

Word Accessibility Issues (Remediation Instructions)

This tutorial has given examples of the most common errors encountered when creating a word document. A sample word document that is non-compliant and Instructions on how to make this document compliant are provided on the website. In this example the document was remediated using Microsoft Word 2013.

To create an accessible word document, just create your document like you normally would and then use the remediation procedure below to resolve any issues.

How to Remediate a Word Document in 10 easy steps:

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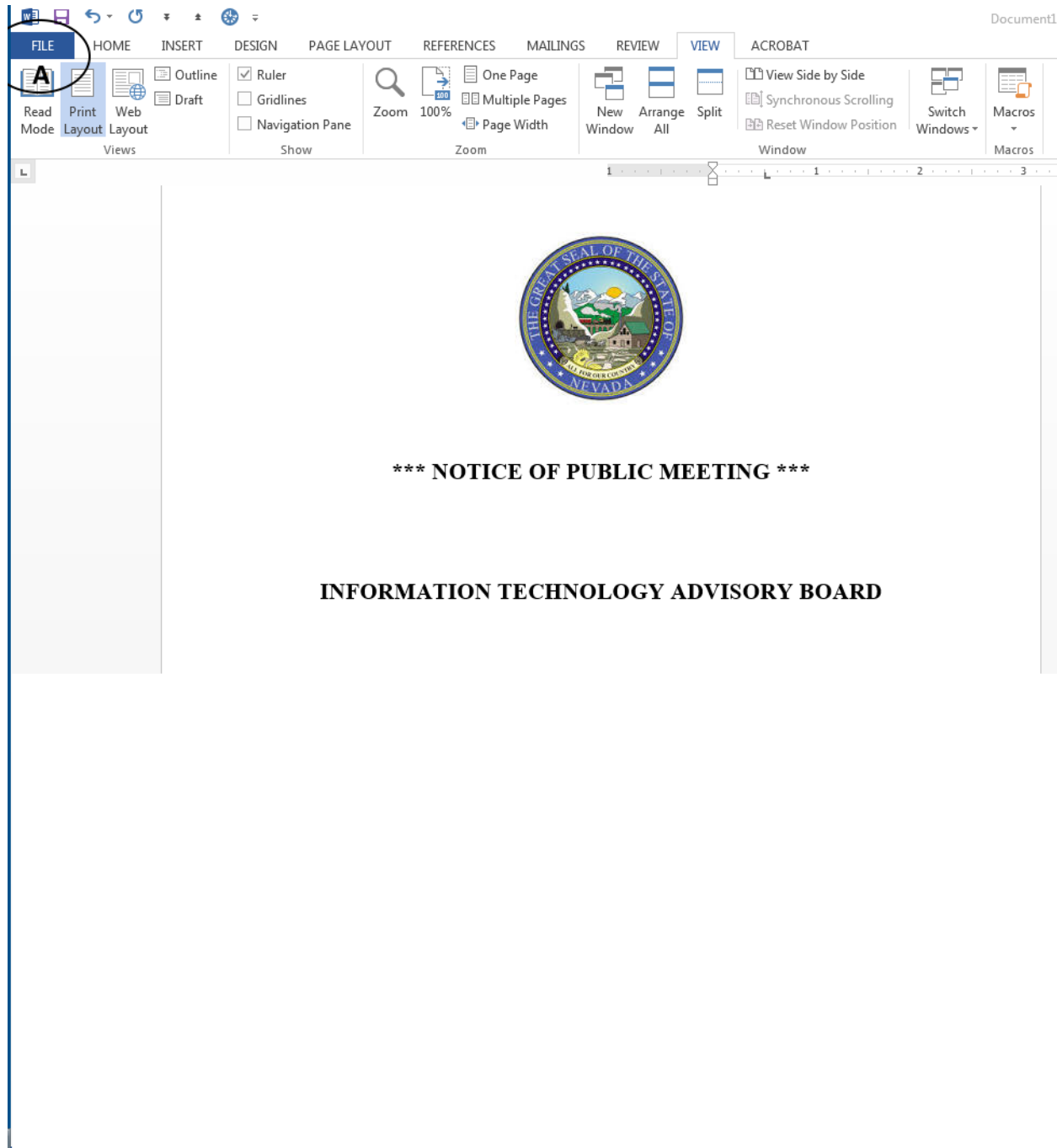
Any further questions please refer to this QR code reader or this URL.

http://ada.nv.gov/Training/document_remediation/

Inspecting a Document

All documents should be checked for ADA compliance and this is how to check using Microsoft Word.

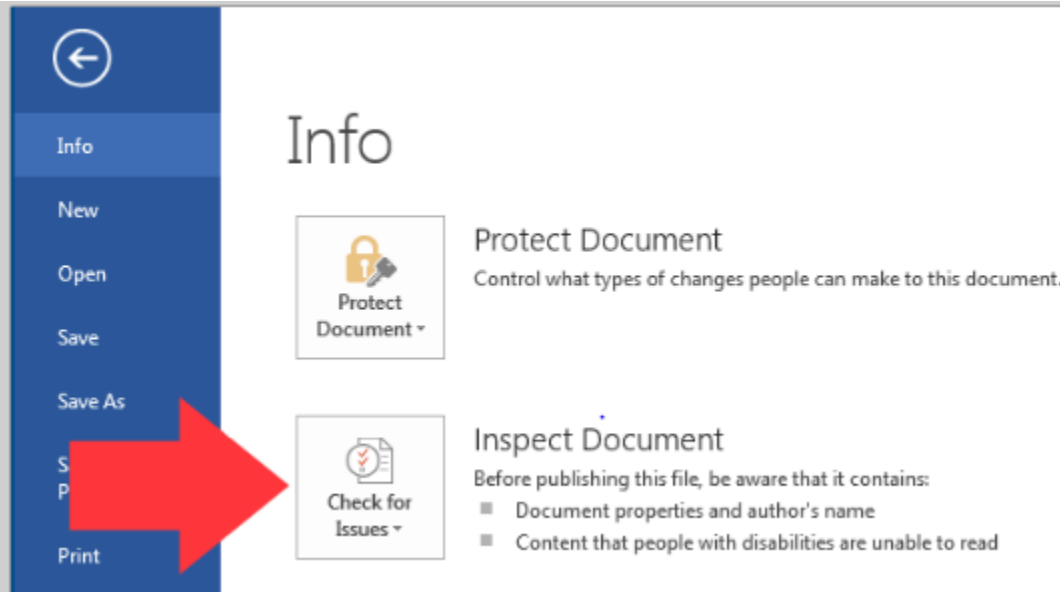
A. Select “File” in the top left of your document



