Office of the
Comptroller of the Currency

ATTACHMENT B

Crafting 508-Compliant Word and PDF Documents

ACCESSIBILITY BEST PRACTICES

GUIDE

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Purpose

All digital documents the OCC publishes must be accessible to people with disabilities. This publication is designed to help OCC employees create 508-compliant documents to post to OCC websites.

It is a companion to PPM 2100-1, “Editorial and Design Services,” and is meant to help OCC employees address the most common accessibility considerations when creating Microsoft Word documents that get turned into portable document format (PDF) files.

OCC employees are not expected to know or understand all technical aspects of making documents meet accessibility standards. Instead, they should focus on drafting and formatting documents in a way that makes them easier to convert into an accessible PDF.

Background

Section 508 of the Rehabilitation Act and its implementing regulation, 29 USC 794(d), require federal agencies to make their electronic and information technology accessible to people with disabilities. Under Section 508, agencies must give disabled employees and members of the public access to information comparable to the access available to others.

PPM 4130-1, “IT Accessibility (Section 508),” is the OCC’s implementing policy for that law. The purpose of creating 508-compliant web content is to give equal access to people who use assistive technology.

Web Content Accessibility Guidelines (WCAG) 2.1 Level AA standard is the generally accepted threshold federal agencies use. But the majority of employees have no need to acquaint themselves with these guidelines.

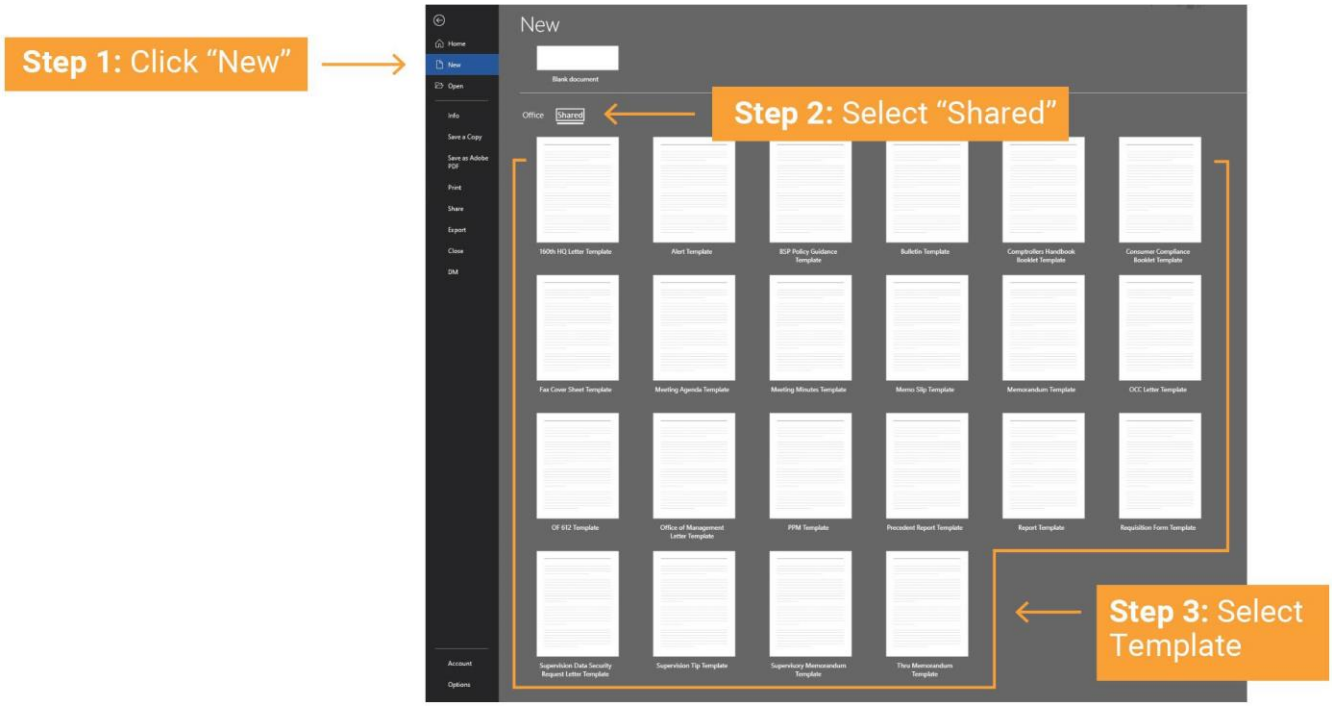
While the OCC publishes most documents as PDFs, creating a compliant Word document provides the foundation for a compliant PDF and ensures that future updates carry over previous accessibility settings.

Document Format

Using Microsoft Word templates and built-in features to format documents helps meet accessibility requirements. OCC's Editorial and Design Services unit has templates for documents used regularly, such as PPMs, bulletins, reports, memorandums, and booklets.

Format your document on these templates. They are set up with lists, tags, and labeled document headings that are necessary for 508 compliance. The labeled document headings ensure an organized reading order that is optimized for logical flow. Screen readers rely on headings to establish a clear and organized document structure. Incorrect headings may hinder access to content for people using assistive technology.

Figure 1: Accessing OCC Word Templates



Formatting Dos and Don’ts

DO

- Use built-in list styles for bulleted and numbered lists. Avoid manually creating lists with symbols.
- Apply built-in heading styles (Heading 1, Heading 2, etc.) for headings and subheadings instead of manually formatting them. Screen readers use these styles to create a logical structure.
- Use logical and consistent formatting for page layouts. Avoid complex or convoluted layouts that might confuse screen readers.
- Limit the use of fonts to improve readability. Stick to standard, accessible fonts.

DON’T

- Use Manual Formatting such as changing font size, color, or style directly. Use styles for consistent formatting.
- Include important information solely in images. If information is presented in an image, provide it in text as well.
- Insert blank rows or columns within tables as they can disrupt the table’s structure for screen readers.
- Use complex layouts with multiple columns, text boxes, and shapes can be challenging for users of assistive technologies.

Alternative Text

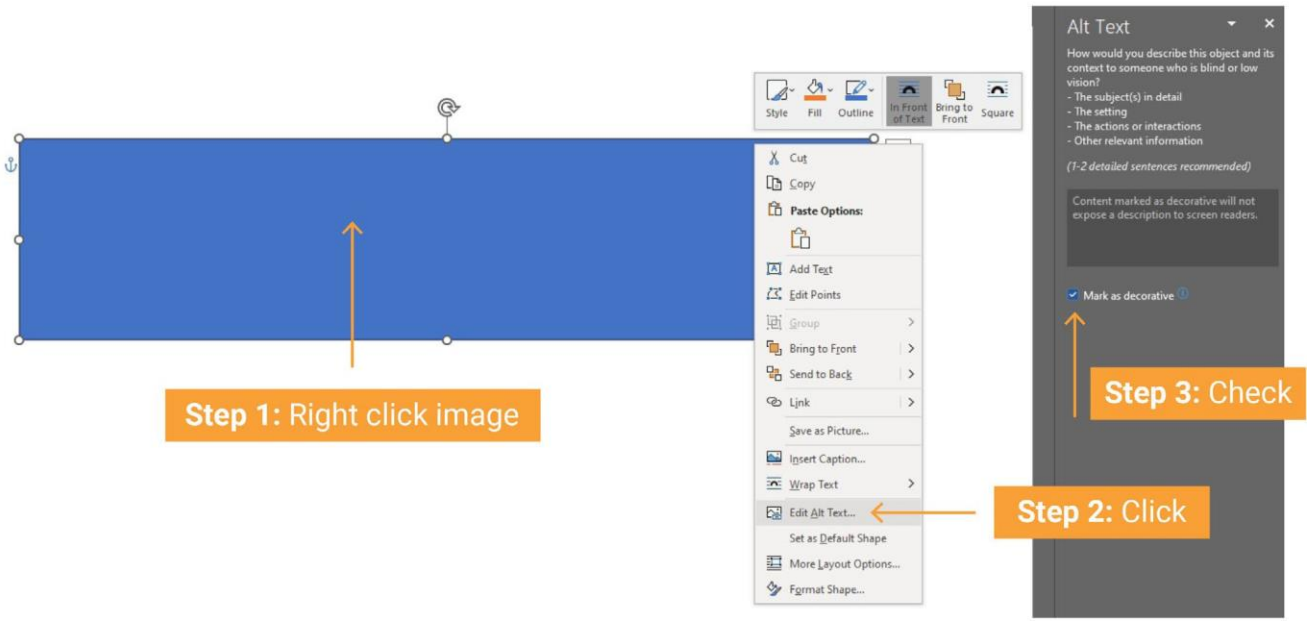
Assistive technology cannot infer meaning from images and other objects, such as pictures, charts, graphics, images of text, images of tables, shapes, and icons with hyperlinks. Alternative text or “alt text” ensures that readers using assistive technology can understand the images’ meaning.

If visuals are purely decorative—such as a border or line dividing content—and add visual interest but aren’t informative, authors can mark such images as decorative without having to add alt text. People who use screen readers will hear these objects are decorative, so they know they aren’t missing any important information.

How to Mark a Visual as Decorative

Right-click the visual. This pulls up a drop-down menu. Click “Edit Alt Text” and check “Mark as decorative” on the right. (See figure 2.)

Figure 2: Decorative Visuals

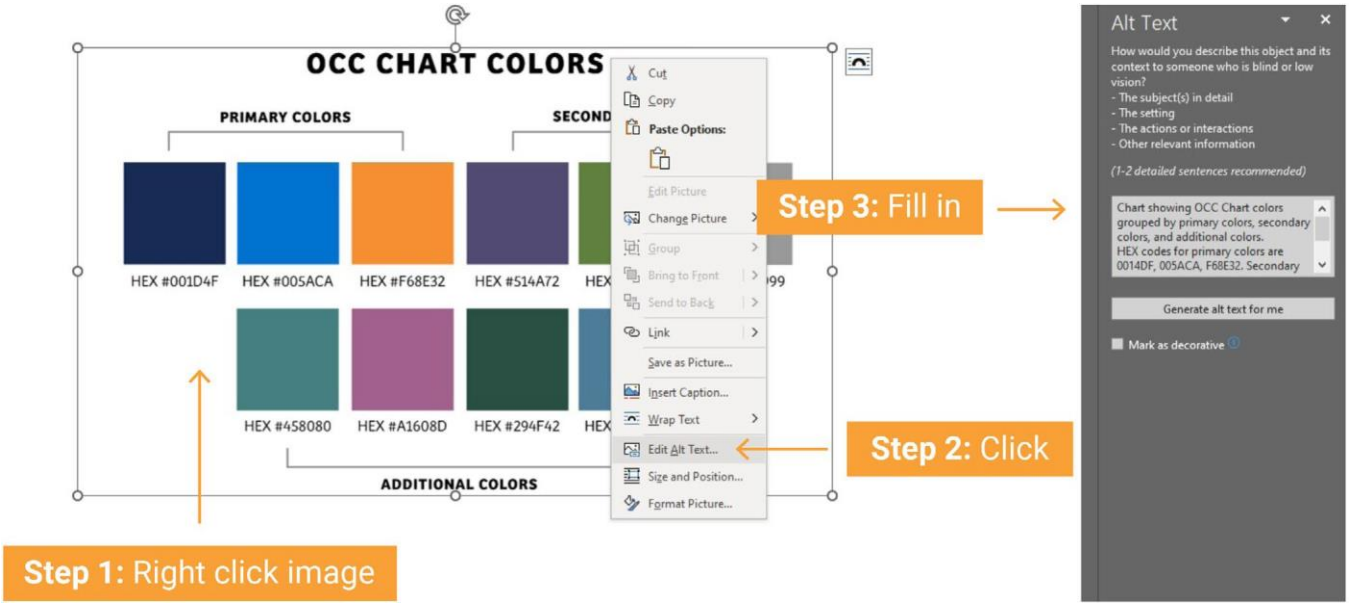


How to Add Alt Text to Images

Any tables, graphs, charts, graphics, images, or logos must have alt text.

