



WEBSITE ACCESSIBILITY

EVERYTHING YOU NEED TO KNOW ABOUT READABLE PDF FILES

PROSAR WHITEPAPER

Website Accessibility:

Everything You Need to Know About Readable PDF Files

Making accessible PDF files allows anybody who uses screen readers and/or keyboard navigation to properly interact with your PDFs. This whitepaper will explain how you can create accessible PDF files, and how to revise your existing PDF files that are not compliant.

This whitepaper is meant to be an instructional manual and a reference guide. The headings in each section are written in the order of what steps you need to take, but are descriptive enough for you to jump around to the sections you need. We've broken it up into three major sections:

1. Preparing the file to generate an accessible PDF
2. Revising a pre-existing PDF where you don't have access to the file used to create the PDF
3. Uploading and linking the PDFs on your website.



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About PROSAR:

PROSAR Inbound Inc. is an experienced marketing agency with a comprehensive service list. We provide experienced strategic guidance, marketing, content development and creative design; and have developed a proven expertise in branding building and developing your online presence.





Prepping the Native File

Native file refers to the original document used to make the PDF file. A Microsoft Word document can be a native file, as can an Adobe InDesign file. It is much easier to make accessible documents by building accessibility into the native file and then converting it into a PDF file, instead of trying to add in accessibility features after the PDF file has been made.

Specifically, we recommend that you create files in:

- Microsoft Word, PowerPoint, and Excel
- Adobe InDesign

For native files, the majority of the instructions will be for Microsoft Word and PowerPoint unless otherwise noted. For revising pre-existing PDF files, the instructions will focus exclusively on Adobe Acrobat Pro and are covered in the Revising PDF Files section.

EVALUATE FOR SCANNING

The first step is to ensure that the document isn't a scan of a pre-existing piece of information, or doesn't contain scans for complicated tables. You can tell a scan by:

- Fuzzy pixilation for graphics/text
- It's treated as an image instead of individual components (not able to edit text, tables can't be tabbed through)

If it is a scan, then the amount of work involved is greater. A scanned image will be treated as a singular image instead of individual components. As a result, the entirety of the scanned image will need to be entered as alt text (see Formatting Images later in this whitepaper). Alt text, short for alternative text, is a typed-out version of the information presented within an image. To be AODA compliant, all information presented in a graphic must be typed into alt text.

It's always best to insert a graphic or table in its native form (by copy/pasting the original component) so screen readers can read it.

Rather than scanning an entire document to capture a small amount of information (i.e.- a signature) consider cropping the relevant portion and inserting it into the document instead of using the entirety of the scanned image. By only having a single figure inserted into the native file, you don't have to rewrite the entirety of the document in alt text.

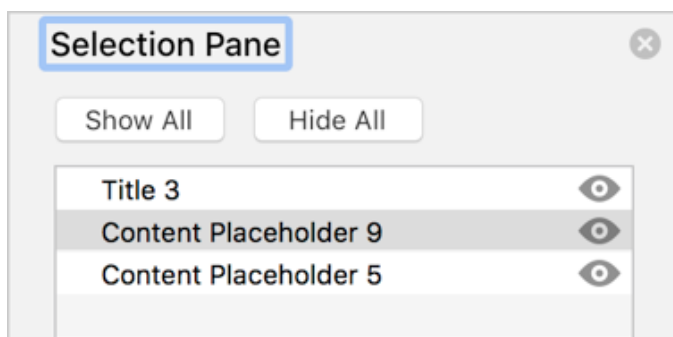
If a scan of a detailed component must be used, read the figure in question to determine what is important to get across. To learn how to add alt text, see down to Formatting Images below.

For documents made in Adobe , a possibility if your PDFs are over a few years old, designers will often turn text into an outline, so it can be printed without sending a font along with the file. When text is turned into an outline, it effectively becomes part of the illustration and cannot be read by screen reading software. While it is possible to salvage the information that has been made an outline (see the "Revising PDF Files" section, Reading Order: Changing Element Types), it is more efficient to create two versions of the file: a print version (with the text turned to outlines) and a web version (with text as text). For creating new PDFs, we only recommend InDesign as that is the software with accessibility tools in the Adobe suite.

To avoid any problems with formatting, make sure you clearly communicate your needs to your designer.