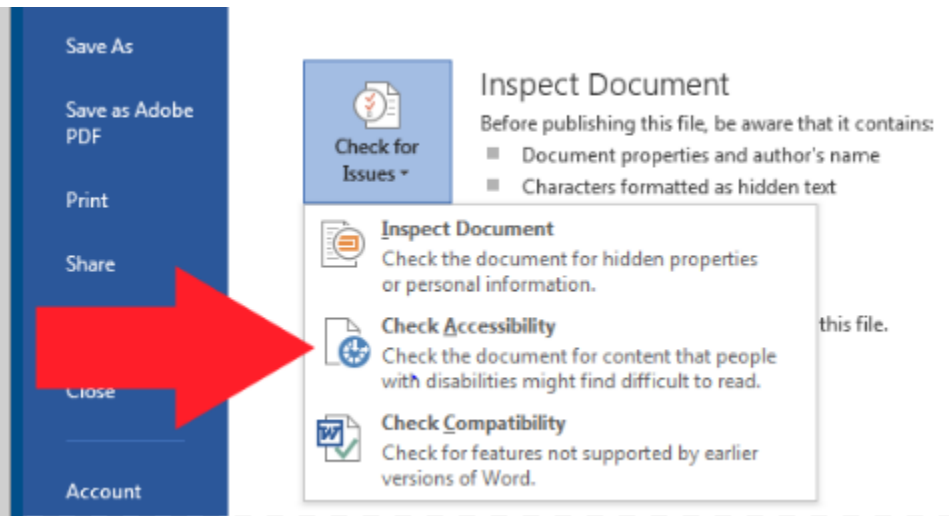
Check for Issues

All documents can be checked for issues and the check accessibility will run a scan on documents. All errors will be listed for remediation.

1. Click on check for issues.



2. Select "check accessibility".



Style and Appearance

Color to Convey Meaning

If color is used to convey information, it **MUST** be accompanied by a text alternative.

The text alternative for information conveyed by color **MUST** accurately convey the same information without color.

If color is used to convey information, it **MUST** be accompanied by a visible alternative (text, image, graph, etc.) that does not depend on color for meaning.

Highlighting

Under normal circumstances, screen readers do not convey any information about highlighting to blind users.

Here are a couple of ideas of ways to draw attention to text in Word for blind users:

- **Write the word "important" (or similar):** The most reliable way in Word to "highlight" text for blind users is to write some text in the document that draws attention to the content. You could put the word "Important" (or "Warning" or "Attention," etc.) before the important content, for example.
- **Hidden text:** If you don't want to add any visual words to the document, you could add some hidden text just for screen reader users. In HTML, and there are multiple techniques (add the text via aria-label, hide the text with the CSS clipping technique, hide the text offscreen, etc.). Though there are not as many techniques in Word, it is possible to hide content. To add hidden text in Word, you can set the color of the text to the same color of the background, then shrink the text size very small. The big danger of this technique is that the text might get accidentally deleted, moved, or altered, especially if the final format of the document is MS Word format. If the final format is PDF or EPUB or some other read-only format, the risk is lower.

Despite the weakness of highlighting for blind users, highlighting can be effective for visual users, because it draws their attention to important parts of the document. This can actually be an accessibility benefit for sighted users, especially users with reading disorders or cognitive disabilities.

Use highlighting where appropriate. Just be sure to supplement it with text that conveys the same meaning, for the benefit of blind users.

Color Contrast

Small text and images of small text (under 18 point regular font or 14 point bold font) **MUST** have a contrast ratio of at least 4.5 to 1 with the background.

Large text and images of large text (at or over 18 point or 14 point bold) **MUST** have a contrast ratio of at least 3 to 1 with the background.

Applying a heading via Cell Styles does not work like applying a header row in a table. It is more for visual effect and not for semantics or structure. A screen reader can identify the font formatting (such as bold, size, etc.) if the user has turned on the appropriate settings to do so, but the cell would not be recognized as part of a table header. Additionally, when you export to pdf, it is not tagged as a table header.

Be careful with color contrast in some predesigned styles, especially the styles labeled as "Good," "Bad," and "Neutral" in the default Excel style menu. While they meet the minimum contrast guidelines, they are still a bit difficult to read, especially if a user has vision impairments.



To Much Bold, Italic or Underlining makes text harder to read

Unfortunately, screen readers ignore all text formatting of this type, unless the user has explicitly changed the settings in the screen reader to read visual formatting. Hardly anybody does this though, and if they do, they usually do it only temporarily. So, under all but the rarest conditions, screen readers simply read the text normally, no matter what the visual styling looks like.

With this in mind, don't rely on visual formatting to convey reading to screen reader users. To a certain degree, you could say that the extra emphasis is an optional enhancement, and that may be true in a lot of cases. If the emphasis is critically important, though, you'll need to write text to convey the emphasis, such as by adding the word "Important" or "Note" before the emphasized content.

Use bold, italic, and underline sparingly. Too much bold or italic text can make a document difficult to read, especially for someone who already has a hard time reading, such as someone with a reading disability. Use underline sparingly. These days, in our web-saturated world, users may think the text is a link. Best practice is to avoid underlining anything that is not a link.

Strike-through

Screen readers don't read strike-through accurately. They read it as regular text unless the user changes their settings in the reader, and hardly anybody changes those particular settings. This oversight is particularly bad because legal documents consistently convey important meaning with its use. *The only thing you can do is give instructions to screen reader users to turn on their font styles in their screen reader to ensure that strikeout text will be read accurately or omit using strikeouts altogether.*

Drop Cap

Avoid the use of Drop Cap effects because it is not read out the same by screen readers as sighted users. Where the word below is read by sighted users as Once upon a time..., a screen reader reads it as 'O', then 'nce' which doesn't make sense.

Once upon a time, there lived a princess who was so self-centered that no one enjoyed talking to her...

Symbols and Special Characters

Some common symbols are accessible to screen readers and are read correctly. Examples include:
\$ ¢ £ ¥ € © ® & ½ ¾

The vast majority of other symbols are not read correctly. Best to avoid their use whenever possible or provide a text explanation for the benefit of screen reader users.

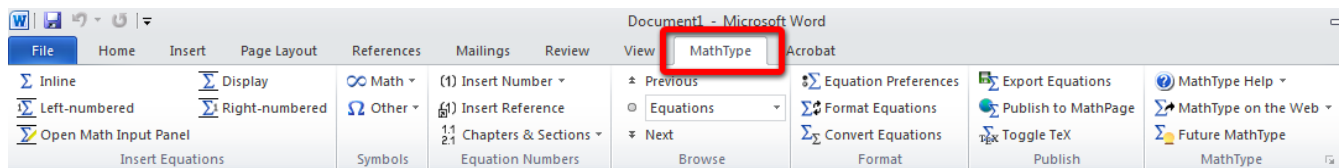
Word Art, Text Effects & Text Boxes

Word Art, Text Effects and Text Boxes should be avoided because they remove text from the flow of the document, they are not announced to screen reader users and they make the text difficult to read, especially for people with low vision.

Math & Equations

There is a built-in equation editor in Word, but the editor currently does not render math in a format that is accessible to screen readers. It does not create MathML (Math Markup Language), and most kinds of math content created by the Equation Editor cannot be read intelligently (or at all) by screen readers. Or, if you do use the built-in Equation Editor, add a good text description of the equation in the document.