Right-click the image. This pulls up a drop-down menu. Click “Edit Alt Text” and add the alt text in the box to the right. (See figure 3.)

Figure 3: Adding Alt Text



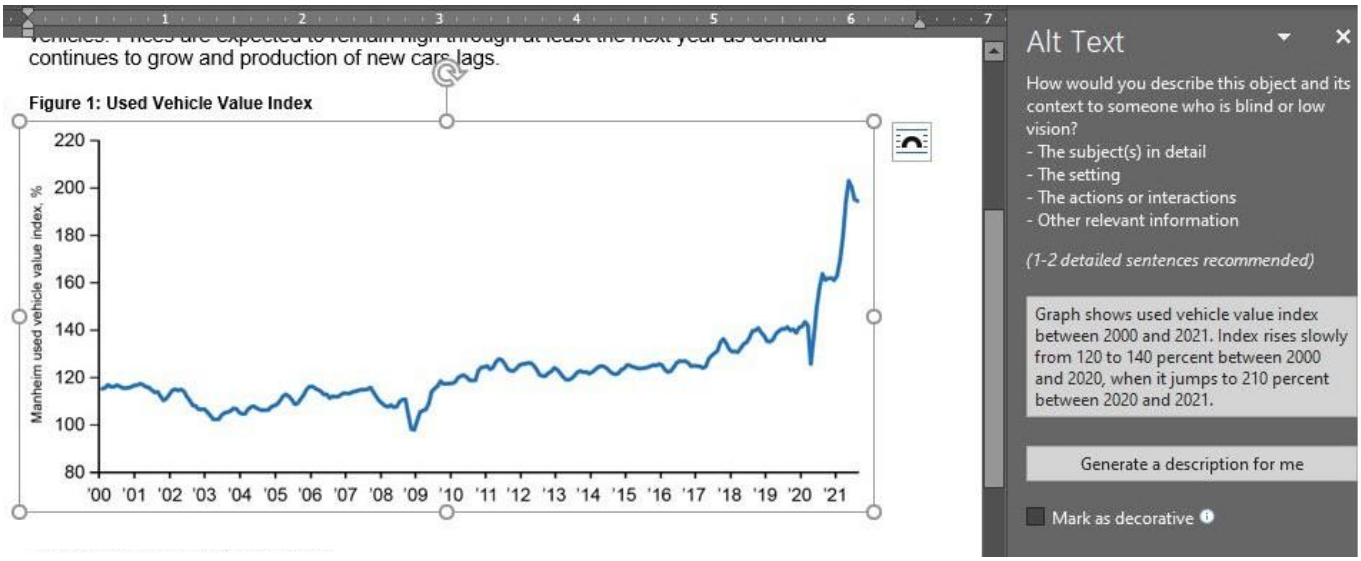
Alt Text Dos and Don’ts

DO

- Use short descriptions. The generally accepted length is 25–50 words for images, charts, and graphs.
- Add alt text to logos that accurately describes them. For logos such as the OCC signature, add “Office of the Comptroller of the Currency.”
- Aim for clarity. If images, charts, or graphs do not have a lengthy explanation in the body of the document and require context for a person using assistive technology, then alt text can be longer to describe the information in them. The generally accepted length is 100 words.
- Refer to text. If the information is presented in the text, alt text can refer to the body text; “Graph shows XYZ, as described in the preceding paragraph.”

» Convey the main point of the information in the image, chart, or graph. For example, “Graph shows used vehicle value index between 2000 and 2021. The index rises slowly from 120 to 140 percent between 2000 and 2020, when it jumps to 210 percent between 2020 and 2021.” (See figure 4.)

Figure 4: Writing Alt Text



DON’T

» Mark images, tables, and charts as decorative figures; they need alt text.

» Reference colors in alt text. (e.g., “the red line refers to …”). Instead, use the line title/subject.

Tables

Tables are an integral part of OCC documents. As such, they must be built so they can be read by screen readers, which are assistive technology for blind and visually impaired audiences. Screen readers read the information from left to right, so tables must be set up to read in this manner.

Tables should only be used to present structured data and information that naturally fits within a table format. Avoid using tables for formatting purposes, as merged cells and columns can disrupt the reading experience and navigation, preventing users from easily returning to the beginning after reading a row.

Tables Dos and Don’ts

DO

- Use the Table feature under “Insert” in Word. This will cut down on 508-compliance errors.
- Stick to a rule of one category or set of information per table.
- Mark the first row as the header row (using Header Row option) for column headers. This assists screen readers, ensures 508 compliance, and avoids accessibility checker errors.

DON’T

- Leave any cell blank. This causes screen readers to pause.
- Build a table within a table. Word has the capability to build tables that will spread across multiple pages, but building a table within that table creates a 508-compliance error.
- Build a table, then merge or split cells, which often causes 508-compliance errors. The example on the next page shows a merged cell under Topic. After reading “OCC Bulletin 2020-11” in the right column, a screen reader will not go back to the information in the Topic column.

Table 1: Table With Merged Cells

Topic	Action	Reference
Bank management and operations	Rule with various amendments to the OCC's regulations in 12 CFR 7, "Activities and Operations"	OCC Bulletin 2020-111
	Joint proposed rule to establish computer-security incident notification requirements for banks and their service providers	OCC Bulletin 2021-3
	Proposed rule to modify requirements applicable to real estate used as bank premises	OCC Bulletin 2021-6

To remediate this error, recreate the table with a Topic entry for each Action and Reference entry or build multiple tables, one for each topic (shown in table 2).

Table 2: Table With Merged Cells Fixed

Topic	Action	Reference
Bank management and operations	Rule with various amendments to the OCC's regulations in 12 CFR 7, "Activities and Operations"	OCC Bulletin 2020-111
Bank management and operations	Joint proposed rule to establish computer-security incident notification requirements for banks and their service providers	OCC Bulletin 2021-3
Bank management and operations	Proposed rule to modify requirements applicable to real estate used as bank premises	OCC Bulletin 2021-6

Don't combine multiple topics into one table because that will often cause users to create merged cells within the table (shown in table 3).

Table 3: Table With Multiple Topics

Performance measures, workload indicators, and customer service standards	**FY 2018**	**FY 2019**	**FY 2020**	**2021 Target**	**2021 Actual**
Supervise and regulate programs					
Percentage of banks with composite capital adequacy, asset quality, management, earnings, liquidity, and sensitivity to market risk (CAMELS) rating of 1 or 2	96%	96%	99%	90%	99%
Rehabilitated problem banks as a percentage of the problem banks one year ago (CAMELS 3, 4, or 5)	44%	15% [a]	23%	40%	28%
Charter program					
Percentage of licensing applications and notices completed within established time frames	97%	99%	98%	95%	98%
Agency-wide					
Total OCC costs relative to every $100,000 in assets regulated	$9.12	$8.07	$7.78	$7.37	$6.79

Table 4 and table 5 show two different ways to remediate the table.

Table 4: Table With Single Topic

Performance measures, workload indicators, and customer service standards	Type	FY 2018	FY 2019	FY 2020	2021 Target	2021 Actual
Percentage of banks with composite capital adequacy, asset quality, management, earnings, liquidity, and sensitivity to market risk (CAMELS) rating of 1 or 2	Supervise and regulate programs	96%	96%	99%	90%	99%
Rehabilitated problem banks as a percentage of the problem banks one year ago (CAMELS 3, 4, or 5)	Supervise and regulate programs	44%	15% [a]	23%	40%	28%
Percentage of licensing applications and notices completed within established time frames	Charter program	97%	99%	98%	95%	98%
Total OCC costs relative to every $100,000 in assets regulated	Agency-wide	$9.12	$8.07	$7.78	$7.37	$6.79

Table 5: A Complex Table Converted to a Simple Table

Table X: Performance measures, workload indicators, and customer service standards

Supervise and regulate programs	**FY 2018**	**FY 2019**	**FY 2020**	**2021 Target**	**2021 Actual**
Percentage of banks with composite capital adequacy, asset quality, management, earnings, liquidity, and sensitivity to market risk (CAMELS) rating of 1 or 2	96%	96%	99%	90%	99%
Rehabilitated problem banks as a percentage of the problem banks one year ago (CAMELS 3, 4, or 5)	44%	15%[a]	23%	40%	28%
Charter program	**FY 2018**	**FY 2019**	**FY 2020**	**2021 Target**	**2021 Actual**
Percentage of licensing applications and notices completed within established time frames	97%	99%	98%	95%	98%
Agency-wide	**FY 2018**	**FY 2019**	**FY 2020**	**2021 Target**	**2021 Actual**
Total OCC costs relative to every $100,000 in assets regulated	$9.12	$8.07	$7.78	$7.37	$6.79

Don't use multiple header rows at the top, which creates a 508-compliance issue. If there are two table rows at the top, pull the top row out of the table, and format it as a table title outside the table. Table 6 is an example of the incorrect way, and Table 7 is an example of the correct way.

Table 6: Table With Multiple Rows at Top

Table X. Number of Re-Defaults for Loans Modified Six Months Previously Modified Loans 60 or More Days Delinquent Six Months After Modification							
States	Decreased by 20% or more	Decreased by 10% to less than 20%	Decreased by less than 10%	Unchanged	Increased	Not reported	Total re-defaults
Total - All States	322	480	925	975	182	31	2,915

Table 7: Table With Single Header Row

Table X. Number of Re-Defaults for Loans Modified Six Months Previously
Modified Loans 60 or More Days Delinquent Six Months After Modification

States	Decreased by 20% or more	Decreased by 10% to less than 20%	Decreased by less than 10%	Unchanged	Increased	Not reported	Total re-defaults
Total - All States	322	480	925	975	182	31	2,915

Colors

Color is an important part of accessible documents. Two key things about color to keep in mind for accessibility are

- ensuring enough contrast between colors, especially when text is on a colored background like the example in table 7.
- preventing color from being the only difference between two things; for instance, in-text hyperlinks in the next paragraph are not only blue, but also underlined.