GENERATING PROPER READING ORDER

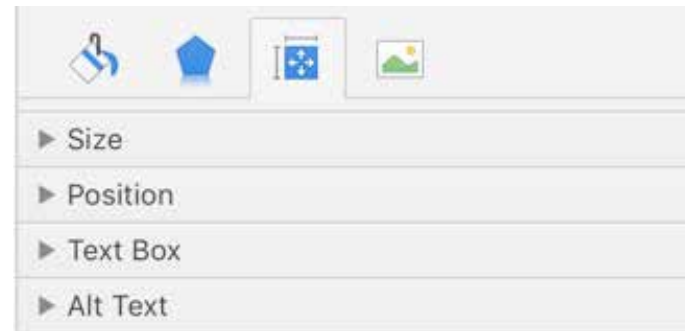
Screen readers read things out based on a list of items on the page, in numerical order. In the figure to the left, Title 3 would be read first, followed by Content Placeholder 9, then Content Placeholder 5. To make sure the items are read in the correct order, it's best to create all background images first and place text on top. You should add text in the order you want it to be read, meaning the title of the document should be first and all body text should be added in under the appropriate heading (instead of inserting all the headings first, then adding body text later). This will make it easier for listeners to understand the content because the headings and body text will be clumped together.



However, it is possible to change reading order in the native file by going to the Selection Pane menu (under Picture Format) and changing the reading order manually. You can drag and drop elements to be in logical reading order. It's simply an extra step in the file preparing process.

FORMATTING IMAGES

AODA guidelines dictate that all information presented graphically must be communicated in a readable format, either in the text of the document or as alt text. For tips on how to write it, look at my blog post [How to Write Alt Text](#). Alt text can be as simple as stating an image is the company logo, or as detailed as describing the results of a graph.



When inserting an image into the file, use the "Format Picture" option. This will be in different places depending on your operating system, but a dialogue window will appear either as a pop up (PC) or a side bar (Mac). Once you've reached this window, the option to generate alt text appears. Enter in the graphic data for important images only; screen readers will skip images without alt text.

FORMATTING TEXT

Using proper style elements— title, headings, lists, tables— is critical for generating proper attribution. While you can generate the same look by simply changing font size or bolding, it won't be read by the screen reader in the way required for the information to be understood.

For headings and titles, you want to ensure that you use the proper levels of headings. Like Google, screen readers like to see order of headings from H1s (Heading 1s), followed by H2s, etc. If you have an H4 without an H3, H2, and H1 above it, the heading will be flagged as improperly done. You would need to remove the H4, or add in the appropriate headers above it.

CONVERTING THE FILE TO PDF

Converting a Word or PowerPoint file is simple, and often just involves checking off that it will primarily be for electronic use. This lets the system automatically embed more navigation features that screen readers and keyboard operation need to make the PDF fully accessible.

If you intend to use the same document for print materials and online versions, consider creating two separate PDFs for the best optimization (and be sure to differentiate their file names).

CHANGING LANGUAGE AND TITLE

The language of the PDF is automatically determined by the language of the computer, meaning it might not reflect the language of the document. To fix this, you have to open the file in Adobe Acrobat (the free version is fine), and open the “Properties” window. You can then add a title under “Description” (a descriptive title is required for compliance), and change the language under “Advanced.” If the PDF file is in a language other than the suggested languages within Adobe, you must type in the ISO 639 code for the language, not its name.

It is strongly recommended to only produce unilingual files for web accessibility use. This is because assistive technology relies on the document language setting to pronounce the words in the document.

If a bilingual file must be produced for printing, two separate versions should be saved for English and French use. These versions should have as much text from the other language removed from the reading order to allow for a better reading experience.

NOTES FOR ADOBE INDESIGN

Adobe has rigorous documentation for creating accessible files with their software products on their website, particularly for InDesign CS4, CS5, and CS6. Older versions of Adobe tools might not contain accessibility features.



[General Adobe accessibility guides](#)

[InDesign accessibility guides](#)





Revising PDF Files in Adobe Acrobat DC Pro

While it is easier to incorporate accessibility features into the native file, it is possible to modify an existing PDF file in Adobe Acrobat Pro. The only accessibility modifications you can make to a PDF file with Adobe Acrobat is changing the language and the title. While Adobe Acrobat Pro is a paid software, it is the standard for modifying PDFs.

It should be noted that this program does not work well with dual monitors. Be sure to look at the technical specifications before beginning.