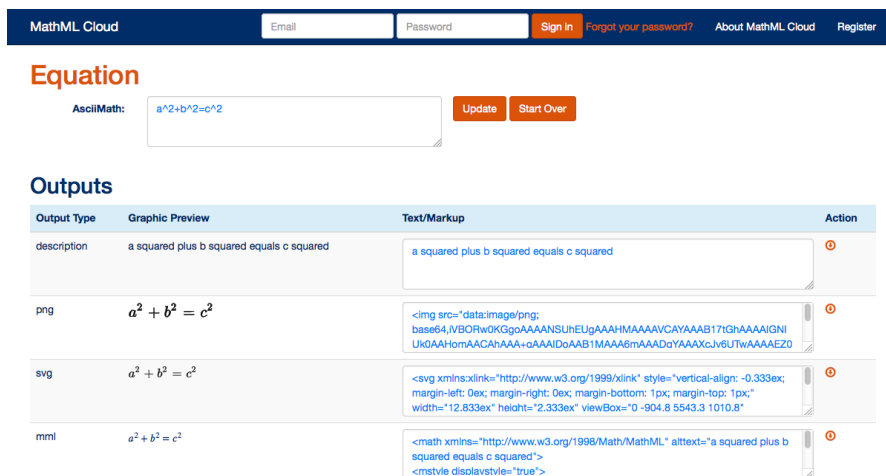
Method 1 - Use MathType to Create MathML in Word

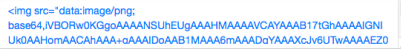

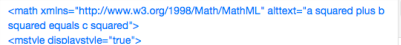


One of the best tools for creating accessible math is the [MathType Equation Editor](#) by Design Science. MathType creates MathML, which can be read intelligently by screen readers, allowing users to either read the whole equation, or pause and zoom in on parts of the equation to read them separately. MathType is not free. At the time this was written, it cost \$97 for a license (\$57 with education discount), but it is the most complete solution currently available.

Method 2 - Use MathML Cloud to Create a PNG Image with Good Alt Text

If you don't have access to MathType, you could use [MathML Cloud](#) to generate an equation as a PNG image with good alt text, and insert the image in your Word document. You will need to insert the image then add the alt text yourself (in Word 2013: right-click on the image > Format Picture > Layout & Properties > Alt Text). MathML Cloud generates intelligent alt text that works well for math equations, using words and phrasing that you might not consider if you were writing the alt text yourself. Generally, we recommend that you not edit the alt text generated by MathML Cloud unless you are sure you can improve it for a specific equation.

A screenshot of the MathML Cloud website. At the top, there is a navigation bar with 'MathML Cloud', a search bar, and links for 'Sign In', 'Forgot your password?', 'About MathML Cloud', and 'Register'. Below the navigation bar, the main content area is titled 'Equation'. It features an 'AsciiMath' input field containing the equation 'a^2+b^2=c^2', with 'Update' and 'Start Over' buttons to its right. Underneath, there is an 'Outputs' section with a table showing different output types and their corresponding text/markup.

Output Type	Graphic Preview	Text/Markup	Action
description	a squared plus b squared equals c squared	a squared plus b squared equals c squared	
png	$a^2 + b^2 = c^2$		
svg	$a^2 + b^2 = c^2$		
mml	$a^2 + b^2 = c^2$		

There are two main disadvantages of using this method:

- You have to write the equation in ASCII text, MathML, or LaTeX. If you're not familiar with writing math using those methods, you'll have to learn.
- Even good math alt text is not as effective as MathML, because users navigate math equations written as alt text in the same way they can navigate math equations in MathML.

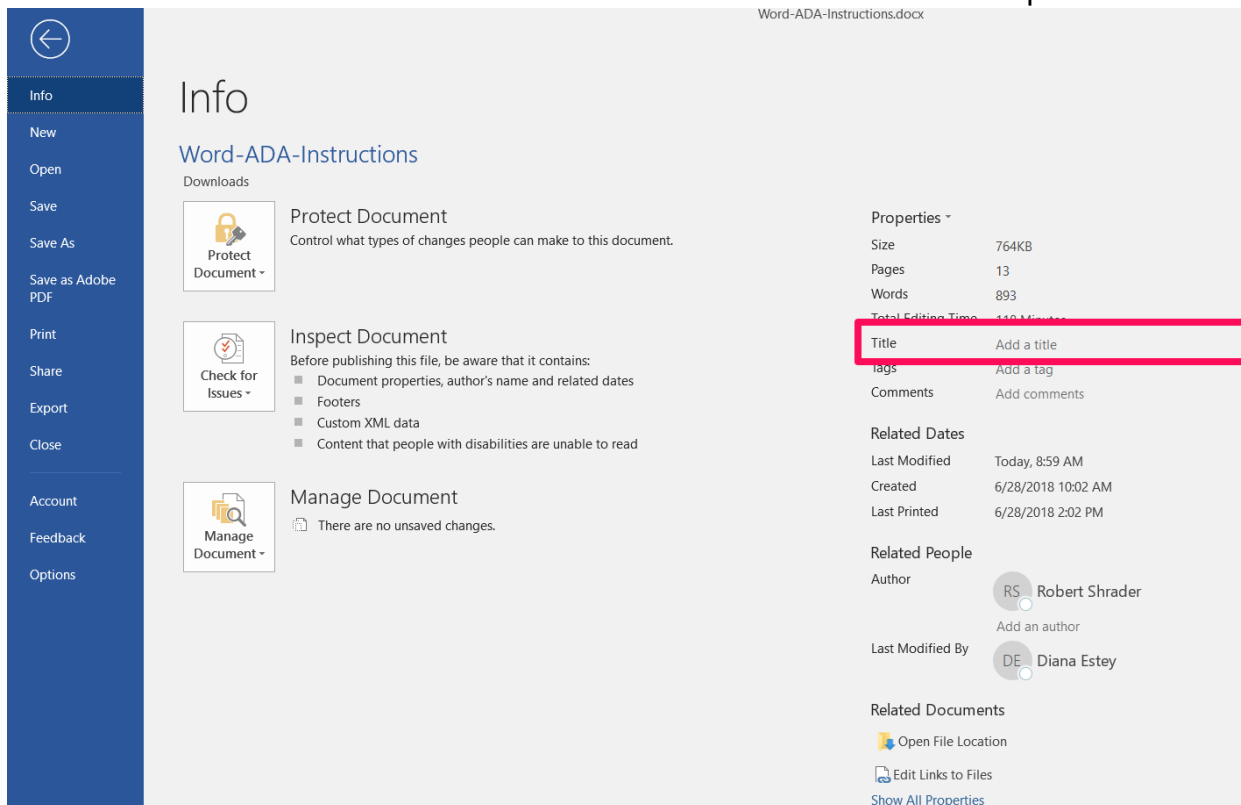
Even with these disadvantages, an image with good alt text is better than the built-in Equation Editor.

Structural Elements

Document Title

Set the document title in all Microsoft Word documents.