The OCC policy on colors is addressed in PPM 2100-6, "Visual Identity Standards." Official OCC colors are on the OCC Visual Identity Standards web page on OCCnet. As part of those official colors, the OCC has created a 508-compliant color palette to use in charts and graphs (see figure 5).

Colors Dos and Don'ts

DO

- Use strong color contrast. To learn more about contrast, refer to the WCAG 2.1 standards and techniques.
- Use the OCC chart colors for tables, charts, and graphs.

DON'T

- Use dark-colored text on dark-colored backgrounds or light-colored text on light-colored backgrounds. For example, black text on a dark blue background has low contrast.
- Guess or assume text can be read.
- Use the color red and green together in a chart or graph (even if trying to denote that red = bad and green = good). Most people with color blindness won't be able to see the difference between those colors.

OCC Chart and Graph Colors

If the chart or graph has three colors, use the primary colors palette; if it has more than three colors, use the primary and secondary palettes together; and if it has more than six, use the full primary, secondary, and additional colors palettes.

Figure 5: OCC Chart Colors

PRIMARY COLORS

HEX #001D4F	HEX #005ACA	HEX #F68E32

SECONDARY COLORS

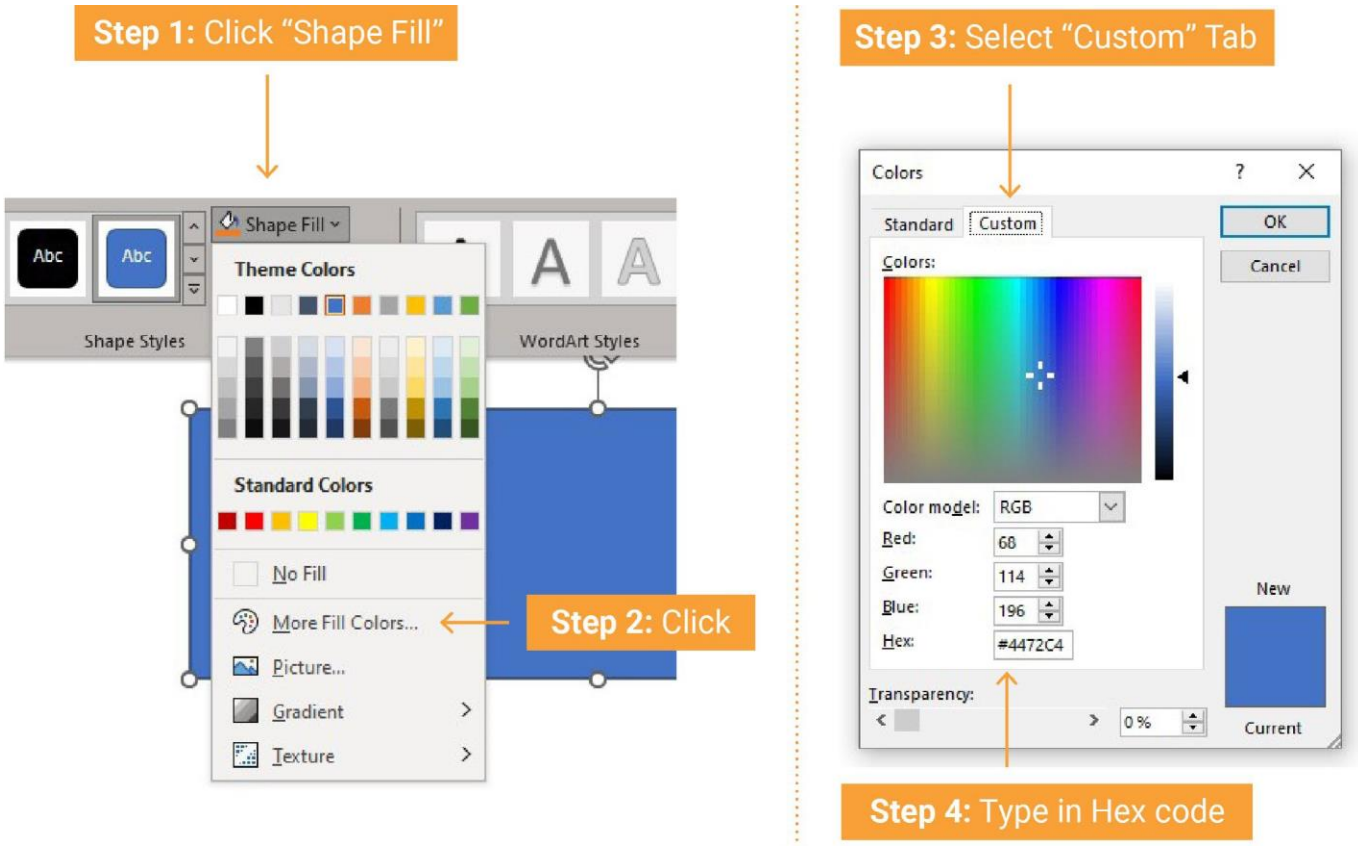
HEX #514A72	HEX #608040	HEX #999999

ADDITIONAL COLORS

HEX #458080	HEX #A1608D	HEX #294F42	HEX #4D7C99

To add a hex code to your color palette, select any shape, click the “Shape Fill” icon, then select “More Fill Colors.” Select the “Custom” tab at the top; values can be found or edited in the hex box (you can copy and paste the values from this document into the hex code box).

Figure 6: Accessing More Colors and Adding Custom Colors



This method can be used to determine background colors within table cells. Users should select the cell or cells, use the arrow next to the paint bucket tool, and select “More Colors.”

To use white text on a darker background, (e.g., in a header row of tables), choose a dark blue color that contrasts against the white text; hex codes #001D4F (dark blue) and #005ACA (true blue) properly brand the product with an OCC color and create a contrast ratio that meets accessibility standards.

Figure 7: Examples of Low-Contrast Backgrounds

Hyperlinks

Accessible hyperlinks are another consideration in making 508-compliant documents. Below are some accessibility guidelines for links:

- **Create meaningful hyperlinks**. Links must state their destination. For example, use “visit occ.gov for more information” instead of “click here for more information.” Follow the *OCC Style Manual* for typing out actual hyperlinks.

- Do not hyperlink the following or similarly vague phrases:
  - Click here
  - More
  - Read more
  - Find out more
  - Click for details

- **Links must be underlined and in a different color from the text.** The OCC standard is to use the automatic underlined blue text in Word.

- In general, **avoid using images as links**. If an image functions as a link, provide alt text that conveys the link’s destination.

- **Avoid adjacent, redundant links**. This can be confusing to screen readers. Use specific links. For example, if linking to a series of PPMs, link directly to the PDF of the PPM, not the landing page for all PPMs.

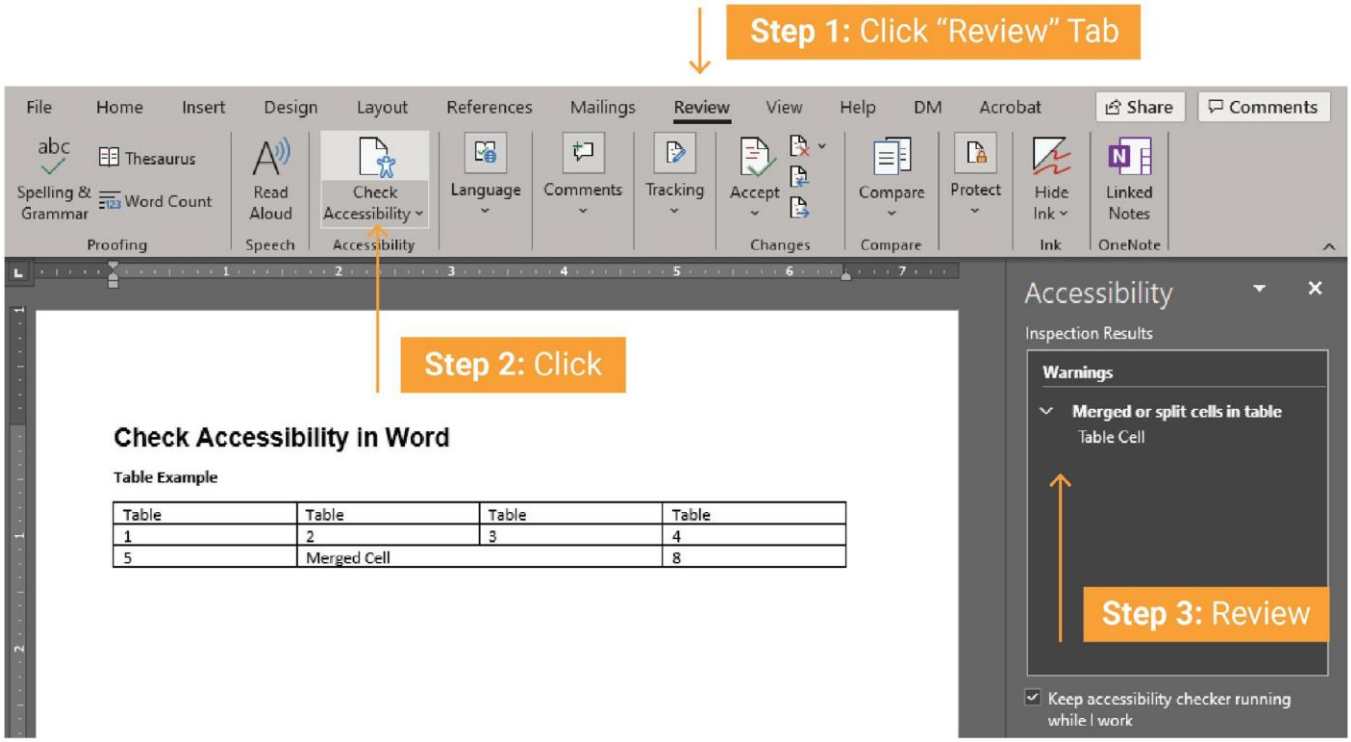
Checking Accessibility

Checking Accessibility in Word

Microsoft Word provides an accessibility checker, which is a simple tool that can help employees get better acquainted with errors a document may have.

Before submitting a document for review, OCC employees can check for 508 compliance using Word's "Check Accessibility" feature, found on the "Review" menu tab, and fix common errors and warnings, such as missing alt text, images or objects not inline, merged or split cells in a table, and hard-to-read text contrast. The accessibility checker has tips on how to remediate these errors.

Figure 8: Word Accessibility Checker



This will bring a pop-up box to the right of the screen that lists accessibility warnings. Below is a description of common warnings and ways to remediate them.

Missing alternative text

Objects such as pictures and figures require alt text. If any item is missing alt text, clicking the error will bring up a dialog box to fix it.