PROPERTIES

The Properties window is where the title and language of the PDF file are stored. You can change the title under “Description” (a title is required for compliance), and the language under “Advanced.” This is available in both the free and paid version of Acrobat.

Languages

PDF files are often bilingual for ease of printing. However, it is strongly suggested that all PDFs be unilingual in order to have accessibility tools pronounce languages with the proper accent. Some PDF files up for revision might not be unilingual, and there isn't any access to the original file.

In these situations, we suggest saving the document in as many languages as are presented in the document, with language differentiators in the file name. This way, a primary language can be selected. If at all possible, modify the reading order to accommodate the language selected for the PDF file by deleting all text boxes that contain the other language(s) (See “Reading Order” later in this whitepaper).

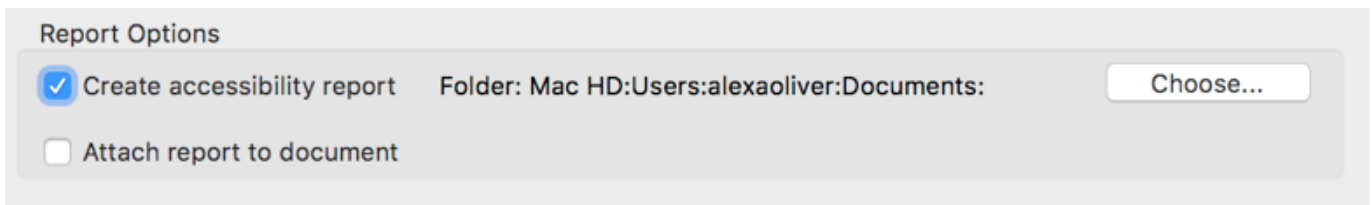
If the document is in a language not covered under Adobe's list of languages, you must enter in the ISO 639 code for the language to have it be recognized.

Accessing Accessibility Tools

Accessibility tools are not default on the sidebar of tools available in Acrobat. In order to make them available, go to “Tools,” and look for “Accessibility” under “Protect and Standardize” (it looks like a person standing with their arms out in a circle, and is coloured purple). Once you click “Open,” you’ll have them available in your sidebar for every PDF you open.

Checking Accessibility

Under the accessibility tools, you can click a button that says, “Full Check.” This opens a dialogue box that lets you set what you want to evaluate. This opens up a pop-up window with many options. One option near the top is a check box that says, “Create Accessibility Report”, and is checked by default. It will give the destination of the report (clicking “choose” will allow you to save it to a specific location, much like saving a regular file). You can also select that it’s attached to the document.



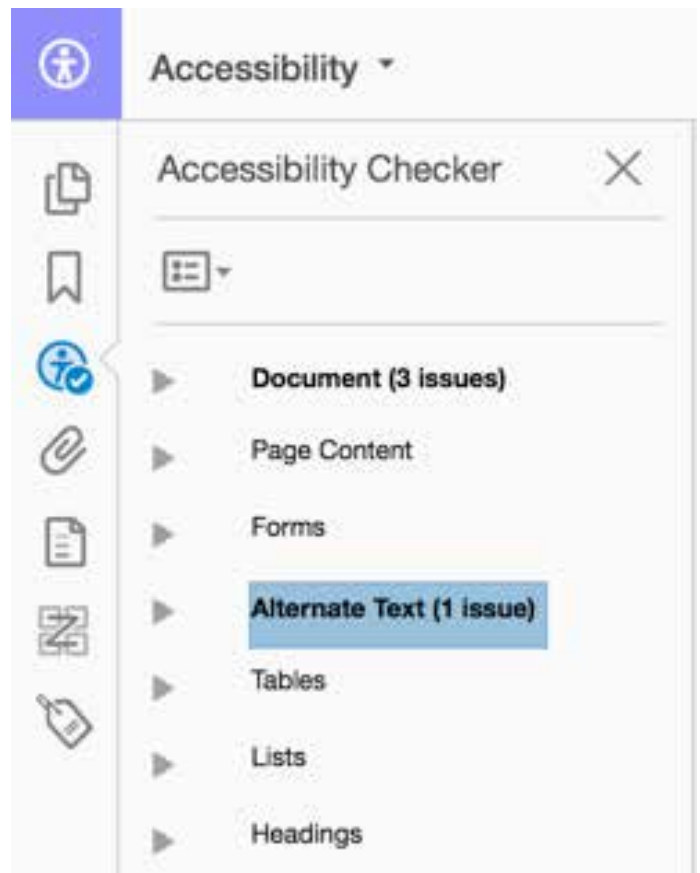
This report can be useful if you want to generate a before and after of what was done to the PDF file; it will give you a full evaluation in a separate document that shows of the state of the PDF before you began.