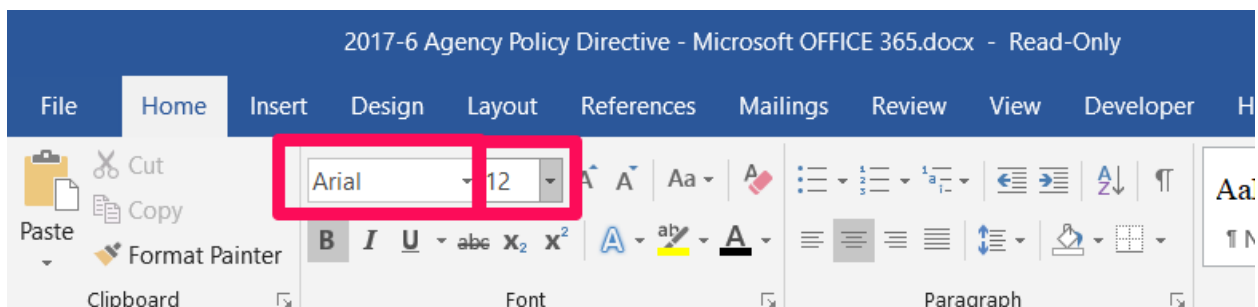
File > Title. This title should describe the document in as few words as possible



Styles (Headings and Font)

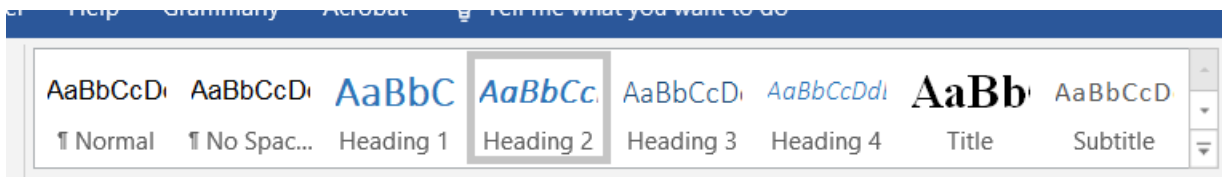
The font styles **Arial** and **Verdana** are the most commonly recommended due to both their readability and availability across a variety of computer operating systems. Generally, sans-serif fonts work best as screens with low resolution make serif fonts more difficult to read.

No matter whether you choose Arial or Verdana, a minimum standard font size is 12 pixels.



Headings

Use Word Styles to create real headings. Do not use Big Bold Text as it does not count and is not read out to screen readers with any emphasis.



Verify that the Headings Show in the Navigation Pane

(Document Map Sidebar) To check your work and make sure your headings create a good, logical outline of the content, verify that all of the headings show in the headings list in the Navigation Pane.

Press CTRL _ F on the keyboard to open the Navigation Pane.

Introduce Acronyms and Spell out Abbreviations

Providing an explanation of acronyms and abbreviations in the document might help people who:

- have difficulty decoding words
- use screen readers
- have limited memory
- have difficulty using context to aid understanding

Page Numbers Provide Structural Context

Numbering the pages of your document helps those reading and editing your document effectively navigate and reference its content. For users of assistive technologies, it provides a valuable point of reference within the document. But remember to place the word page in front of the number so it has meaning. The page number by itself is meaningless.

Wrapping Text

When adding an image or graphic always set the wrapping style to “image or object not inline”. Text that wraps around an image or graphic often will confuse a screen reader, making it difficult for the user to understand.

In Word 2007 and later right-click the image and select **Text Wrapping**, then choose **inline with text**. In later versions, right-click the image and select **edit alt text**.

Long Descriptions

Sometimes you need to use complex image like pie charts or bar graphs. Most types of objects in Word allow writers to add alt text, but alt text is generally meant to be short. Plus, if the chart or graph is inserted as an object in Word's drawing layer, instead of in the natural flow of the text, some users won't be able to access the alt text anyway, or they may not know how to access the alt text.

There are several creative ways to provide long descriptive alternate text for complex graphics and objects.

- Describe the complex image in text below the image.
- Add a text link below the image to a textual description in an appendix.
- Provide an equivalent data table below the image.

Watermarks & Backgrounds

The basic accessibility principles for background images and watermarks are:

- Don't use background images or watermarks to convey information, because there is no way to provide alt text for background images (unless you also describe the background in the regular text of the document).
- Avoid watermarks that interfere with the readability of the text. If you have to indicate a DRAFT use the words in the title of the document instead of a watermark.

Shapes & Smart Art

The "Shapes" tool in Word (Insert > Shapes) can be an easy way to superimpose illustrations and shapes on top of the text in the document. You can draw arrows, diagrams, and create simple artwork. This may be great for document authors, but it's not so great for screen reader users because all of the content is [floating in the drawing layer](#), making it inaccessible to many screen readers.

The Smart Art tool in Word can be used to create diagrams, flow charts, illustrations, hierarchical organization charts, and other similar types of diagrams. It's a useful tool for simple drawings.

Unfortunately, Smart Art is not directly accessible to screen reader users. The object would not be read when the user reads the document top to bottom. Therefore, it is not recommended to use Smart Art.

If you want to use objects made as Smart Art, you can either describe the Smart Art in the context of the text or convert the shapes to a single graphic and add alt text. The easiest way to convert them into a single image is to use the Snipping Tool that is included with Windows 7 and Windows 8 operating systems. You can perform a search in Windows for "Snipping Tool" to find the Snipping Tool.

REMINDER: All Floating Objects Decrease Accessibility

Some types of objects (text boxes, word art, etc.) in Word are not part of the document's normal structure. They are on a separate "Drawing Layer" in Word that is unavailable to screen readers in the normal document flow. Text wrap also moves objects out of the text layer into the drawing layer.

JAWS users can use Control + Shift + O to access a list of floating objects, and JAWS 16 can read floating objects at their "anchor" or insertion point, but when the objects are out of the normal flow, they may not make sense out of context. It may not be apparent where in the document these objects belong, making it difficult for users to understand the meaning of the document and/or the floating objects.

NVDA currently does not read objects in the drawing layer. It only reads inline objects in the text layer.

Examples of objects that may be floating in the Drawing Layer:

