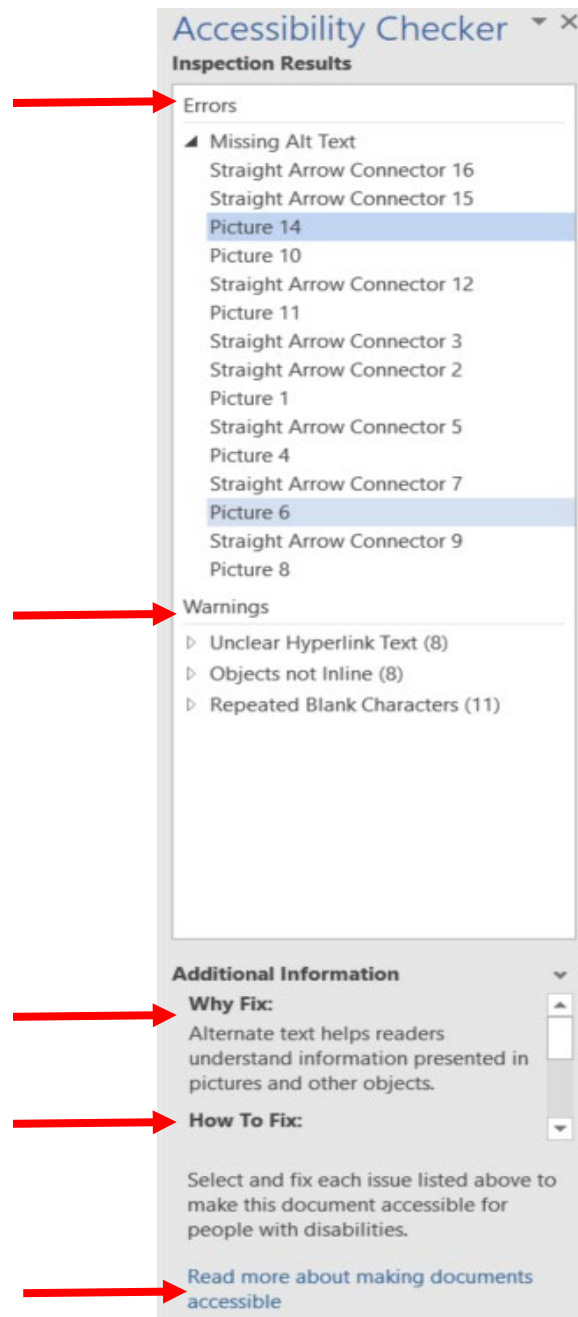
Warnings, errors, and tips will vary based on the document content. The Microsoft Accessibility checker detects and provides guidance on how to fix a range of issues related to formatting (e.g., headings), alternative text for images, table structure, columns, lists, legible text size, adequate contrast and more.<sup>4</sup>

The following section provides four examples of common accessibility issues and a brief description of how address them. Links to additional information is provided at the end of the document under Additional Resources.

---

<sup>4</sup> For a list of errors, warnings and tips go to: <https://support.microsoft.com/en-us/topic/rules-for-the-accessibility-checker-651e08f2-0fc3-4e10-aaca-74b4a67101e1>

Figure 2. Accessibility Checker Inspection Results



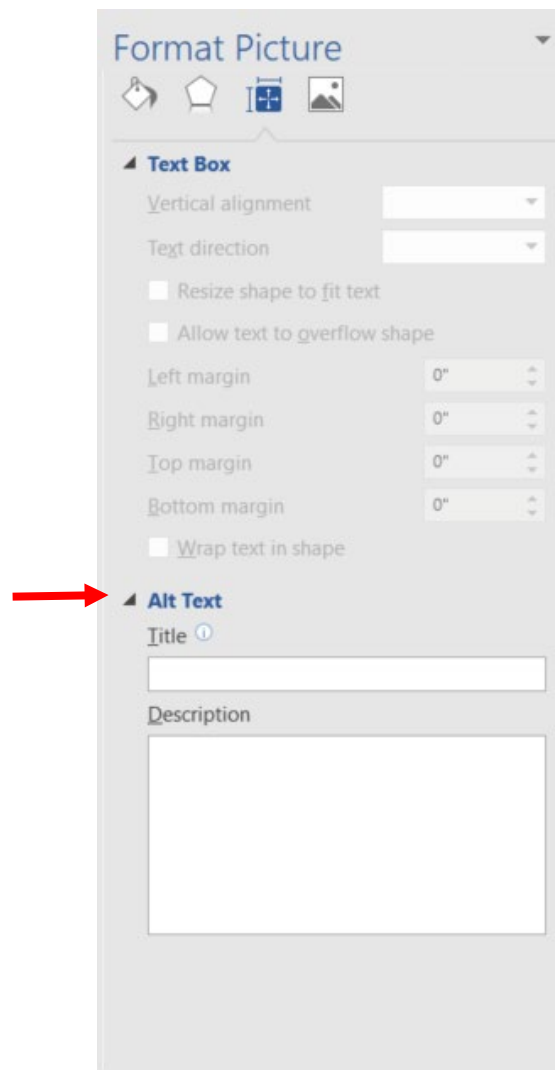
### Example 1: Missing Alternative Text

When a document includes pictures, tables, figures, or other images alternative text must be included in order for the images to be accessible by assistive technologies like screen readers. Alternative text entails providing a brief description of the image. If alternative text has not been added, an accessibility checker will report an error of **Missing Alt(ernative) Text**. One way to resolve this issue is to locate and select the image in the document and click the right button on the mouse (right click). From the listed options, the user should go to **Format Picture**, then **Layout and**

**Properties.** A box will appear and about halfway down the dialogue box the user will find the **Alt Text** heading and below that a space to add a **Title** and **Description** (see Figure 3). Adding a title and accurate description of the image will resolve the accessibility error for that image. In the instance that a document already has alternative text, it is beneficial to review the alternative text to confirm it accurately describes the image. The accessibility checker can only detect if information is provided or not, it cannot confirm if the information is accurate or appropriate. This must be done manually.

Another area that often needs manual checking is **color contrast**. Text should have a contrast ratio of at least 4.5:1 except for large text (contrast ratio should be 3:1), incident text or images (purely decoration) or logotypes (text that is part of a logo or brand name). Resources for assessing color contrast are provided in the Additional Resources section. Users must be able to identify the specific RGB color code of text in order test contrast.

Figure 3. Format Picture – Alt Text



## Example 2: Tables with No Header Row Specified

It is recommended that tables be as simple as possible (avoid merging, splitting or nesting cells) and to avoid using tables for formatting content or layout purposes. Once a table is inserted in the document), the user needs to specify the header row. This specification allows assistive technology like a screen reader to identify the content and the location of the cursor.