However, if you don’t need to provide a report, or plan on doing multiple checks as you improve the PDF, uncheck “Create Accessibility Report.” Every time you run a check a report will be created, which can result in multiple duplicates. Once you’ve determined if you’ll need a report or not, look to the bottom of the dialogue box for “Start Checking.”

Outside of the report, you can quickly access all information found within it in a new sidebar option: the “Accessibility Tools” logo with a checkmark beside it (pictured to the left). From here, you can see all the accessibility issues that still need to be addressed. It’s recommended to run this check at least twice: once at the beginning and once at the end of the process, to make sure everything is properly done.

As you can see in the image to the right, you will get a window with seven major headings: Document, Page Content, Forms, Alternate Text, Tables, Lists, and Headings. By clicking on the arrows to the left-hand side these seven items expand to reveal multiple categories. Stop signs with X’s in the centre indicate elements have failed an accessibility check and need to be addressed, while a green circle with a checkmark indicates everything under that category is fine.

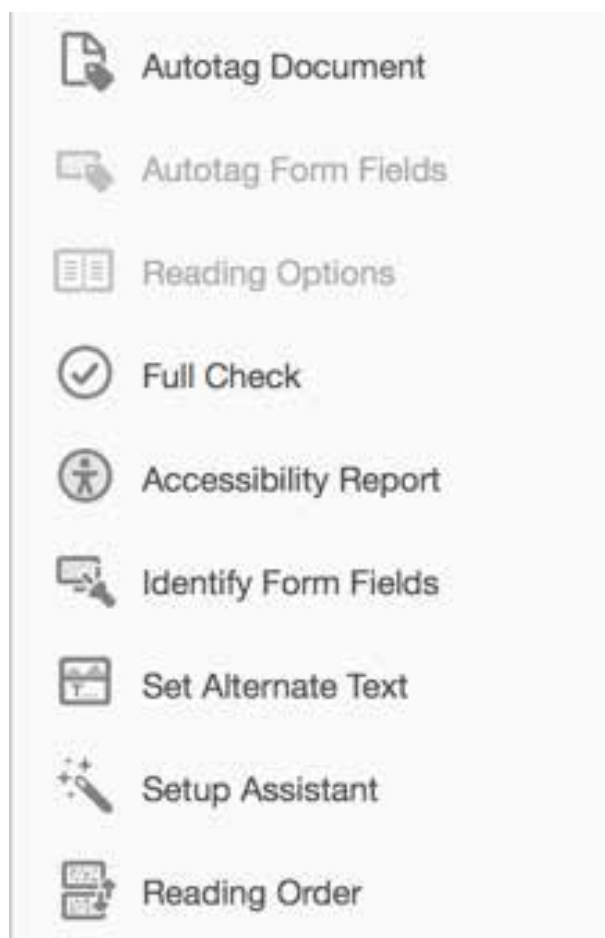
It is perfectly normal to have: three “Document Issues” (two them will have a blue question mark indicating a manual check is needed, and the title is prone to being flagged even if there is a title assigned to the PDF) and one “Alternate Text” issue. More than three indicates deeper problems.





Tagging

A large number of issues under “Full Check” usually indicates a tagging issue. Some PDFs aren’t tagged at all, or they’re tagged improperly. Click the “Autotag Document” button to generate or redo the tagging.



Do another check after you’ve (re)tagged the document to see what issues remain, if any. You want to fix any and all tagging issues before you move on to other elements, as tagging is the foundation for the PDF file being accessible.

Fixing Issues

If you are still experience tagging issues after retagging (primarily annotations and whether there are appropriate headings above it, i.e. an H2 has an H1 before it. This is known as “nesting”), click on the failed checks (marked by a stop sign with an X) to open the dropdown menu of failed checks. Click on the element to be shown where it is in the document, then right click and select “Show in content panel.” This will bring you to another list of every element present in the document, with the problem element highlighted. Right click on this element and go to “Properties.”