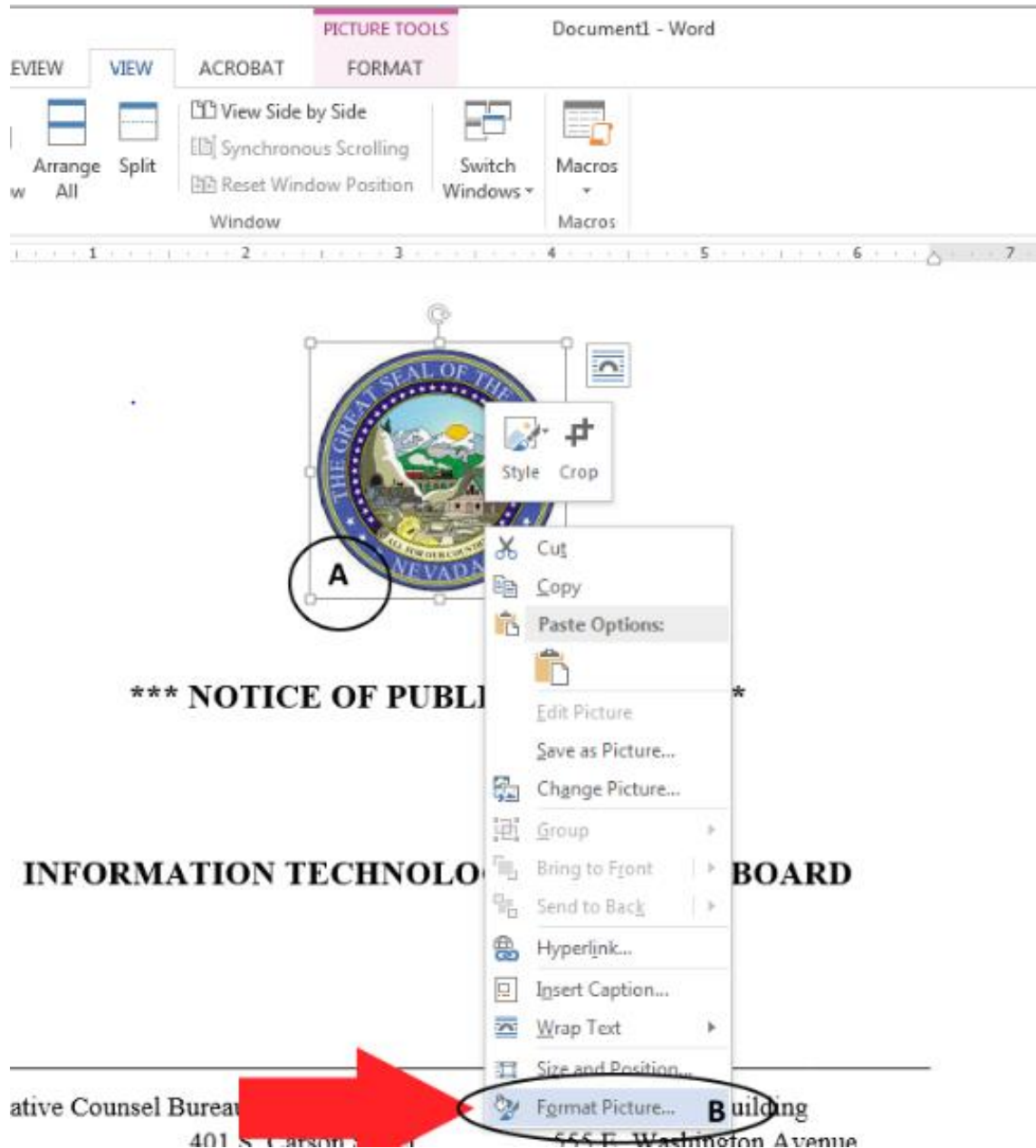
- Text boxes (Insert > Text Box)
- "Shapes" (Insert > Shapes)
- Smart Art (Insert > SmartArt)
- Charts (Insert > Chart)
- Word Art (Insert > WordArt)
- Miscellaneous objects (Insert > Object)

Inline Objects Are More Easily Accessible

Alternative Text

[Alternative text](#) should be provided with all visual content: images, pictures and clip art.

- A. Right-click on photo.
- B. Select "Format Picture".



Adding ALT Text cont.

Adding ALT text to each image in your document will give a description of your image and give a non-sighted user and better understanding of your document.

- A. Select the "layout properties".
- B. Select "ALT Text".
- C. Add a title to the image.
- D. Give a description of the image.

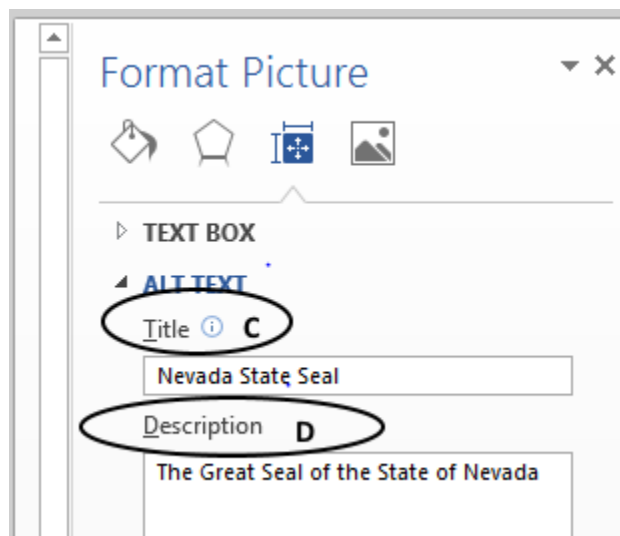
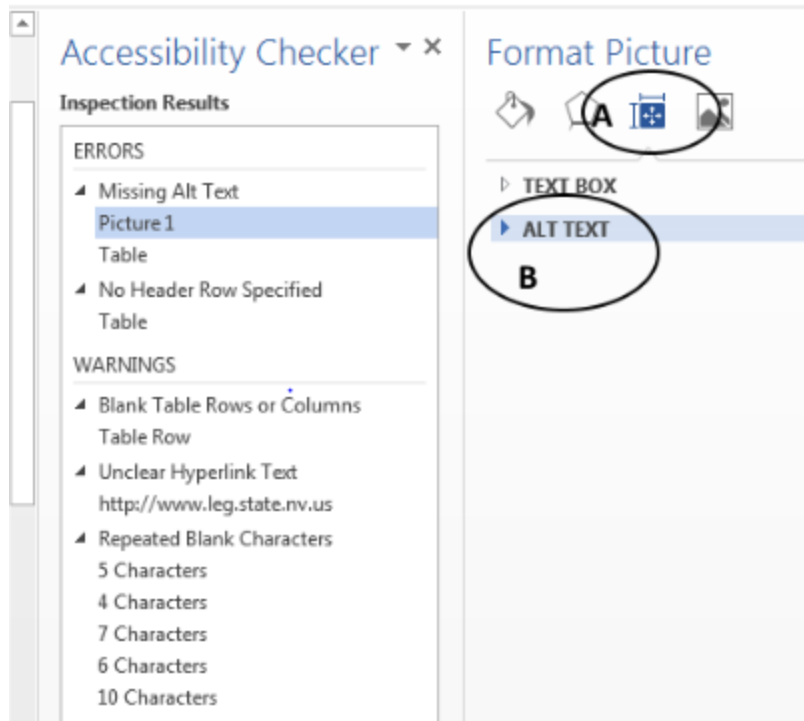
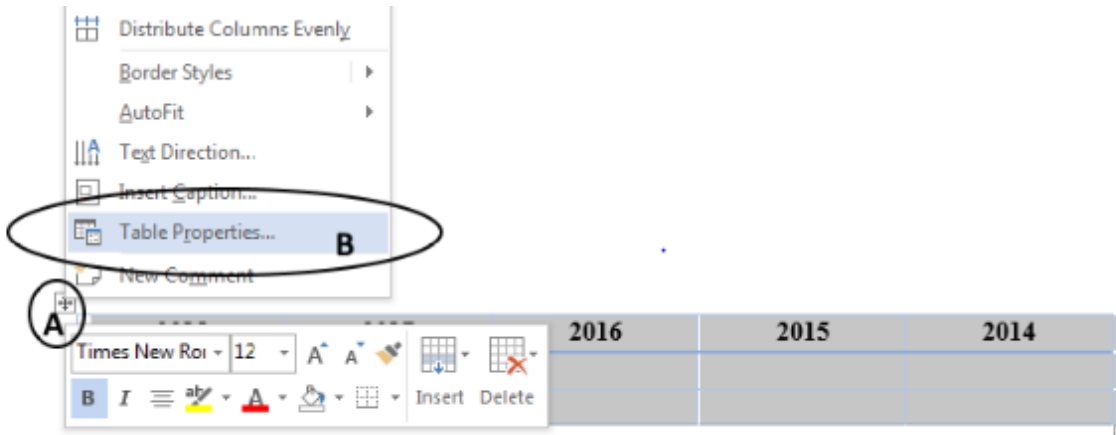