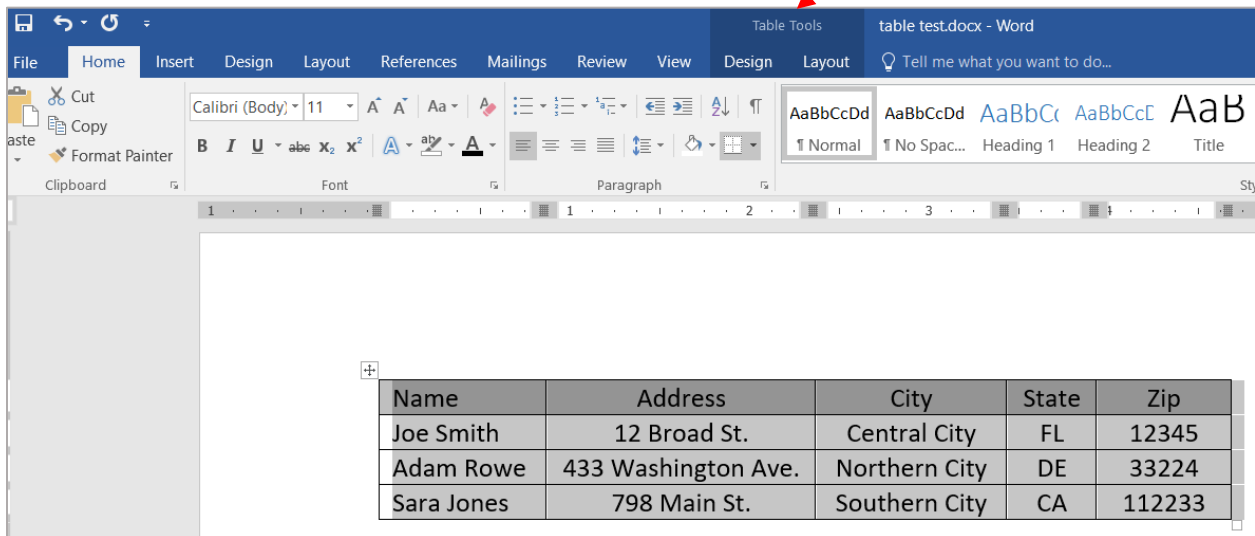
For example, Figure 4 presents a simple table presenting contact information for three individuals. In order to make this table accessible, the user must confirm the header row is identified and this can be done with the table tools feature.

*Figure 4. Table Example Presenting Individual Contact Information*

Name	Address	City	State	Zip
Joe Smith	12 Broad St.	Central City	FL	12345
Adam Rowe	433 Washington Ave.	Northern City	DE	33224
Sara Jones	798 Main St.	Southern City	CA	112233

In order to check the table features, the user should select the table and click on the **Design** under **Table Tools** in the menu bar at the top of the page (see Figure 5).

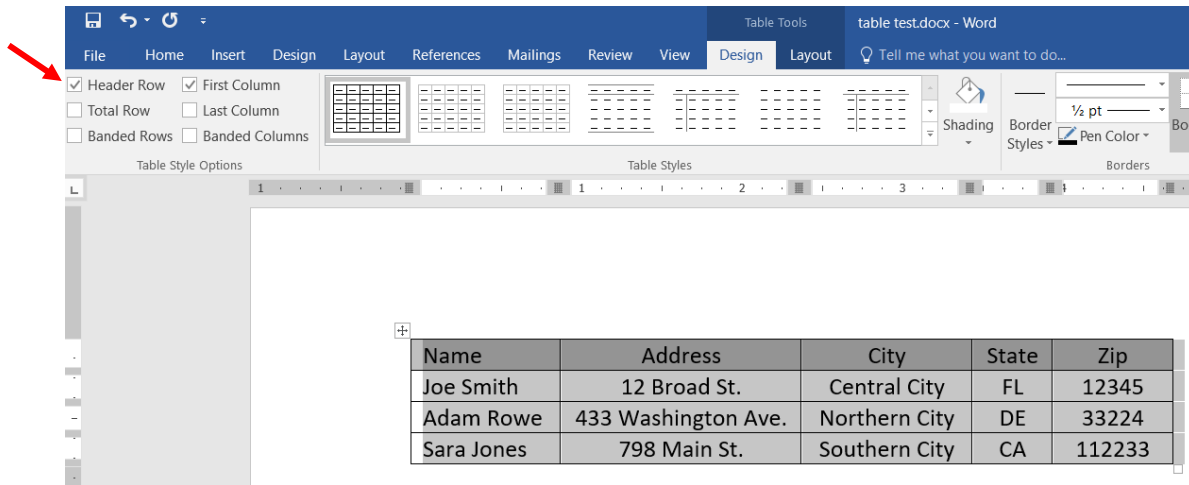
*Figure 5. Table Tools and Design*



Once in Design tools, the user can select which columns and rows they want to have formatted (See Figure 6). Make sure that there is a check in the box labeled **Header Row** within the Design tools menu.

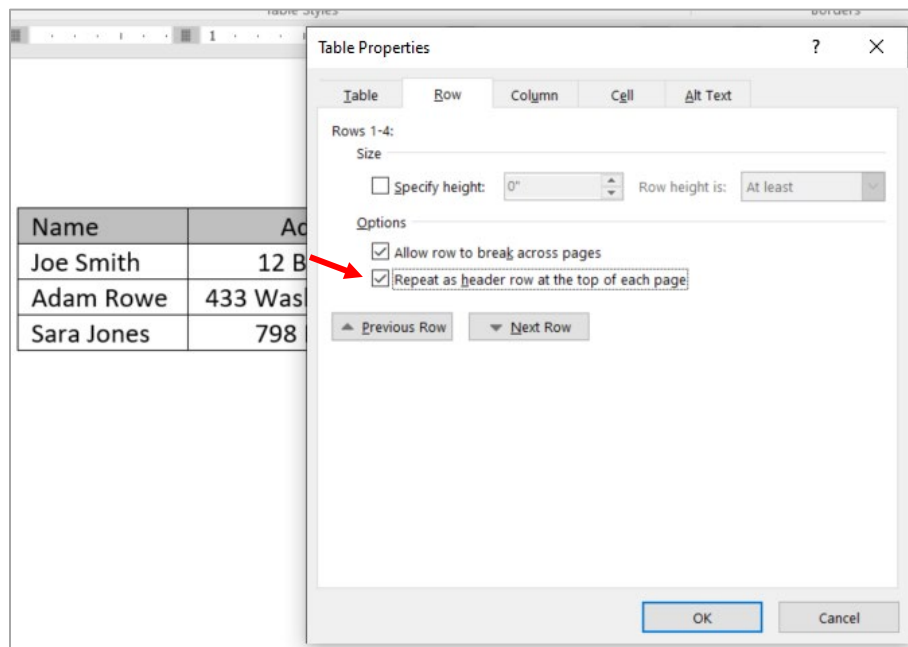


Figure 6. Confirm Checked Box Next to Header Row



Another important step is to enable the header row across pages. In order to do this the user should go to **Table Properties** (right click on mouse to pull up options) and make sure to check the option **Repeat as header row at top of each page** (see Figure 7). This indicates the header and allows the header to repeat if the table stretches across multiple pages.