Decorative lines will also show up as needing alt text. In this case, select the error, click the drop-down menu, and select "Mark as decorative." Refer to the "How to Mark a Visual as Decorative" section for step-by-step instructions.

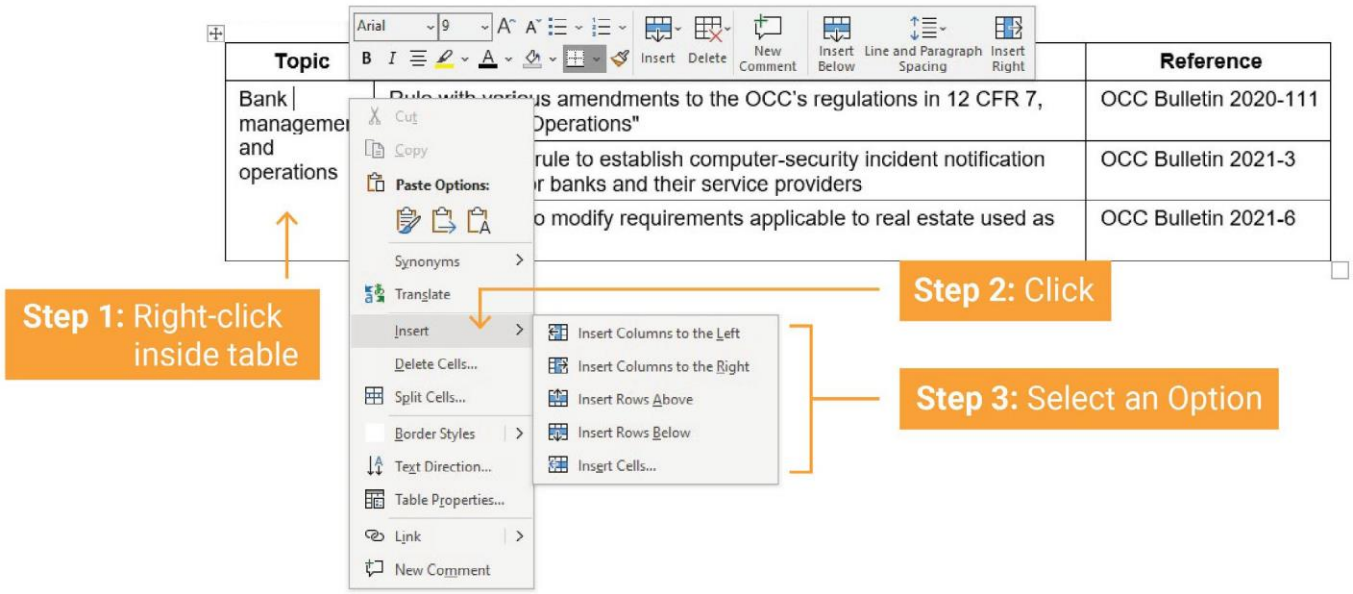
Image or object not inline

Images or graphics may show up as not inline. To remediate, right-click the image and select "Wrap Text," then "In Line with Text."

Merged or split cells in table

Avoid merging or splitting cells because they create errors. The easiest fix is to delete the split or merged cells in Word, then create a new row by placing the cursor to the left edge of the table and using the + sign, as seen below.

Figure 9: Adding a Row or Column



Check reading order

This error will pop up as a warning when tables are not properly constructed. Tables are read left to right in a row, then move to the next row. Tables with merged or split cells confuse screen readers. Refer to the "Tables" section of this document for examples and to learn how to remediate this issue.

Hard-to-read text contrast

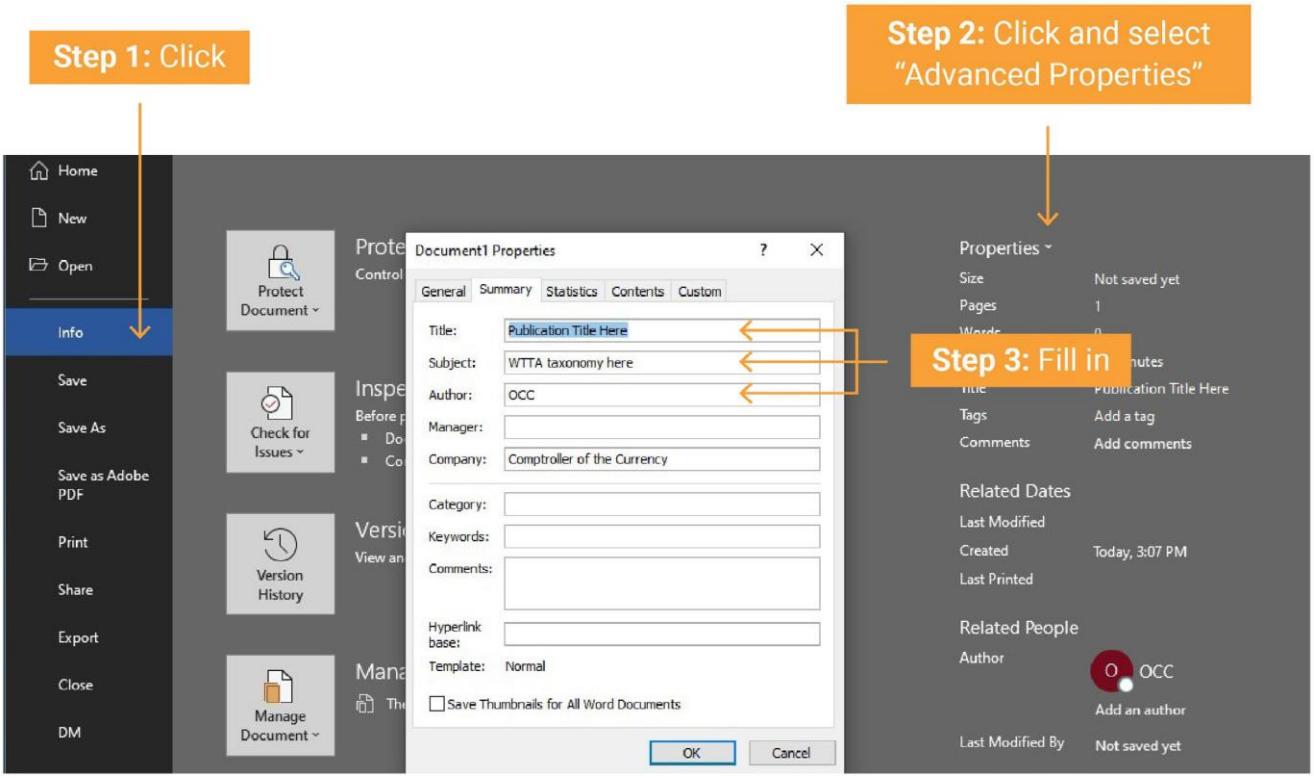
This error will show up when there is not enough contrast for a person to read text in a Word document. Follow the instructions in the Colors section of this document to fix this issue.

A 508-compliant PDF requires adding document properties and bookmarks to the document. This can be done in Word and Adobe Acrobat, but it is better to add properties in Word since they will carry over during conversion.

Adding Document Properties in Word

1. Click “File” and then select “Info” in the drop-down menu.
2. Click the small arrow next to Properties on the right side of the page.
3. Fill in:
   a. **Title**: Publication title
   b. **Subject**: Use the references in Public Affairs’ published taxonomy reference to fill in the subject line. If multiple categories are needed, repeat string from the beginning of the category, and separate strings with semicolons. For example, Bank Management>Board & Management>Board & Management Oversight.
   c. **Author**: OCC
4. Click “OK.”
5. Save the document.

Figure 10: Word Document Properties



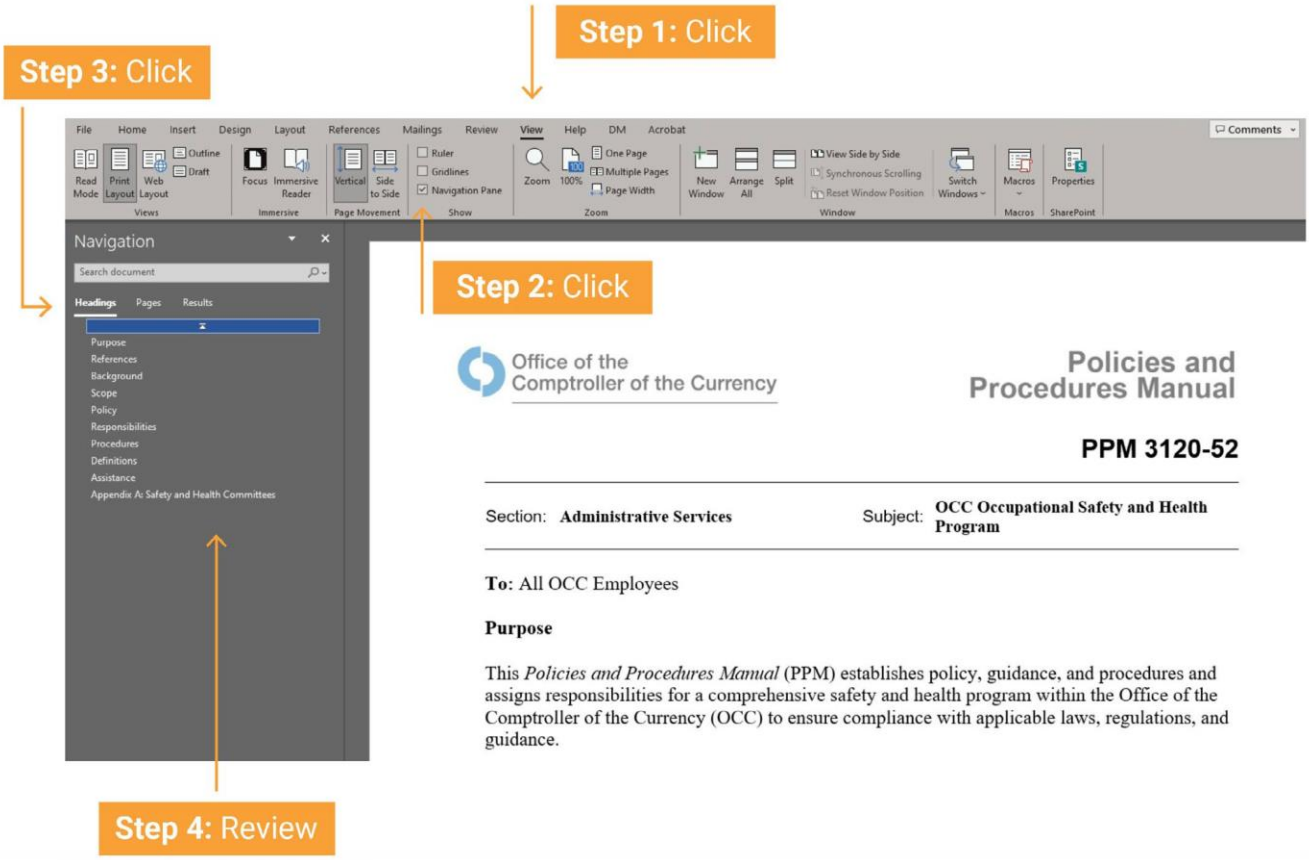
Ensuring Correct Bookmarks

Since you will be using one of the OCC templates,headings will be properly formatted and become bookmarks when the document is converted to a PDF.