Table Structure

Tables need ALT Text to give it a description. Tables must also be structured with a specified column header.

- A. Right-click on the “Table options”.
- B. Select “Table Options”.



Adding ALT text to Tables

Adding ALT text to each image in your document will give a description of your image and give a non-sighted user and better understanding of your document.

- A. Select the “ALT text” tab.
- B. Enter a descriptive title.
- C. Give the table a brief description.
- D. Select “OK” to save the changes.

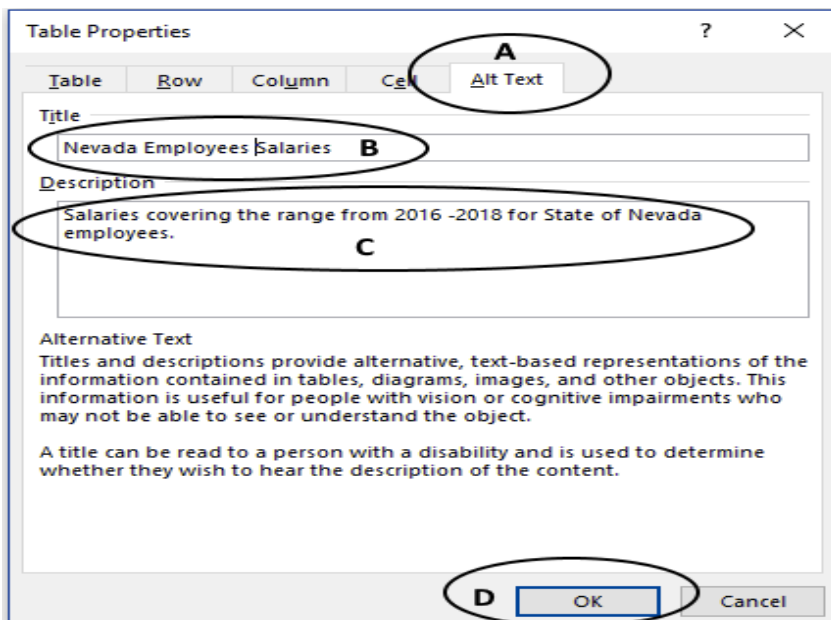
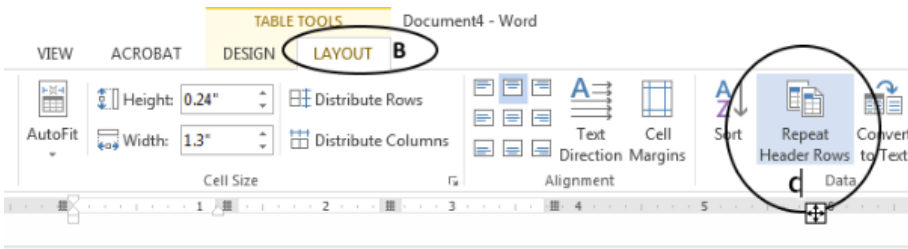


Table Header

A Table requires a column header to identify the structure of a table for screen reader technologies.

- A. Highlight the row or column of cells that you designate to be the header.
- B. Select the “Layout” tab.
- C. Select “Repeat Header Rows”.



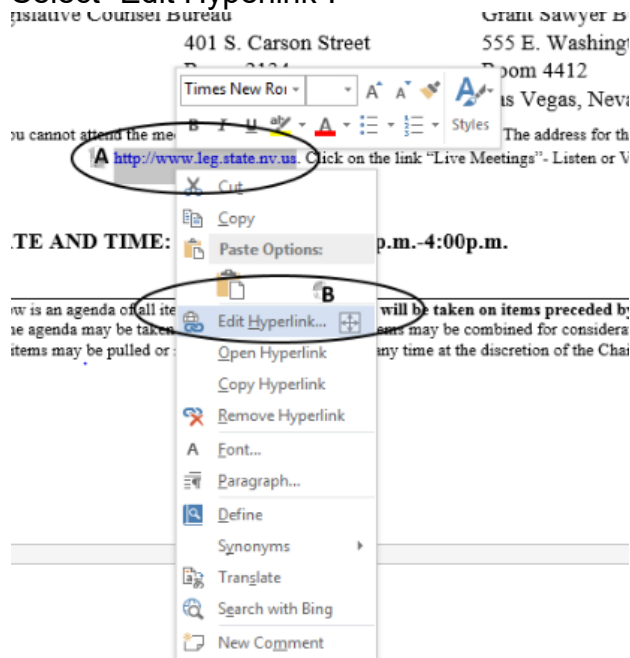
A		
2016	2017	2017
Row 1		
Row 2		
Row 3		

Hyperlink Text

Hyperlink text should provide a clear description of the link destination. One of the ways a person who uses Assistive Technologies can navigate a document is by skipping from hyperlink to hyperlink, or they can also pull up a list of all the links in a document (Insert + F7). Since both of these methods of navigation do not include any of the surrounding text, the hyperlink text by itself needs to provide sufficient meaning.