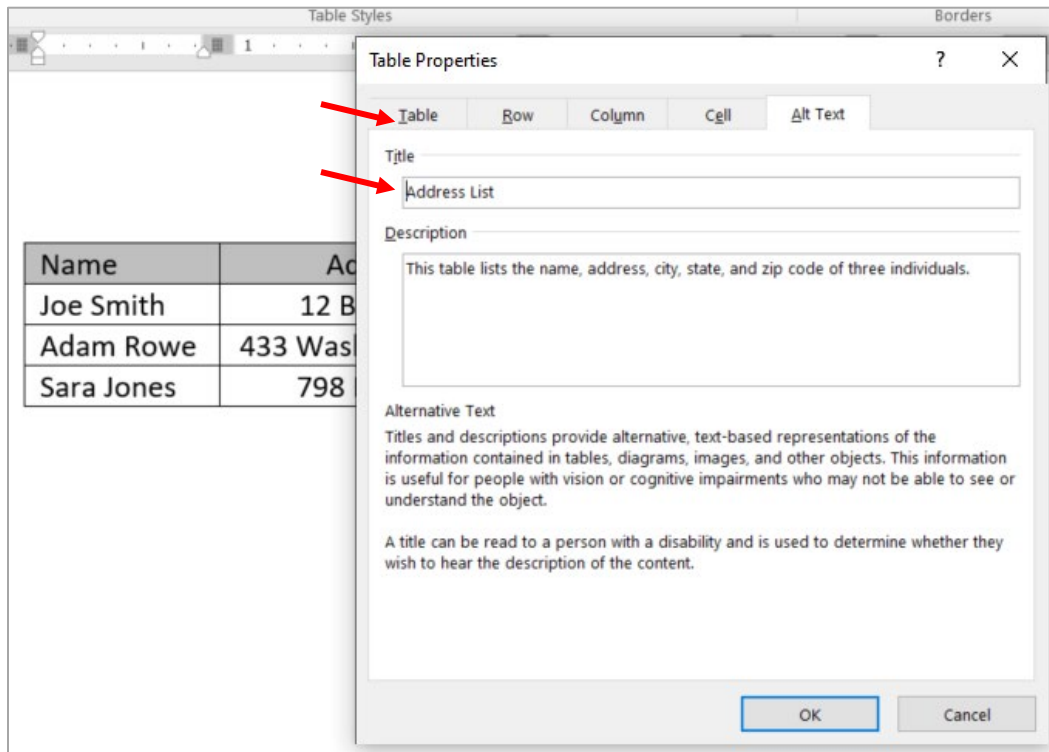
Figure 7. Check Box Repeat as Header Row at Top of Each Page



Finally, this table needs alternative text. In order to add alternative text, select **Table Properties**, and a dialog box will open. From the dialog box options, select **Alt Text** tab and insert a title

and description (See Figure 8). The level of detail of the description will depend on the information being presented in the table.

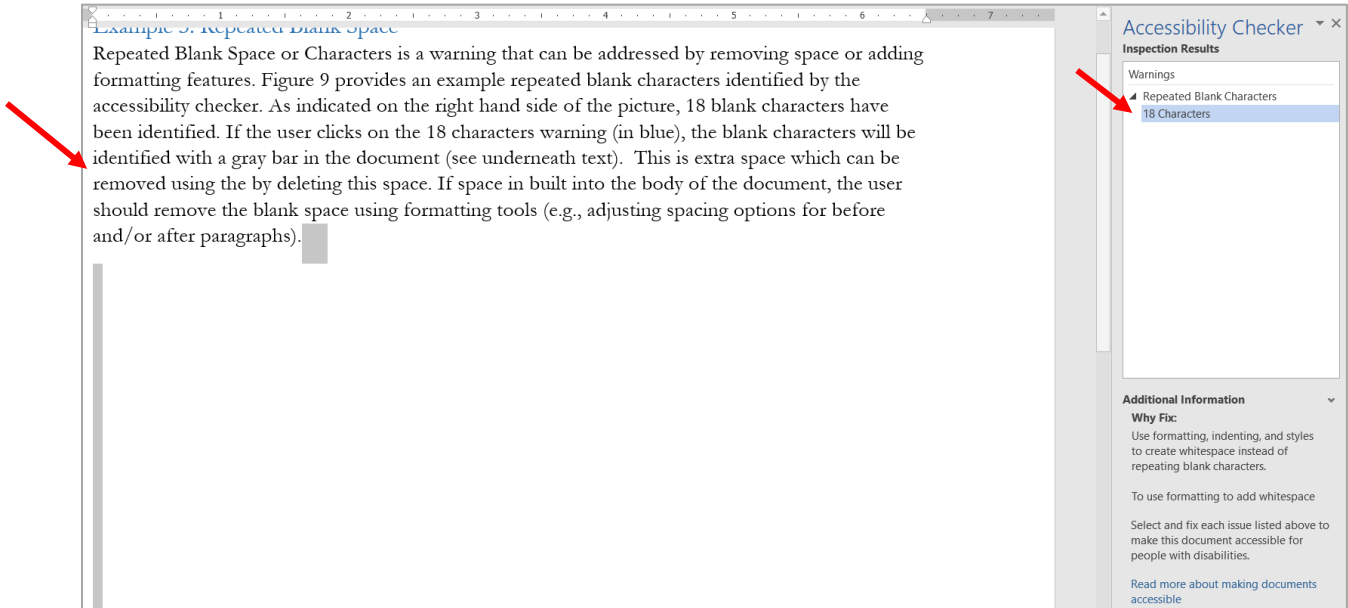
*Figure 8. Alternative Text for Table*



### Example 3: Repeated Blank Space

**Repeated Blank Space or Characters** is a warning that can be addressed by removing space or adding formatting features. Figure 9 provides an example repeated blank characters identified by the accessibility checker. As indicated on the right-hand side of the picture, 18 blank characters have been identified. If the user clicks on the 18 characters warning (in blue), the blank characters will be identified with a gray bar in the document (see underneath text). This is extra space which can be removed using the by deleting this space. If space is built into the body of the document, the user should remove the blank space using formatting tools (e.g., adjusting spacing options for before and/or after paragraphs).