Bookmarks serve as navigational landmarks for people using screen readers or assistive technology. Screen readers can announce bookmarks, making it easier for users to understand the document's structure. To ensure that all the bookmarks look correct, follow the instructions below (see figure 11).

1. In the toolbar, click "View."
2. Click "Navigation Pane."
3. On the left-hand slide, there will be a pane titled "Navigation", select "Headings."
4. Save the document.

Figure 11: Ensuring Correct Bookmarks

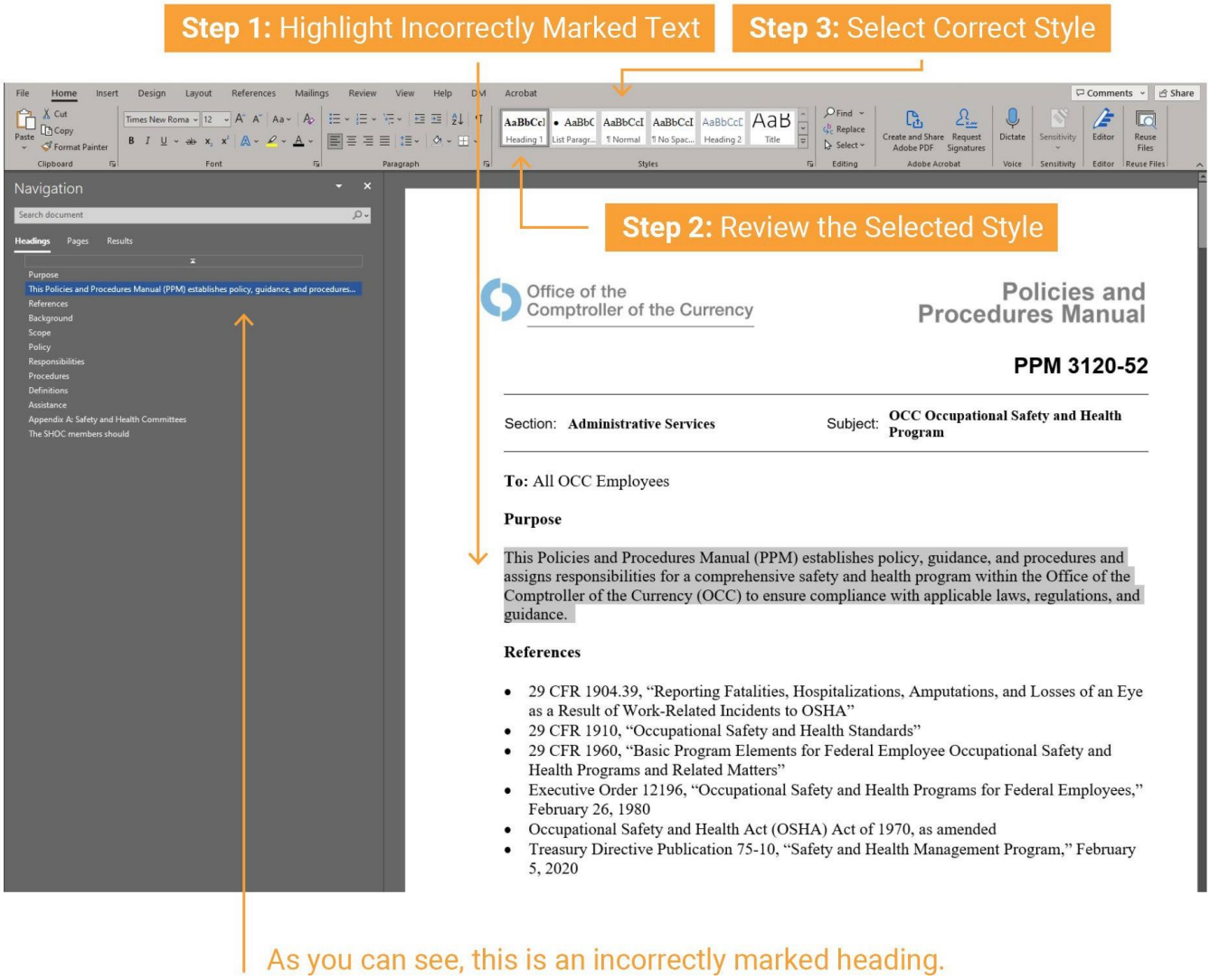


Resolving Bookmark Issues

If your bookmarks appear incorrect, the issue is that the text has incorrect heading labels. This often happens when you copy and paste from one document to another. **Even if you change the typeface manually, you may not have the correct formatting assigned in the style sheet**. To mitigate this, follow the instructions below (see figure 12).

1. Select the text that is marked incorrectly.
2. Review style sheet to ensure the correct style is selected.
3. If the wrong style is selected, select the correct one.
4. Recheck the navigation pane to ensure everything looks correct.

Figure 12: Resolving Bookmark Issues



Accessible PDFs

Documents processed by Editorial and Design Services will be converted to a PDF and checked for accessibility by Editorial and Design Services. If accessibility issues are identified in the base document prior to conversion, Editorial and Design Services will work with customers on remediation. Editorial and Design Services will take any minor remediation actions in the PDF without author involvement. For documents not processed by Editorial and Design Services (see PPM 2100-1), refer to these steps when creating a PDF.

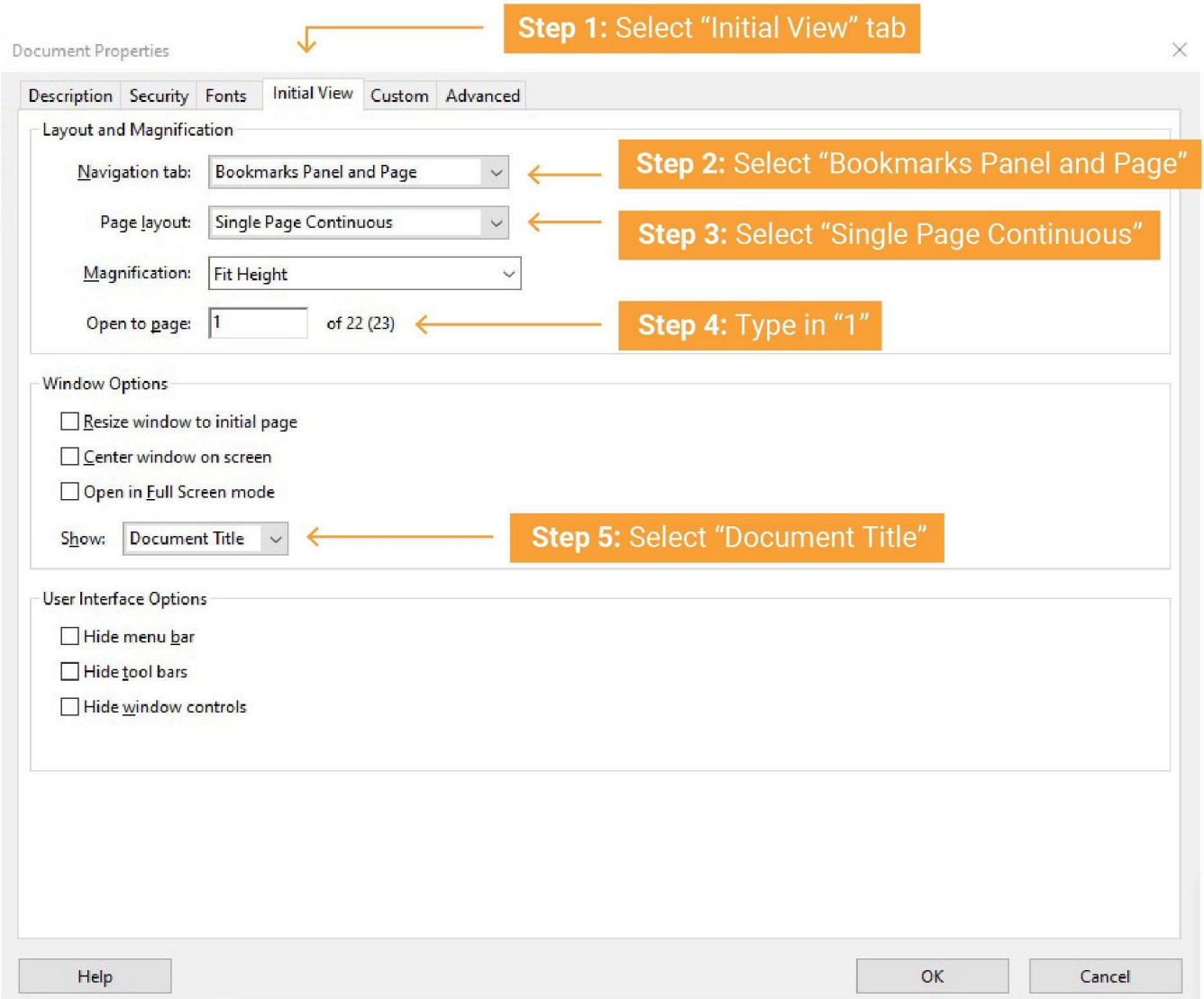
Key items in making a PDF document 508 compliant are proper initial view settings and bookmarks. This can be done in Word and Adobe Acrobat, but it is better to add properties in Word since they should carry over during conversion. If you receive a PDF with no properties, use the steps below to add them. If you have access to the Word file, it is better to make these updates in Word. This section will also introduce the accessibility feature in Acrobat and provide solutions to some common errors.

Setting Initial View Settings

The first step in making a compliant PDF is setting the initial view settings (see figure 13).

1. Go to File: Properties, or hit Control + D.
2. Select the “Initial View” tab.
3. For the Navigation tab, select “Bookmarks Panel and Page.”
4. For Page layout, select “Single Page Continuous.”
5. For Open to page, type in “1.”
6. For Show, select “Document Title” (if you don’t do this, it will produce an error when you run the accessibility check).