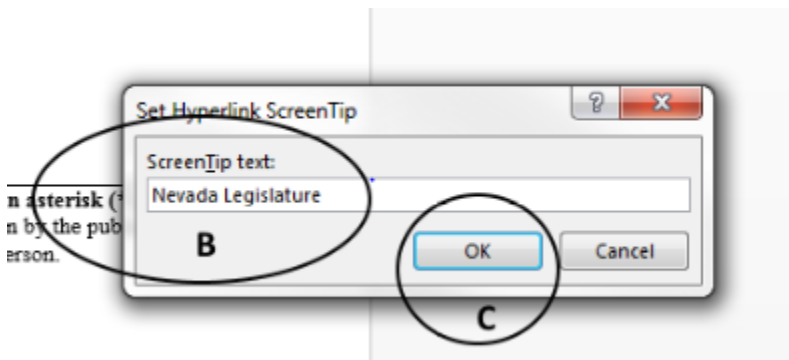
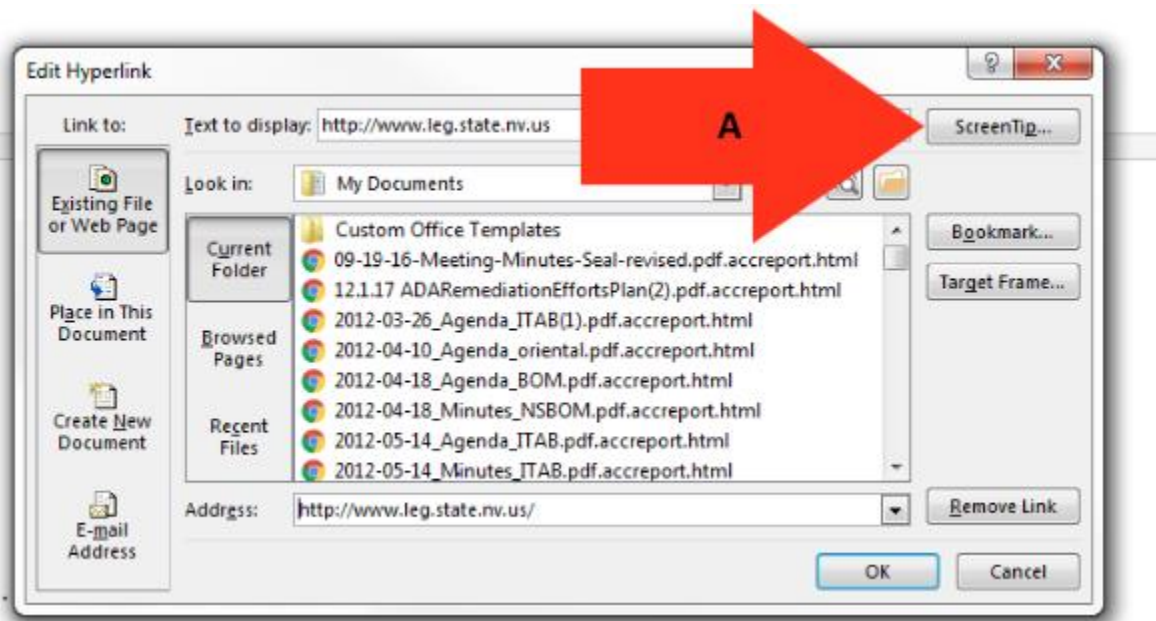
For this reason, using phrases like, ‘Click Here’, or ‘Visit’ are not sufficient as they by themselves do not provide enough meaning.

- A. Right-click on “Hyperlink”.
- B. Select “Edit Hyperlink”.



Hyperlink Text cont.

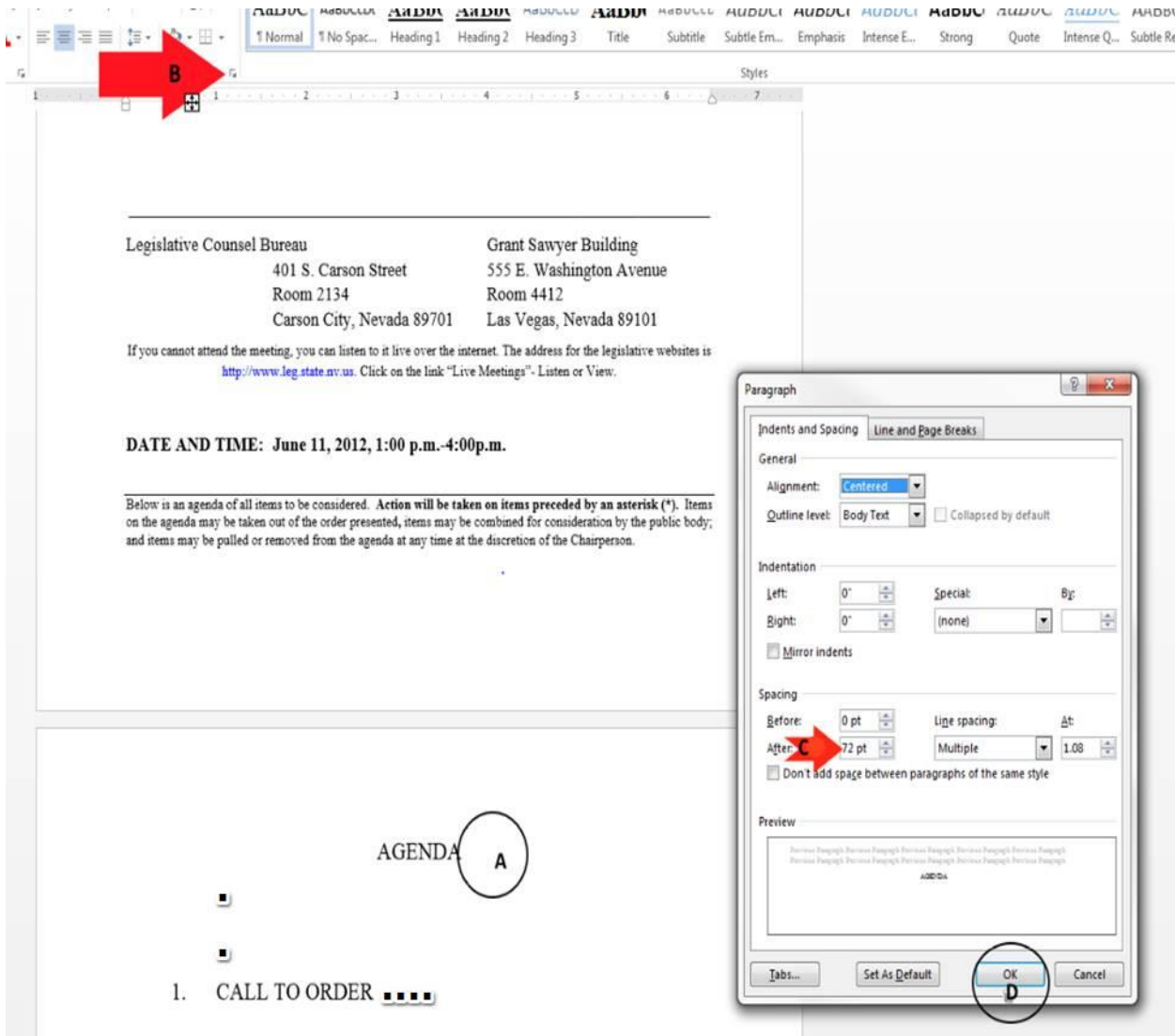
- A. Select the “screenTip” tab.
- B. Give the Hyperlink a description.
- C. Select “OK” in the “Set Hyperlink ScreenTip” dialog box and again in the “Edit Hyperlink” dialog box to save changes.



Repeated Blank Characters

One of the most common errors that you will encounter in a word document is repeated blank characters. To fix this issue, follow these steps.

- A. Place the cursor at the end of the sentence or paragraph.
- B. Select this “Icon” and it will open paragraph settings.
- C. Add the spacing that is preferred for your document.
- D. Click “OK” to save your changes.