Figure 9. Example of Repeated Blank Space

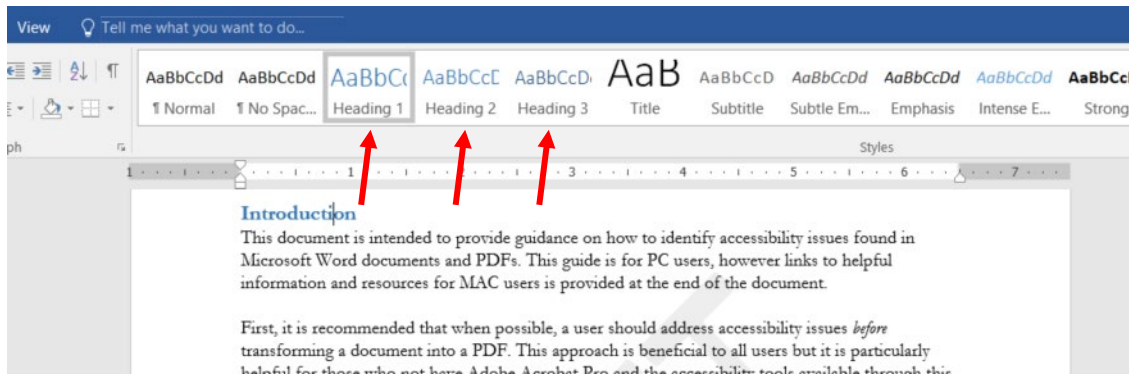


**Example 4: Headings and Logical Reading Structure**

**Headings** are an important part of navigating a document and indicates to assistive technology, such as screen readers, the structure of the content. Main headings can be identified as Heading 1, and subheadings identified as Heading 2, and Heading 3 (See Figure 10). Heading levels should not be skipped. For example, Heading 2 should follow after Heading 1 and not before.

Figure 10 shows an excerpt of the first page of this document with the heading “Introduction.” In order to identify the word Introduction as a heading, the user should highlight the word (or phrase) and when in **Home** tab, the user can select **Heading 1**. The user can also select **Heading 2** or **Heading 3** if the word or phrase represents a subheading. This option can also be selected by clicking on the **References** tab, then clicking on **Add Text** and selecting from **Level 1**, **Level 2**, or **Level 3** (not pictured). The style and size of the font may change when identifying words or phrases as heading but these changes can be adjusted from the Home tab (font type, size, color etc.).

Figure 10. Example of a Heading

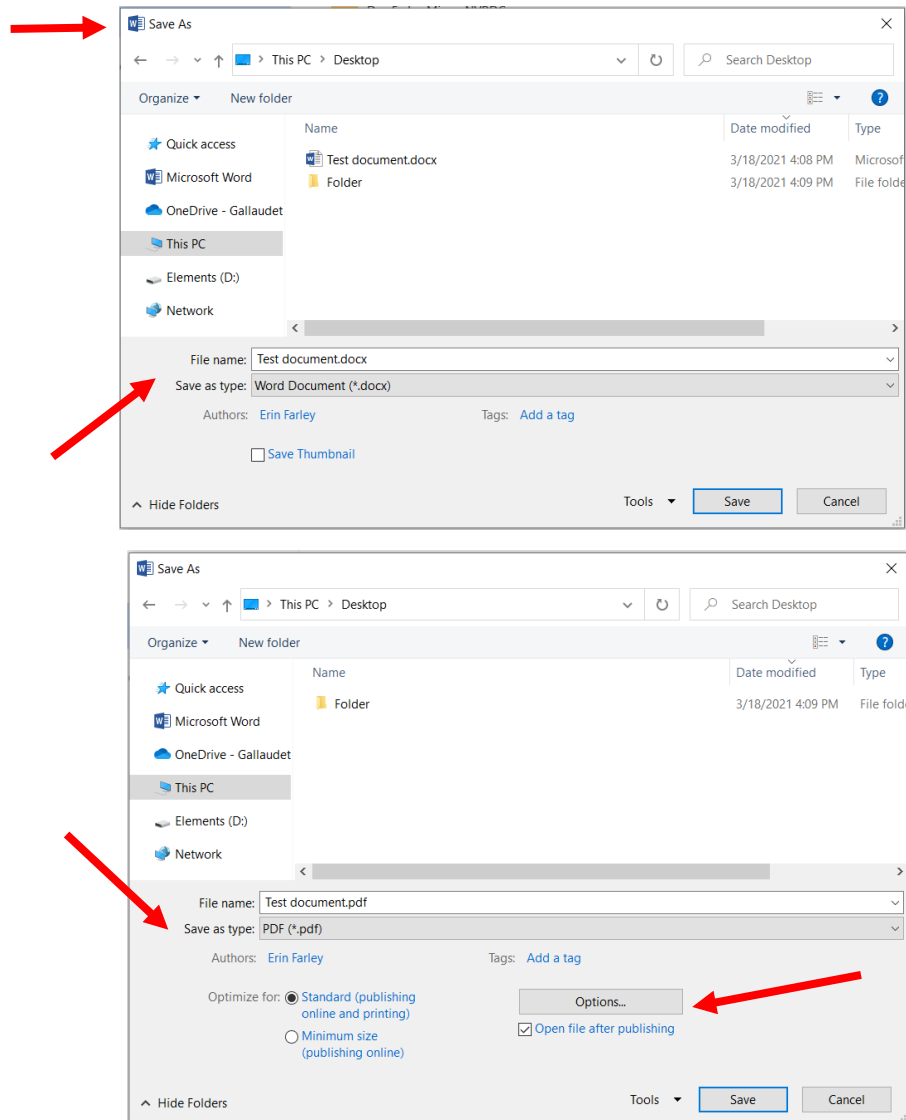


## Saving Document as PDF

The Microsoft Accessibility Checker is not able to identify all of the accessibility issues in a document (for a full list of Microsoft Accessibility rules see link in Additional Resources). For example, while the Accessibility Checker is able to detect some issues with color contrast, it is not able to detect issues where color *alone* is being used to convey information. As mentioned earlier, even if some images have text, it is important to review all descriptions and verify they are accurate. The Accessibility Checker cannot detect if the description of an image is accurate or not. Finally, the user will need to manually review heading structure, color contrast, formatted lists, descriptive link text, logical reading order and more. To learn more about manual review see links provided in the Additional Resources.