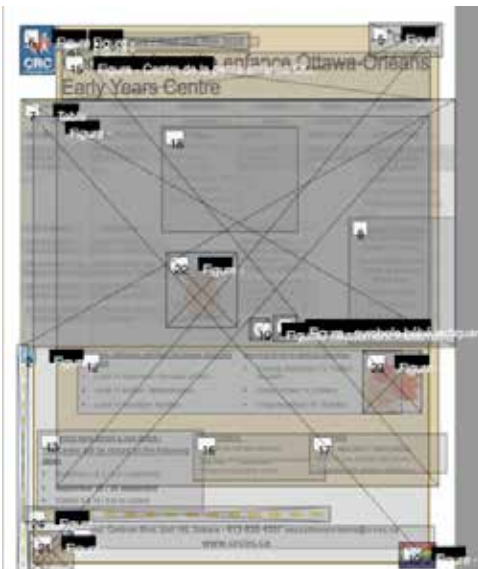
Once there, you can (usually) modify the type of tag. Periodically it happens where you cannot; usually these elements are small and/or require modification of the native files. Sometimes items get flagged for no visible reason and require deeper troubleshooting to determine the issue, usually with links. Check to ensure the links are properly functioning, and repair any broken ones.

FORMS

If the PDF includes a form, you’ll need to check that all fields are properly named and that all fields visible are included in the digital version (i.e. if you have a visual indication for the level of sponsorship people wish to donate, but no radio buttons to let people select those options with a digital form, you’ll need to add radio buttons).

This is done under the “Prepare Form” set of tools, instead of “Accessibility”. You should review the form under “Prepare Form” and make sure all fields have descriptive titles (i.e. no “undefined” form fields). It’s important to make sure that everything about the form is visible in the form fields— somebody using a screen reader will have no visual clue for what they are filling in.

Once you’ve made the form completely digitized and usable, you’ll have to re-tag the form fields. Go back to Accessibility and select “Autotag Form Fields.”



READING ORDER

It is very important to note that anything changed in the reading order via Adobe Acrobat Pro cannot be undone. Save the file before starting, and save after every change you make so that you won't need to start over if you make a mistake.

Reading order involves two tools: one on the left-hand side, marked by four squares with a Z connecting them, and one on the right-hand side under "Accessibility" marked as Reading Order. You'll primarily be using the left-hand side menu, with a few exceptions covered under Identifying, Changing, and Removing Elements. The figure below is what your screen will look like when the left hand "Reading Order" button is selected.

At times, the left-hand side reading order menu can be overwhelming, especially if the PDF contains many decorative elements that have been added to the reading order. This is why it's important to prune all unnecessary elements from the PDF before continuing.

Determining What's Necessary

All graphics that convey information relevant to understanding the content are important and must stay in the reading order. The same applies to information that is only provided in one graphic. For graphics to be considered a part of the reading order they will require alt text.

Examples of information provided in a graphic include: logos, dividing lines, organizational flags, and graphic headings that have been labeled as figures.

Identifying, Changing, and Removing Elements

To make it easier to work with the PDF, everything unnecessary should be removed. You can do this in one of two ways:

1. Deleting it from the reading order.
2. Making it a background element.

Examples of unnecessary information include: background graphics (like the owls, leaves, and background boxes of colour) and side graphics (border details that do not separate any information).

Examples of necessary information include: logos that denote inclusivity such as pride flags, symbols denoting accessibility features (day care, no smoking, scent free, wheelchair ramps), and anything that gives pertinent information (logos, maps, etc.)

Deleting is done by right-clicking the element and selecting "delete." Making something a background element involves opening the Reading Order dialogue box (from the right-hand side set of tools), selecting the element, and pressing "background."

As you're removing unnecessary elements and clearing the PDF, you might notice some elements aren't "covered" by a grey box, so to speak (possibly because it's been turned into an outline— see Prepping the Native File: Scanning at the beginning of this whitepaper). Anything not covered by a grey box will not be read by a screen reader, which leads to a problem of not all information being accessible.



To make sure that all relevant elements are accounted for in the reading order, look for a box that does not actually have anything inside of it. These blank boxes should normally be deleted, but if you need to include information that is missing from the reading order, you can use these boxes to fill in the gaps. Turn as many of these blank boxes as necessary into a Figure by opening the right-hand Reading Order tool, which will bring up a pop up window. Select the blank box and press "Figure" in the pop up window. This will convert the box into a Figure which allows you to then add alt text. In the alt text window you can attribute any missing information for that figure.