Figure 13: Initial View Settings



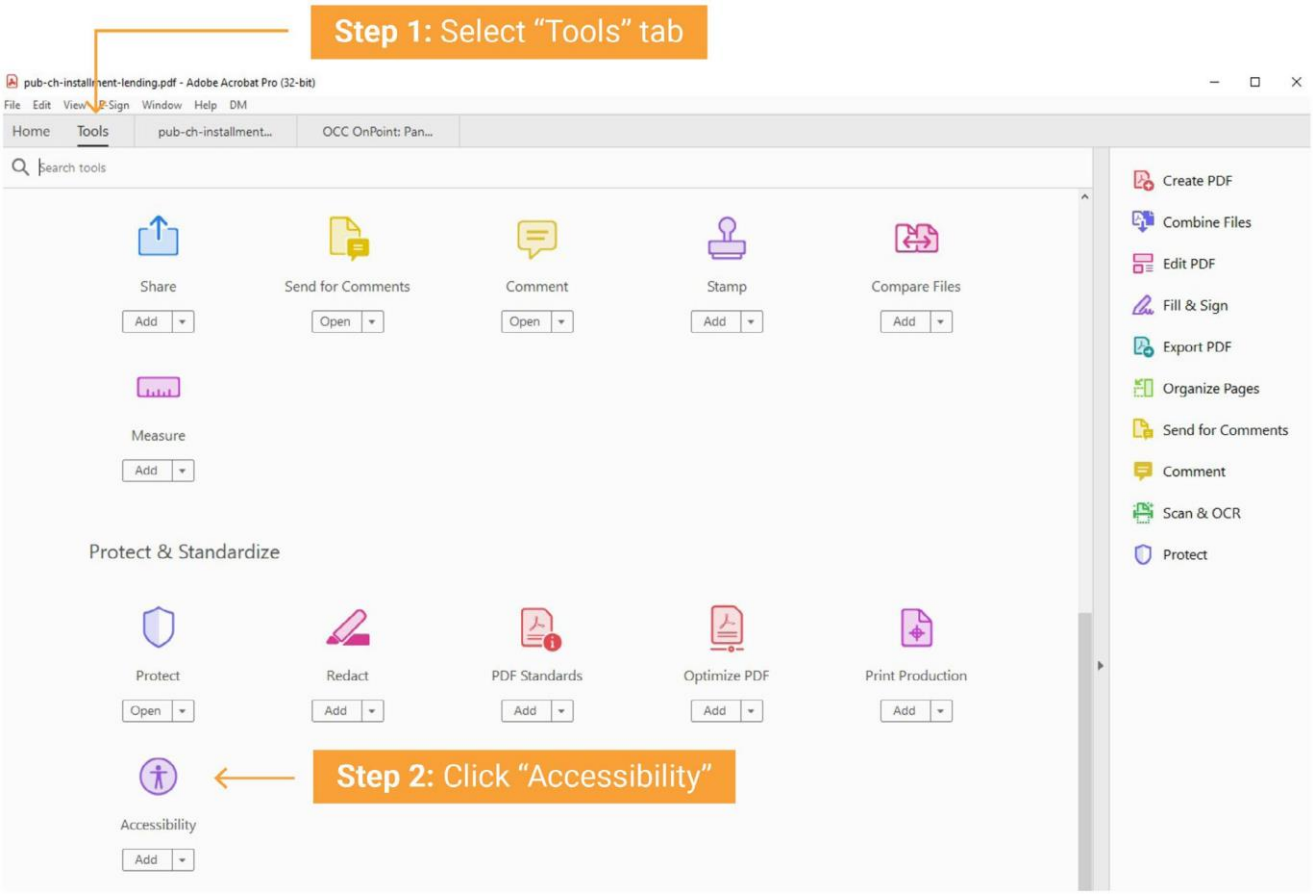
PDF Accessibility Checker

The built-in accessibility checker is what we use to determine compliance. Most errors should be remediated in Word to ensure that the fix is retained in future versions of the document. Alt text sometimes doesn't save into the PDF and may need to be manually done within the PDF.

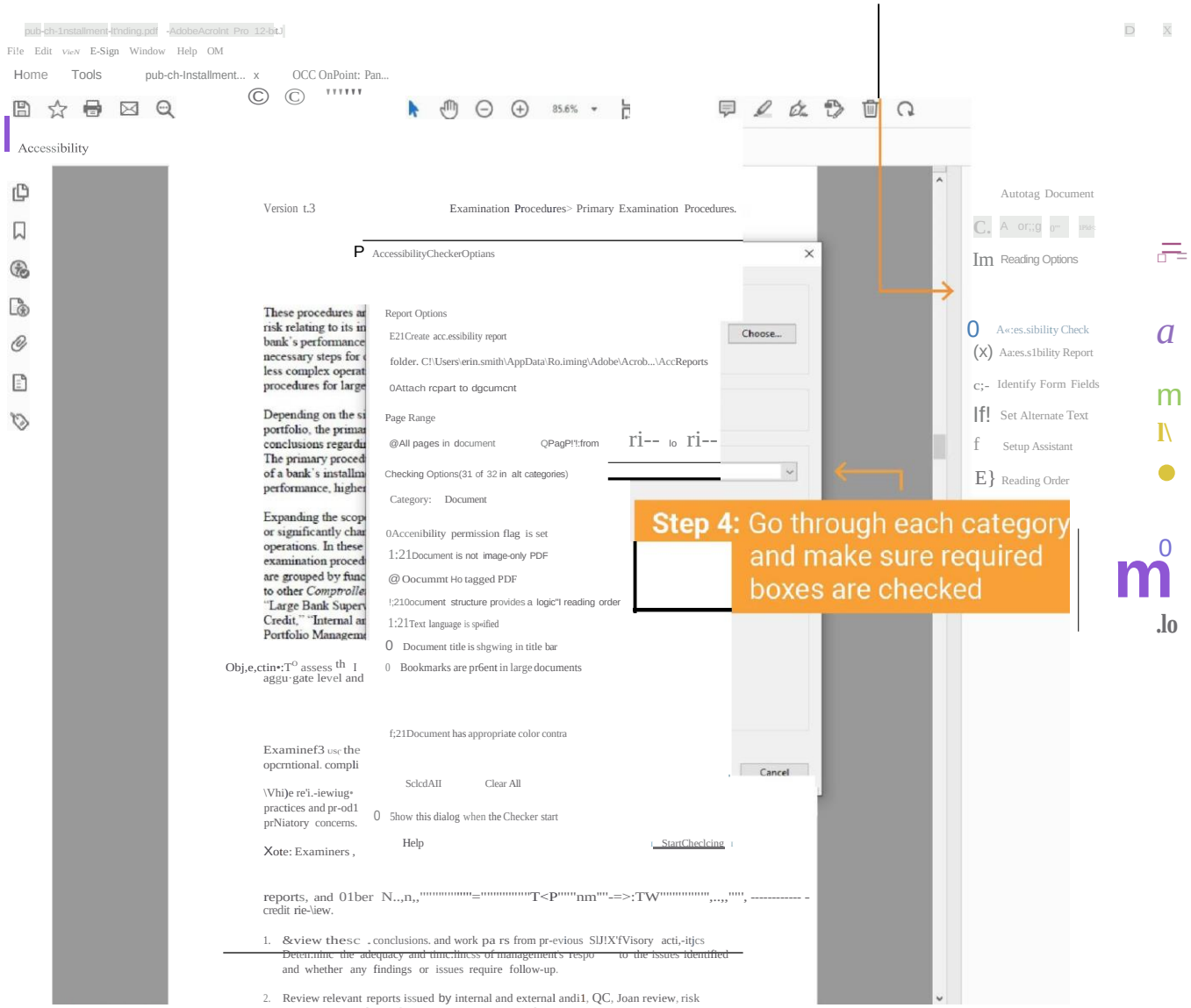
To use the built-in accessibility checker, do the following (see figure 14):

1. Click "Tools."
2. Click "Accessibility."
3. In the right-hand menu, click "Accessibility Check."
4. Make sure each item is selected under "Checking Options." The only option that doesn't need to be checked is "Tables must have summary," which listed under the "Forms, Tables and Lists" category.
5. Click "Start Checking."

Figure 14: PDF Accessibility Checker

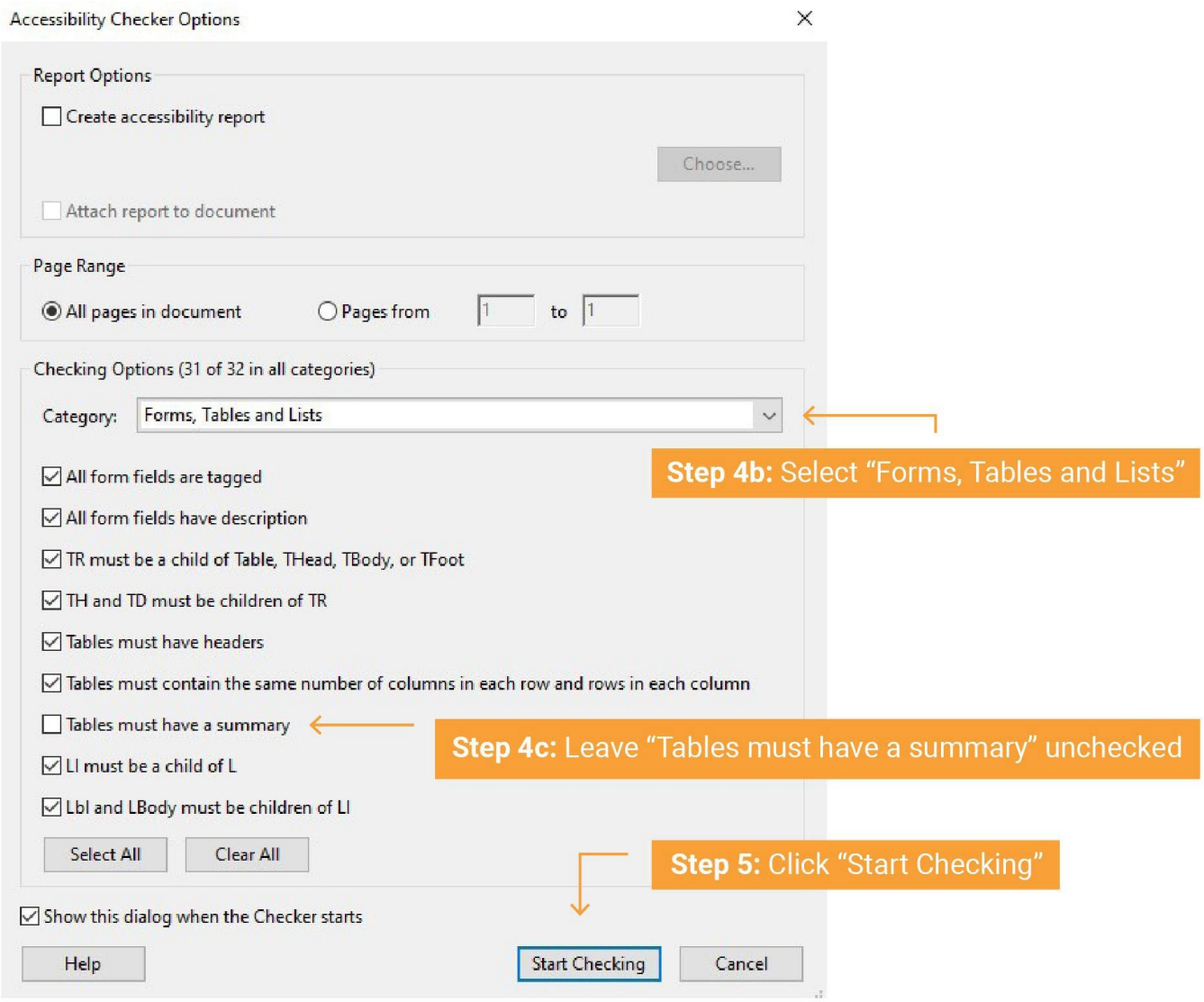


Step 3: Click "Accessibility Check"



Step 4: Go through each category and make sure required boxes are checked

8.S0,:11.00in



Errors with Manual Checks

Errors that will always occur are "Logical Reading Order" and "Color contrast". You will need to pass those manually. If you believe the colors all provide the correct contrast, right-click on "Color contrast - Needs manual check" and select "Pass."