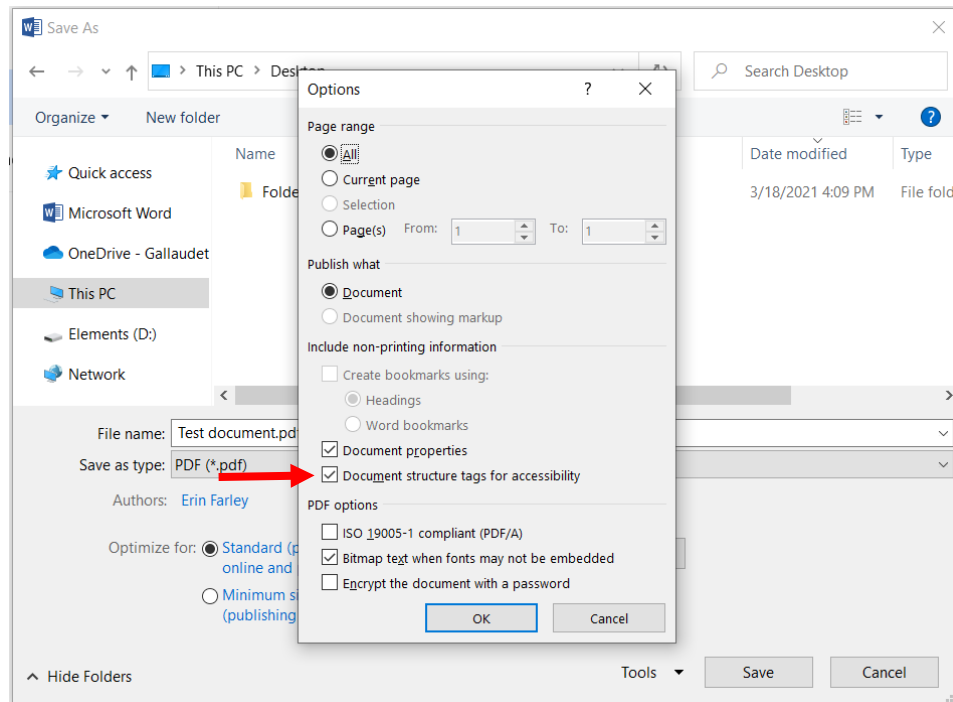
Once errors, warnings, and tips have been addressed, the user can go to **File, Save As**, and under **Save as type** change from Word Document (\*.docx) to PDF (\*.pdf).

Figure 11. Save as PDF



When the user changes Save as Type from Word to PDF an **Options** button will appear in the **Save As** dialog box (see Figure 11 above). The user should click on the **Options** button to be presented with an Options dialog box. Confirm the **Document structure tags for accessibility** is checked. This is the feature that will transfer structure tags into the PDF document (e.g., tags that identify header, subheading, paragraph, table, figure, lists etc.). After confirming this option is clicked, the user can click **OK** in **Options** box and then click **Save** in **Save As** box. Once these steps are completed a PDF will be created.

Figure 12. Document Structure Tags for Accessibility



When saving a Word document as a PDF many accessibility features will transfer, however, the process does not guarantee that *all* accessibility features will be transferred. Access to Adobe Acrobat Pro provides additional features for the user to identify remaining accessibility issues and guidance on how to address them. The following section summarizes the accessibility features in Adobe Acrobat Pro DC.

### For Users with Adobe Acrobat Pro DC

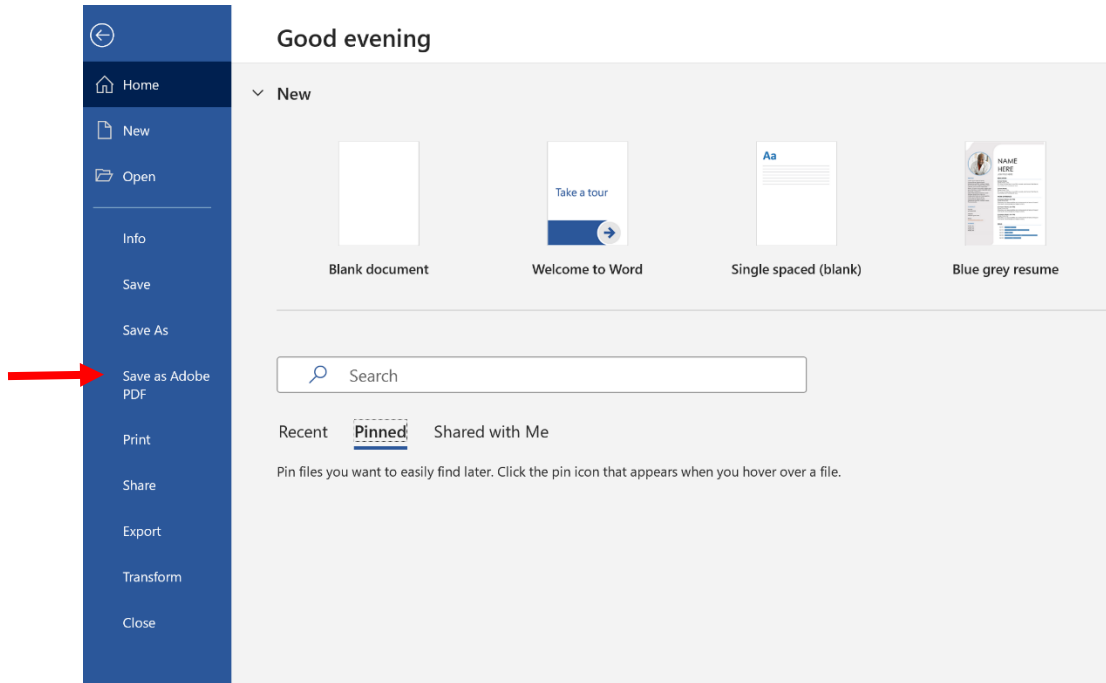
A user will be able to address many accessibility issues in Adobe Acrobat Pro however, as mentioned earlier, it is recommended to try to address as many of accessibility issues as possible in the original document source (e.g., Microsoft Word) *before* transforming into a PDF document. There are a number of reasons for this including that some accessibility issues are easier to address in the source document. In addition, if the PDF document ever needs to be recreated, the user will have the benefit of addressing accessibility issues in the source document. Any accessibility issues addressed in the PDF would have to be re-addressed in the new version of the PDF document.<sup>5</sup>

<sup>5</sup> With Adobe Acrobat Pro, there are features that allow the user to automatically fix accessibility issues. There are pros and cons to utilizing this feature depending on the content of the document. See Additional Resources for links to

Once the user has addressed all accessibility issues as possible in Microsoft Word there are two common ways a PDF can be created.