The screenshot shows a Microsoft Word document with a paragraph of text. The paragraph is centered and contains the following text:

Legislative Counsel Bureau Grant Sawyer Building
401 S. Carson Street 555 E. Washington Avenue
Room 2134 Room 4412
Carson City, Nevada 89701 Las Vegas, Nevada 89101

If you cannot attend the meeting, you can listen to it live over the internet. The address for the legislative websites is <http://www.leg.state.nv.us>. Click on the link "Live Meetings". Listen or View.

DATE AND TIME: June 11, 2012, 1:00 p.m.-4:00p.m.

Below is an agenda of all items to be considered. Action will be taken on items preceded by an asterisk (*). Items on the agenda may be taken out of the order presented, items may be combined for consideration by the public body, and items may be pulled or removed from the agenda at any time at the discretion of the Chairperson.

AGENDA **A**

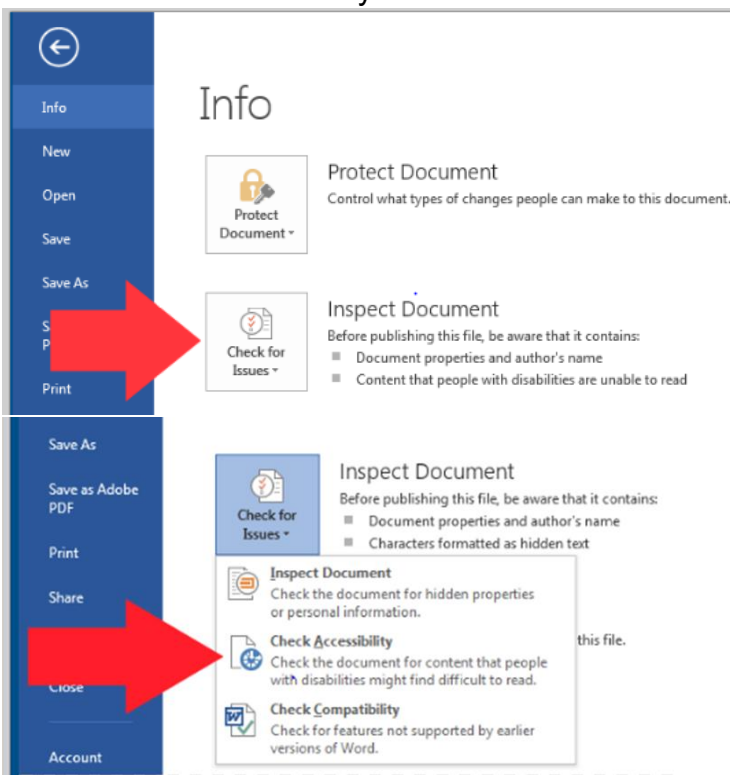
1. CALL TO ORDER **.....**

The Paragraph dialog box is open, showing the 'Line and Page Breaks' tab. The 'After' spacing field is set to 72 pt. The 'OK' button is circled.

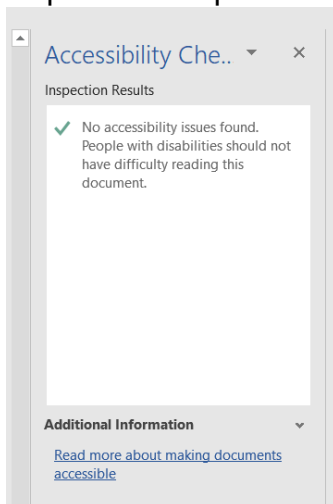
Re-Check for Issues

All documents should be re-checked for ADA compliance every time information is added or removed. All errors will be listed for remediation.

1. Click on check for issues.
2. Select "check accessibility".



3. Repeat the steps in this procedure until there are no accessibility issues reported.

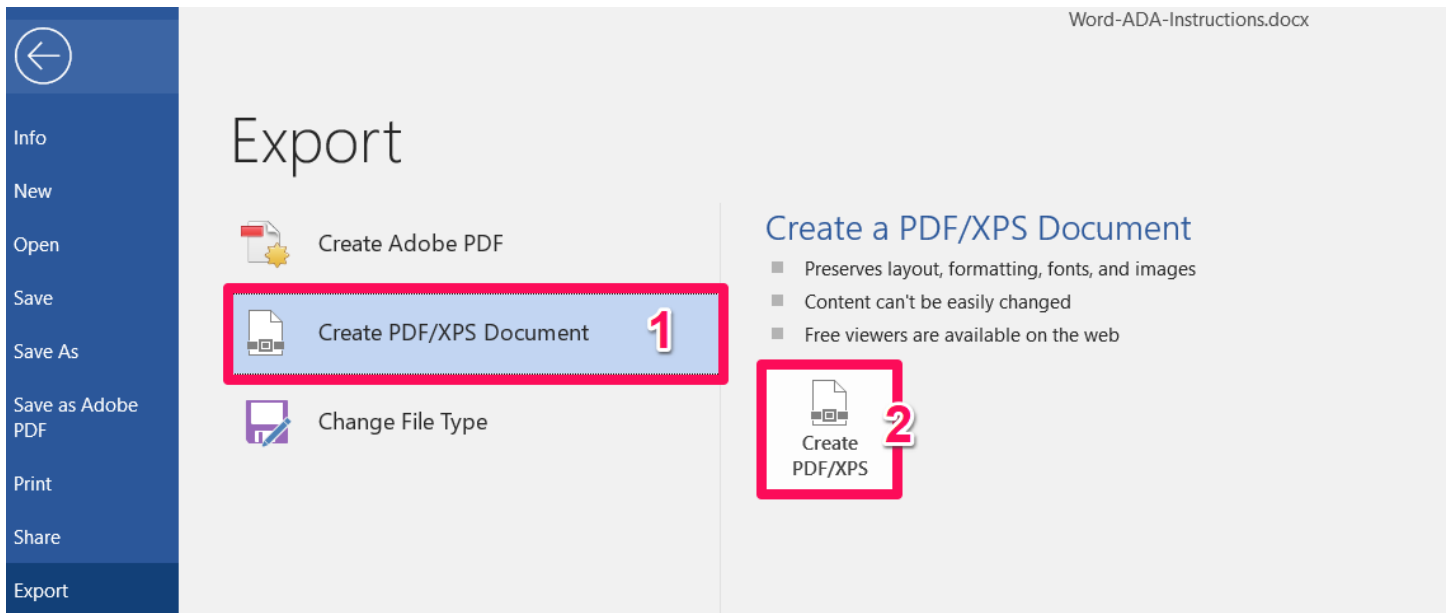


Exporting the Word document to PDF

Ensure the document is accessibility issue free before exporting to PDF.

Go to the:

File Menu > select Export > select Create PDF/XPS Document, then select > Create PDF/XPS



Additional Resources

If your word document needs to include any of the following elements, please refer to the guide below:

Document Headers

If creating letterhead or a document that needs a document header refer to [Creating Document Headers guide](#)

Contrast-Ratio (Use Color Appropriately)

If you need to check contrast-ratio in the document refer to [Word Documents – Use Color Appropriately guide](#)

Tables of Contents

If you need to add a table of contents refer to [Microsoft Word Accessible Table of Contents](#)