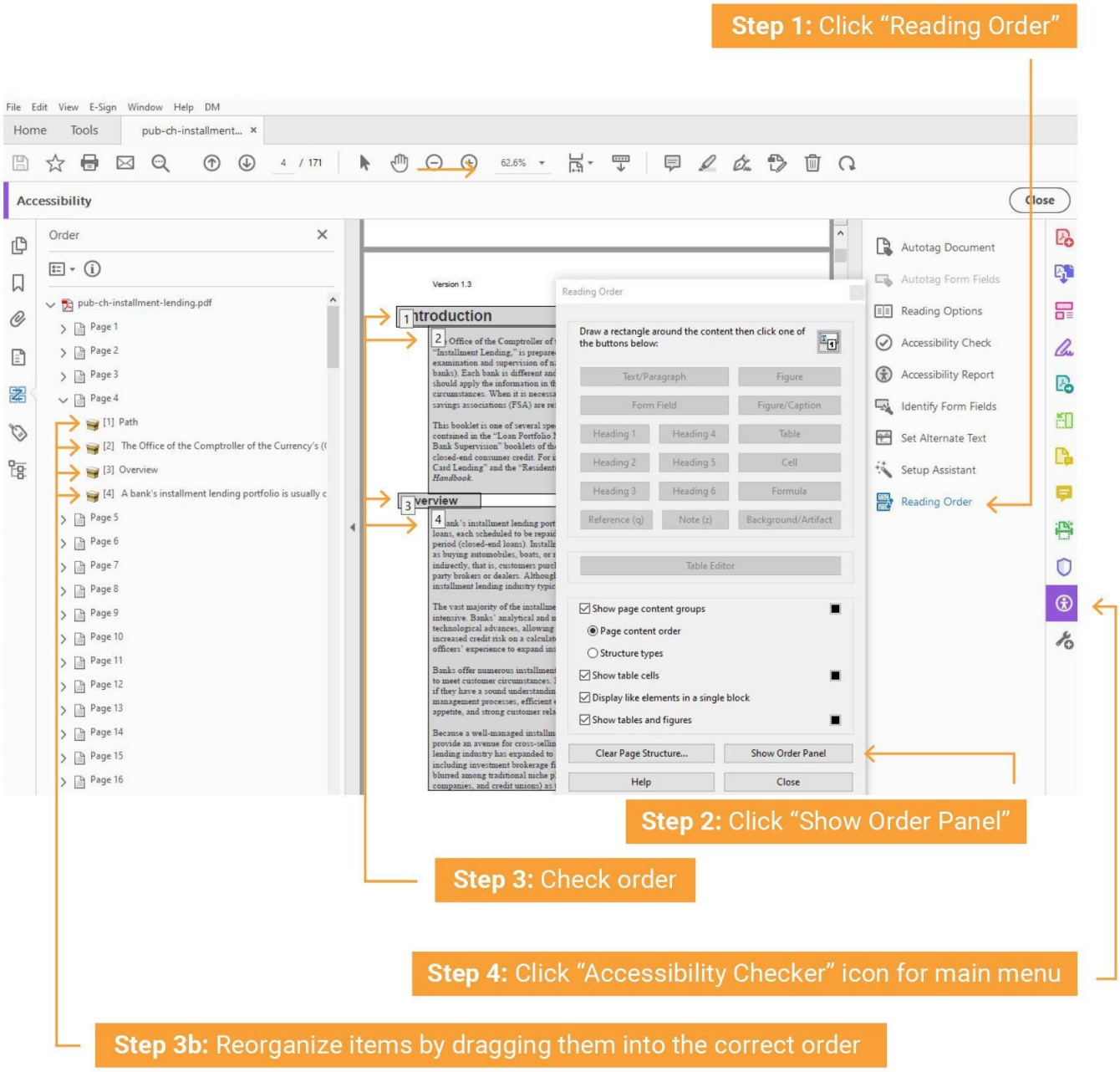
To review the logical reading order, follow the instructions below (see figure 15):

1. In the right-hand accessibility menu (where you clicked "Check Accessibility"), select "Reading Order. "
2. A pop-up will appear. In the bottom right-hand corner, click "Show Order Panel."

3. The left-hand menu will now show all of the items on the page. You will also be able to see how each piece of your document is ordered. If items appear out of place, you can manually rearrange them by dragging them up or down.

4. Once you've reviewed all pages of your document, you can now go back to the main menu, and right-click on "Logical Reading Order - Needs manual check" and click "Pass."

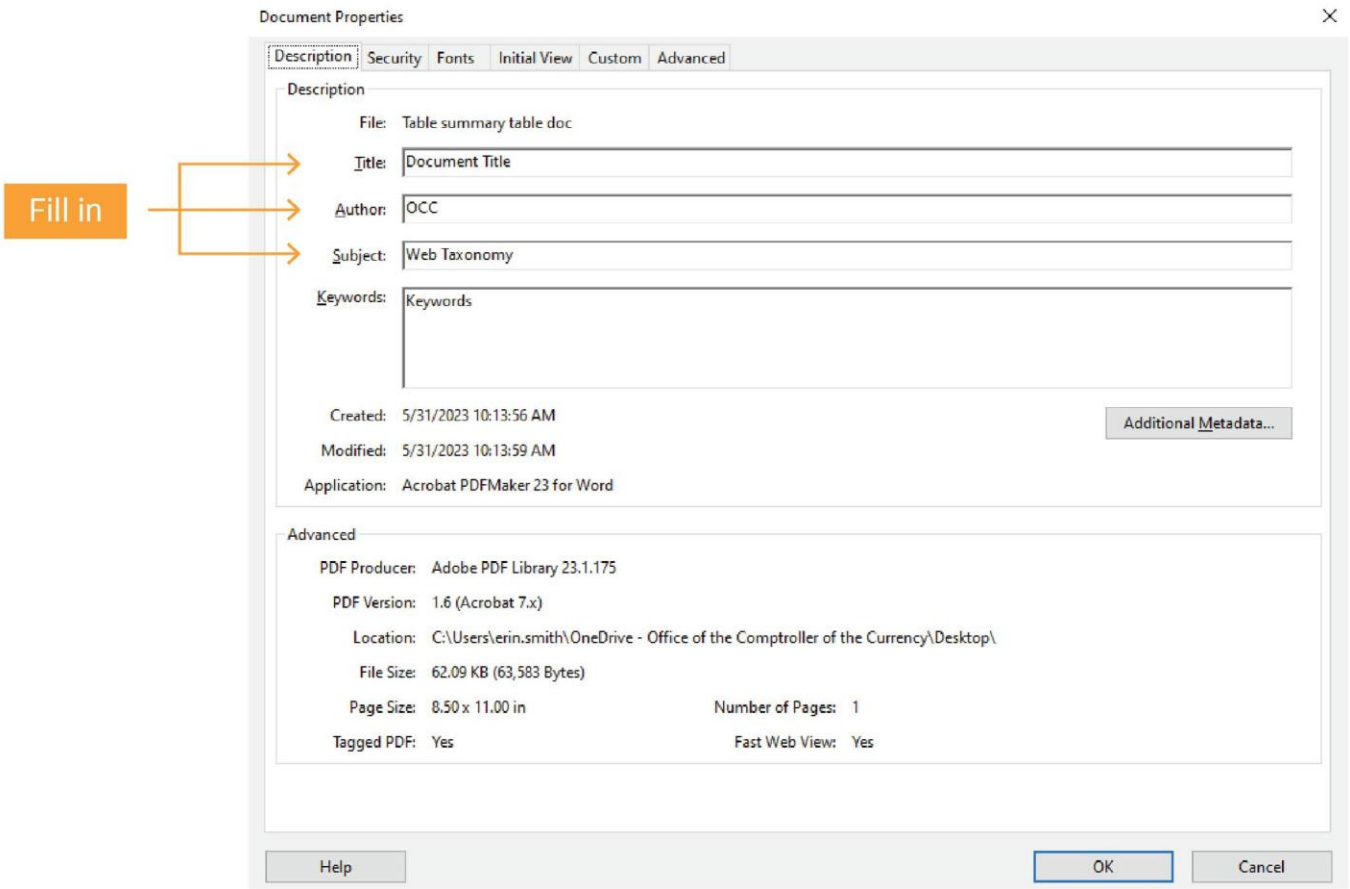
Figure 15: Checking Logical Reading Order



If one of the errors is “Title - failed,” you’ll need to ensure that your document has the appropriate title. Figure 10 shows how to do this in Word in case the document needs further updates. However, you can follow the instructions below if you need to add the title in Acrobat.

1. Go to File: Properties, or hit Control + D.
2. Fill in “Title” with the title of your document.
3. Additionally, ensure that the “Author” and the “Subject” are also filled in. For how to use the web taxonomy, refer back to “Adding Document Properties in Word” section of this document.

Figure 16: Adding Document Title



Some other common errors you may encounter are “Alternate Text” and “Appropriate Nesting.”