**Option one:** Open document in Microsoft Word, go to **File**, and select **Save as Adobe PDF** (See Figure 13).

*Figure 13. Save as Adobe PDF*

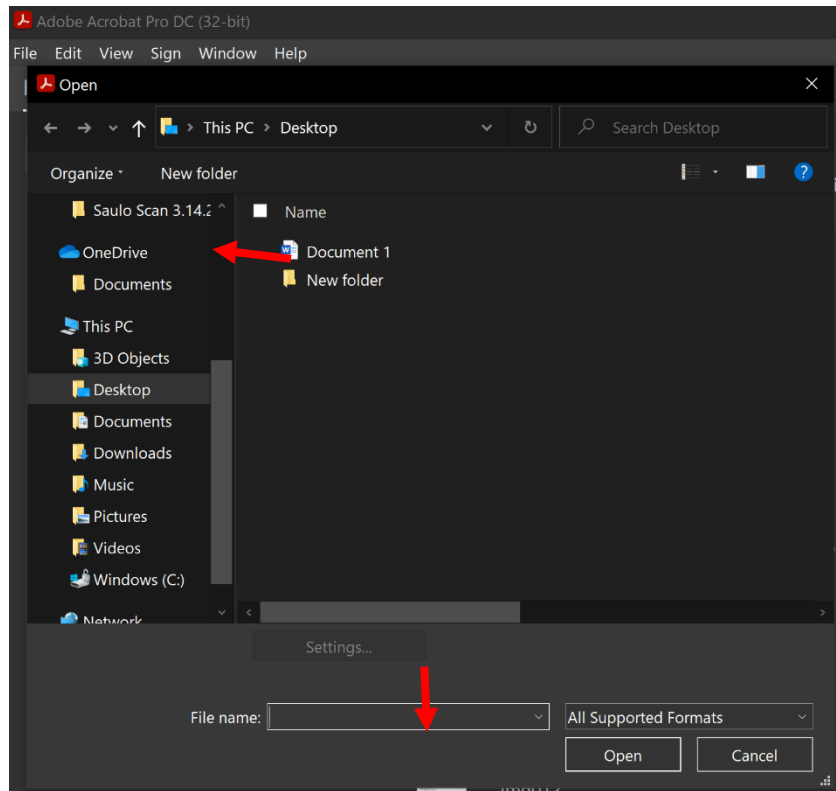


**Option two:** Open Adobe Acrobat Pro, go to **File**, then **Create, Create from File**, locate the source document in the correct folder on the computer and select **Open** (see Figure 14). There may be a brief wait as the document is being transformed into a PDF (cursor will turn into a small clock). Once the process is complete, the PDF document will automatically show up as a new tab.

---

accessibility features in Adobe Acrobat Pro. In addition, the ability to edit a PDF may depend on the security features associated with the document and may be limited to the author of the source document.

Figure 14. Create from File

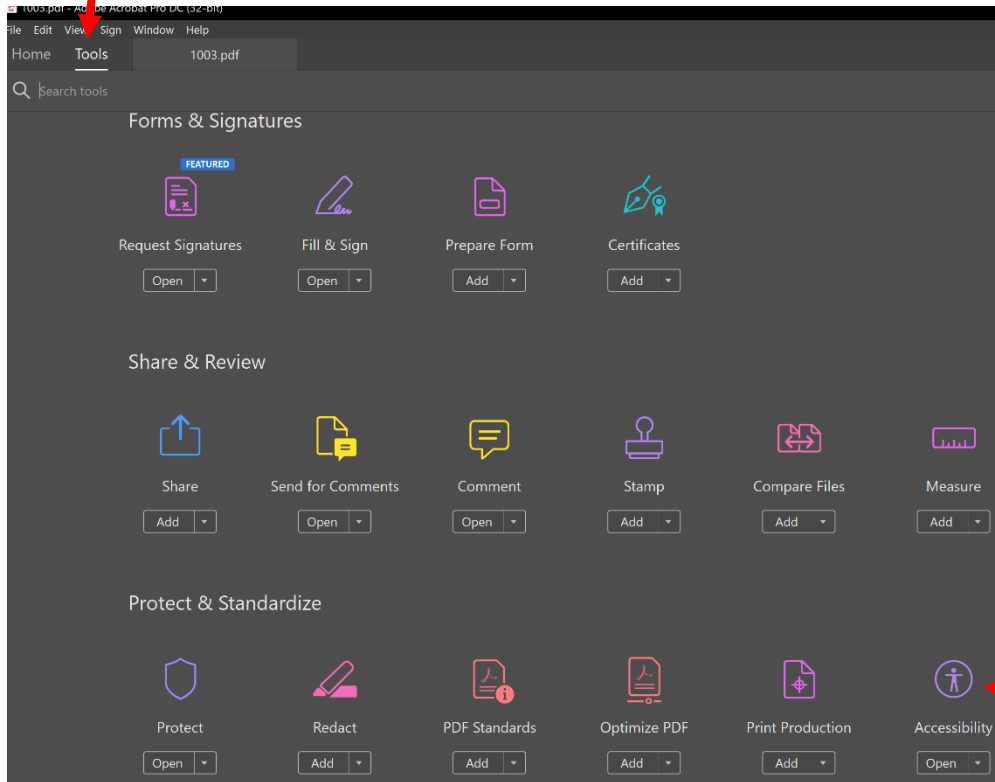


## Accessibility Components

An **Accessibility Tool** is available with Adobe Acrobat Pro DC and should be listed among the various tools on the right-hand side of the screen.

If the Accessibility Tool is not listed, click on the **Tools** tab, scroll down to the **Protect & Standardize** section, find **Accessibility** and click **Open** (see Figure 15).

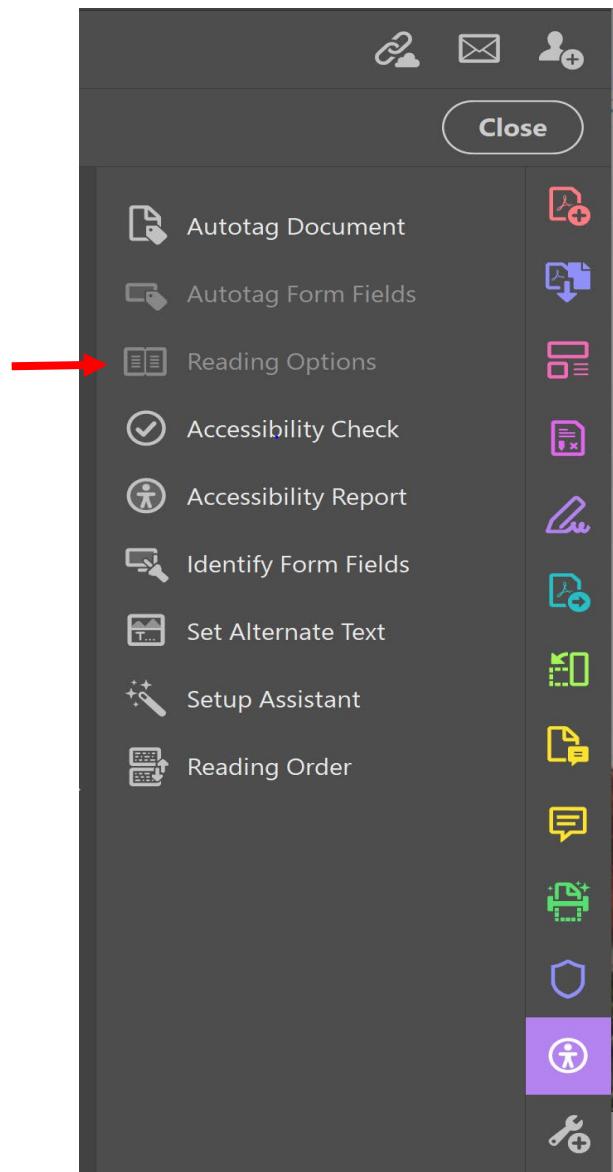
Figure 15. Adobe Acrobat Pro DC Tool Selection



Once Accessibility Tool is available open, return to the new PDF document. On the right side among the various tools, find and click on **Accessibility**. Once Accessibility is selected a list of features will be presented on the right-hand side to the screen (See Figure 16).



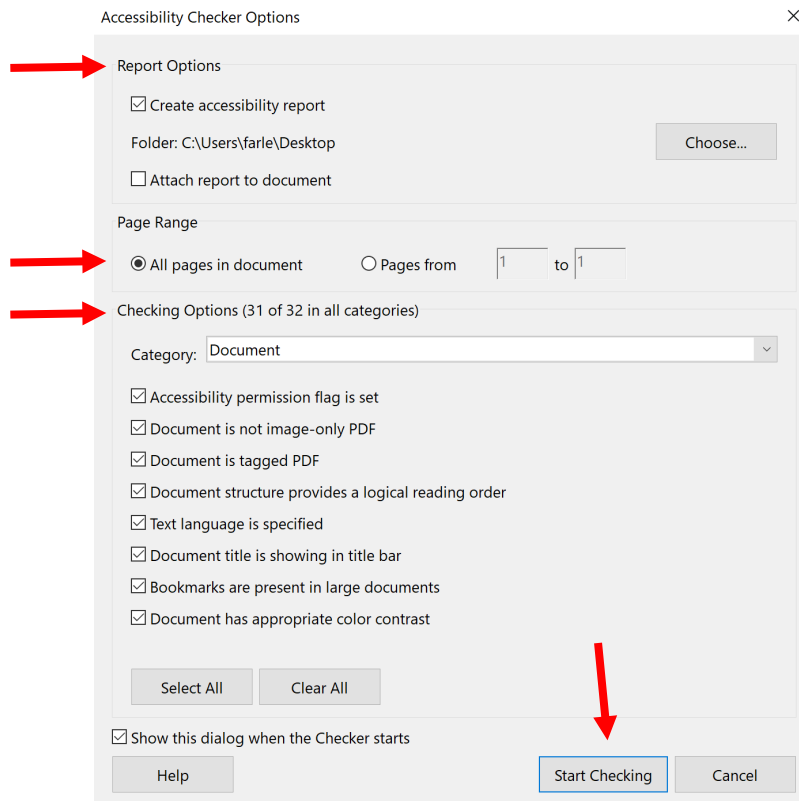
Figure 16. Adobe Accessibility Tools



Click on **Accessibility Check** and a box will appear with a range of Options (See Figure 17).<sup>6</sup> In general, the user will not need to change any of the automatic features. If desired, the user does have the option of running an accessibility check on a select number of pages instead of the full document (See: **page range**). Unless the user has a particular preference, all categories (8) should be checked. The user can begin the assessment by clicking on **Start Checking** (See Figure 17).

<sup>6</sup> Under Report Options, if “Create accessibility Report” is checked, will automatically create a web-based accessibility report and the user can designate which folder or location to save the report.

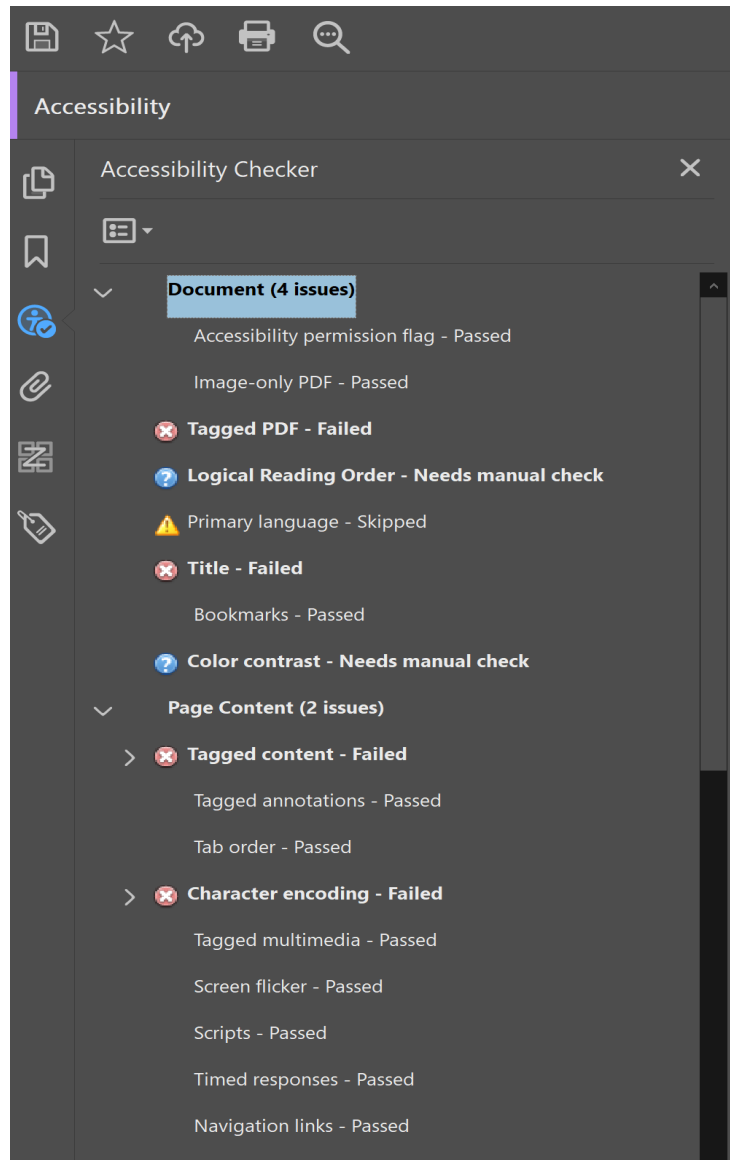
Figure 17. Accessibility Checker Options



The results of the **Accessibility Checker** will show up on the left-hand side of the screen and the list of accessibility issues fall into a range of areas including: Document, Page Content, Forms, Alternative Text, Tables, Lists, and Headings (See Figure 18).