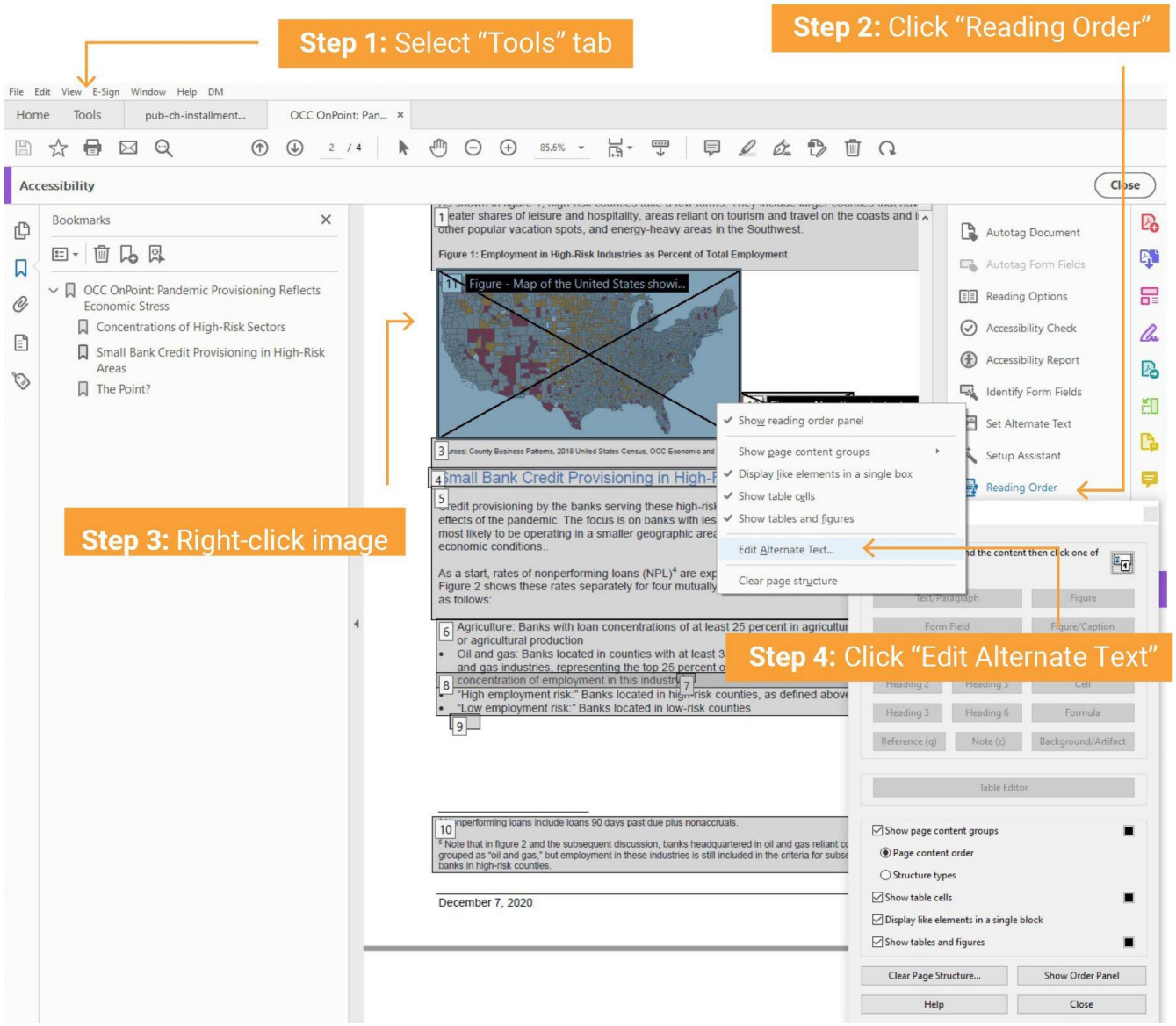
As with the document title, all alternate text should be added in the Word document, however, if that is not a possibility, you can follow the steps below to add alt text to the images that have errors (see figure 17).

Alternate Text Error

To add alt text to an image:

1. Click “Tools.”
2. Click “Reading Order” on the right-hand panel.
3. Right-click image.
4. Click “Edit Alternate Text.”

Figure 17: Adding Alt Text to an Image in Acrobat



Appropriate Nesting

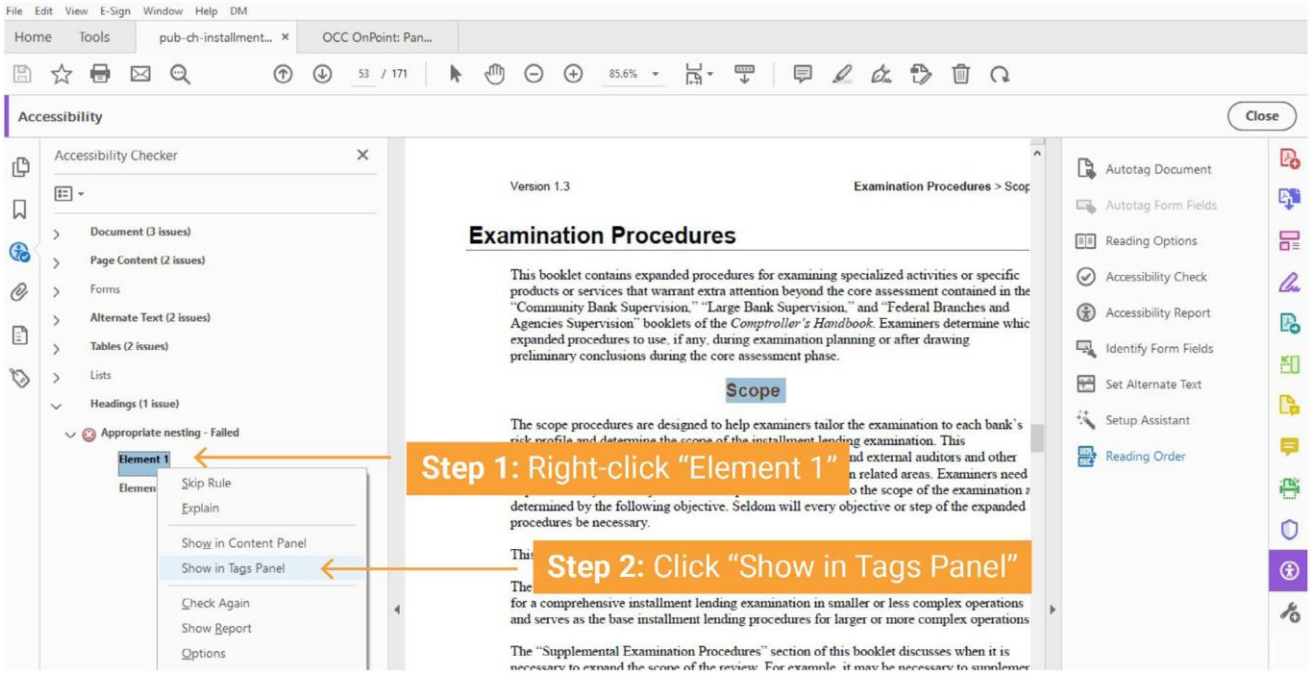
A PDF contains tags, which provide a logical structure to govern how the content is presented through assistive technology. Headings in a document are labeled with an “H” tag and the body text is labeled with a “P” tag. “H” tags (e.g., H1, H2, H3) denote the heading levels within a document. Within the PDF, they must appear within that order. For example, an “H3” cannot be nested directly under an “H1” tag. If this is done, the accessibility checker will flag an appropriate nesting error under Headings. It is better to remediate this error using the steps outlined in the Word section because it is easier and the changes will be retained if any changes are made to the document. If you don’t have the Word document, the steps to remediate this in Acrobat are below.

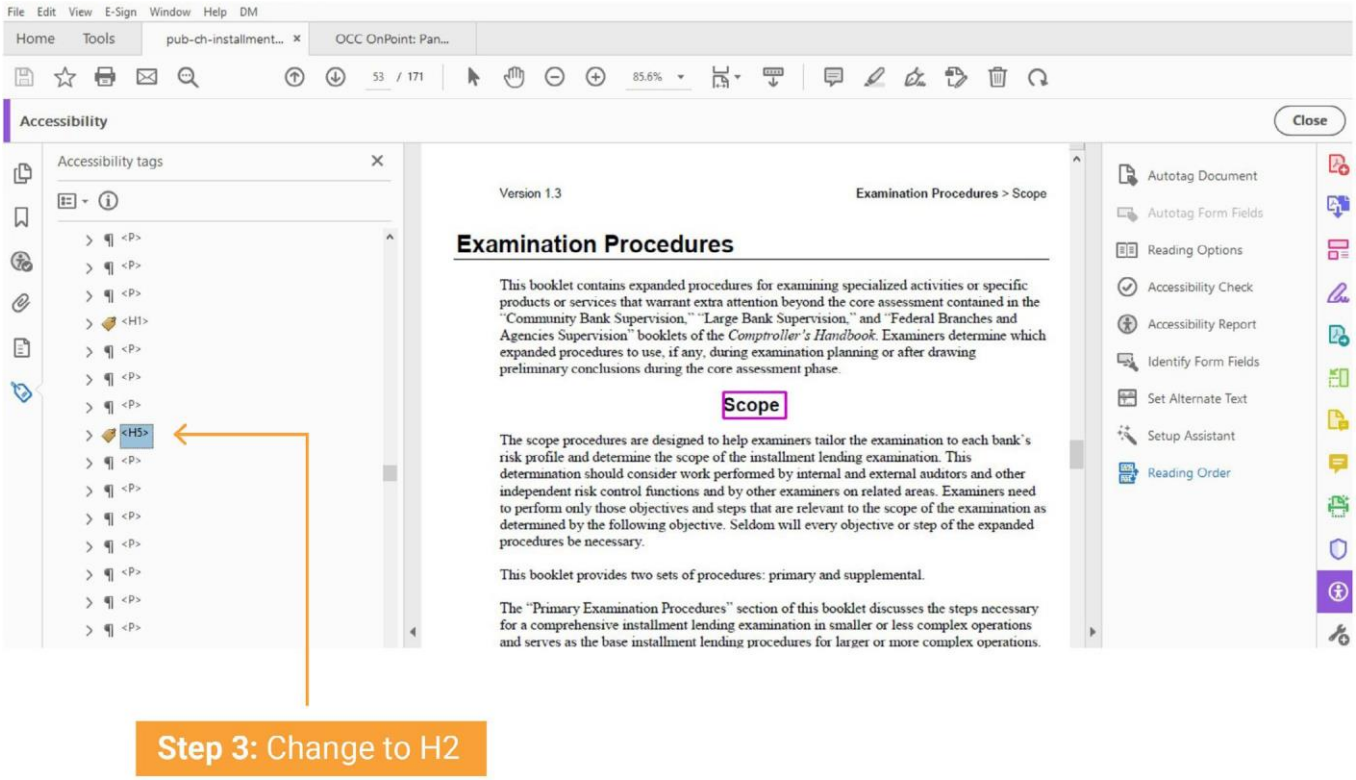
Depending on how long your document is, and how many heading errors there are, this can get a bit complicated, so follow the steps below as best possible.

These steps will guide you through the visual example:

1. In the left-hand menu, right click error “Element 1.”
2. Click “Show in Tags Panel.”
3. The tags panel will show that a “H5” is nested under an “H1” and needs to be remediated. To correct, change the “H5” to “H2.”

Figure 18: Fixing Appropriate Nesting Error





When you remediate the first nesting error, this may affect the rest of the headings (and create new errors). Make sure you go through all headings to confirm that everything is nested properly.

Once you believe you've fixed all of the errors, run the accessibility checker again. When the checker has no errors, save the document to retain all of the changes.

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