The Accessibility Checker can guide the user through each of the issues and can provide five different types of notifications: **Passed** (item is accessible), **Passes Manually** (item was marked as passed by user based on manual inspection), **Skipped by User** (rule was not selected in the Options section by the user), **Needs Manual Check** (item needs to be manually inspected), and **Failed** (Item is not accessible).

Figure 18. Accessibility Check Issues



Below is a summary of accessibility standards. Please see links for more detailed information in Additional Resources.

### Document

- Document should include tags
  - Logical reading order: needs manual check after tags are added
- Missing title in title bar
- Color Contrast (readability): Needs manual check for 4.5:1 contrast ratio

### Page Content

- Page content and annotations should be tagged
- Tag order should be consistent with structure order (logical reading order)

**Alternative Text**

- Pictures, clip art, figures, tables, and graphics should include alternative text (or should be labeled as decorative so they will not be identified as content)
- Other issues regarding alternative text

**Tables**

- Tables should be identified properly and include headers and a summary

**Lists**

- Lists should be identified properly

**Headings**

- Headings should be nested properly (e.g., identified as main heading or subheading)

**Links**

- Should have an unambiguous name that describes the destination, function or purpose of the link

**Features for Resolving Accessibility Issues**

Adobe Acrobat Pro provides guidance on how to fix areas that have failed the accessibility checker review. First, the user can right click on any issue or item listed in the left-hand side of the screen under Accessibility Checker and a dialogue box will pop up. This will provide options to **Fix**, **Skip rule**, **Explain**, **Check Again**, **Show Report**, and **Options**.

**Fix:** Selecting Fix will present the user with the option for Adobe to automatically fix the issue or the user will be presented with a dialog box in order to fix the item manually. Once the issue is addressed, the item will be labeled Passed.

**Skip Rule:** Selecting Skip Rule will mean this item will not be reviewed for accessibility issues. Once selected the item will be labeled Skipped.

**Explain:** Selecting Explain will take you to an Acrobat Adobe Resources for addressing different PDF accessibility issues and will describe why different issues are considered accessibility barriers and provide guidance on how to resolve each issue. This resource (link provided in Additional Resources section) also includes links to WCAG web resources for each issue.

**Check Again:** Selecting Check Again re-runs the accessibility checker on all items.

**Show Report:** Selecting Show Report will present the report with links to tips on how to address failed items.

**Options:** Selecting Options opens the Accessibility Checker Options dialog. If needed, the user can review which checks were selected and performed.

Depending on the content of the document, some accessibility issues will be easier to address than others. As mentioned earlier, there are accessibility issues that require manual review and include verifying logical reading order, and color contrast between foreground and background. Links to color contrast checkers have been provided in the Additional Resources section. If users have the ability to open a PDF in a Chrome browser, they can add a Chrome Extension named ColorPick

Eye Dropper that can be used to identify specific color RGB codes. These codes can then be entered into the color contrast ratio to identify if they color contrast meets the 4.5:1 ratio.

One final note, while a user does not have to be an expert in order to address many accessibility issues, it is important to ensure that *all* accessibility issues are detected and successfully resolved. Depending on the complexity of the document, identification and resolution of accessibility issues may require consultation with an expert.

## **Additional Resources**

### **Microsoft Resources**

Improve accessibility with the Accessibility Checker: <https://support.microsoft.com/en-us/topic/improve-accessibility-with-the-accessibility-checker-a16f6de0-2f39-4a2b-8bd8-5ad801426c7f>

Rules for the Accessibility Checker: <https://support.microsoft.com/en-us/topic/rules-for-the-accessibility-checker-651e08f2-0fc3-4e10-aaca-74b4a67101c1>

Microsoft Word- Creating Accessible Documents (WebAIM): <https://webaim.org/techniques/word/>

Everything you need to know to write effective alt text: <https://support.microsoft.com/en-us/topic/everything-you-need-to-know-to-write-effective-alt-text-df98f884-ca3d-456c-807b-1a1fa82f5dc2>

### **Adobe Resources**

Adobe Accessibility Standards Overview: <https://www.adobe.com/accessibility/508standards.html>

Using the Acrobat Pro DC Accessibility Checker:

<https://helpx.adobe.com/acrobat/using/create-verify-pdf-accessibility.html>

<https://www.adobe.com/accessibility/products/acrobat/using-acrobat-pro-accessibility-checker.html>

Create and Verify PDF Accessibility (Acrobat Pro)

<https://helpx.adobe.com/acrobat/using/create-verify-pdf-accessibility.html>

### **W3C Resources**

PDF techniques for WCAG 2.0: <https://www.w3.org/TR/WCAG20-TECHS/pdf>

PDF Technology Notes: [https://www.w3.org/TR/WCAG20-TECHS/pdf\\_notes.html](https://www.w3.org/TR/WCAG20-TECHS/pdf_notes.html)

### **Section 508 Resources**

GSA Government-Wide IT Accessibility Program: <https://www.section508.gov/>

Modules on Creating Accessible PDFs: <https://www.section508.gov/create/pdfs>

**Color Contrast Checkers**

Web Accessibility in Mind: <https://webaim.org/resources/contrastchecker/>

Color Contrast Checker –Acart Communications: <https://contrastchecker.com/>

**For MAC users**

Creating Accessible Word and PDF Documents – MAC Users (Carleton University):  
<https://carleton.ca/edc/teachingresources/accessibility/creating-accessible-word-and-pdf-documents-mac-users/>

Understanding Document Accessibility-Microsoft Word for Mac 2011, 2016, and 2019 (Ryerson University, Pressbooks): <https://pressbooks.library.ryerson.ca/docs/chapter/microsoft-word-2011-mac/>