Once you've finished this step, the reading order should be much clearer and less overwhelming. Save the document at this point!

Reordering Elements

Once the PDF has been cleaned (using the steps above), the next step is to reorder the way it is read. However, be very careful with this because sometimes elements can disappear after you move them, and they will not return!

Saving after every successful move helps ensure that you will not have to restart everything if one thing disappears.

Reordering is done by dragging items within a reading order list on the left-hand side. The reading order list is set for every page that you have in your document so be sure that you start reordering the first page of your document first.

You want to make sure the reading order is done in such a way the important information is first. Sometimes the title of the document can be placed last on the reading order when it's done automatically, or all the headings are clustered together and all the text is clustered somewhere else. As a result, your first step needs to be evaluating what information needs to go first. Some tips:

- The title and company information should be first
- Accessibility and inclusion information is best kept early, as well, because people will be looking for it
- Headings are above their body text (headings are their own separate boxes when you're looking at reading order, so they could be very separate)
 - Example: the header for "activities" is #4, but the text listing the activities is #13. You want the text listing activities to be #5
- No images interrupting body text at random places
- Footer text (page numbers, document title, etc.) is last, or even omitted

Problems Reordering

Sometimes, when reordering, grey boxes will merge together. So long nothing has vanished, this is alright. If the grey boxes within your document merging causes something to disappear, restore back to the previous version. This vanishing is permanent, and you cannot undo this action.

Once you've restored to a previous version, check to see if your headings have been labeled as such. Click the "Structure Type" icon in the reading order to attribute proper levels of headings. Make sure that the title featured at the top of your document is marked as Heading 1 (H1) and that sub headers are marked as Heading 2's. This will ensure correct heading nesting.

If you have multiple headings over background elements, such as a white-reverse heading on a dark background, they are more prone to vanishing. Body text (i.e. black on white) is less likely to vanish. If the headings and body text aren't next to each other (say the heading is 5th in the reading order, but the corresponding text that's visually under it is 13th in the reading order), you'll have to move one in order to have a logical sequence. It is much safer to move the body text to be 6th than it is to move the heading to be 12th.

Sometimes the best you can do with elements is to have them properly clustered together, even if the reading order isn't exactly perfect. This is not uncommon, and so long as elements are well clustered, it's going to make sense to a screen reader.

ALT TEXT

It's important to go through reading order before you begin writing alt text. You'll likely delete a lot of images when you go through the reading order of the document; there's no sense in writing alt text for images that don't provide valuable information or assist in someone understanding the content.

When you do a full check of text, you'll notice possible fail points: "Figures alternate text" and "Other elements alternate text." A PDF file can have issues with both, but it will primarily have issues with the "Figures alternate text" field. We'll show you how to fix both.

Figures alternate text

These are the images picked up by the Set Alternate Text tool in the right-hand side menu, and are the obvious "images" of the file. Clicking that button will generate a small dialogue window that lets you fill in the alt text for these images. It will list images in the same order as they appear in the reading order.

We recommend you leave the PDF set to the reading order view (which will have grey numbered boxes) so you can match up the number on the Set Alternate Text window to the corresponding number in the reading order.

This is especially important if the document has multiple pages. The Set Alternate Text tool highlights the image it's captioning when the tool is used by itself (the blue shading in the second image). This highlight isn't always there, making it you don't know what exactly you're captioning. By beginning captioning with the Reading Order view, the numbers of each will let you know what you are captioning.

As you can see in the figure above, the Reading Order is located to the left and the Alternate Text is the box to the right. While this view is the most effective in setting alt text for multiple pages because you can follow along with the images that you're captioning, much of the text in the image becomes obscured by the numbered boxes and the "Figure" caption

Even if some images are hard to make out, you can save time by typing out the parts you can see in the Set Alternate Text window. When you return to the Set Alternate Text window in normal view, the text you entered in before will let you know what item you're captioning, allowing you to fill in the rest of the missing text. The figure below shows how setting alternate text looks without Reading Order selected.

For tips on how to write alt text, see my blog post [How to Write Alt Text](#). The principles for alt text writing apply across all platforms, from PDF files to websites.

Click "Save and Close" (in blue) to save progress and close the window. Simply clicking "Cancel" will erase all alt text written, without any warning asking if you would like to cancel.

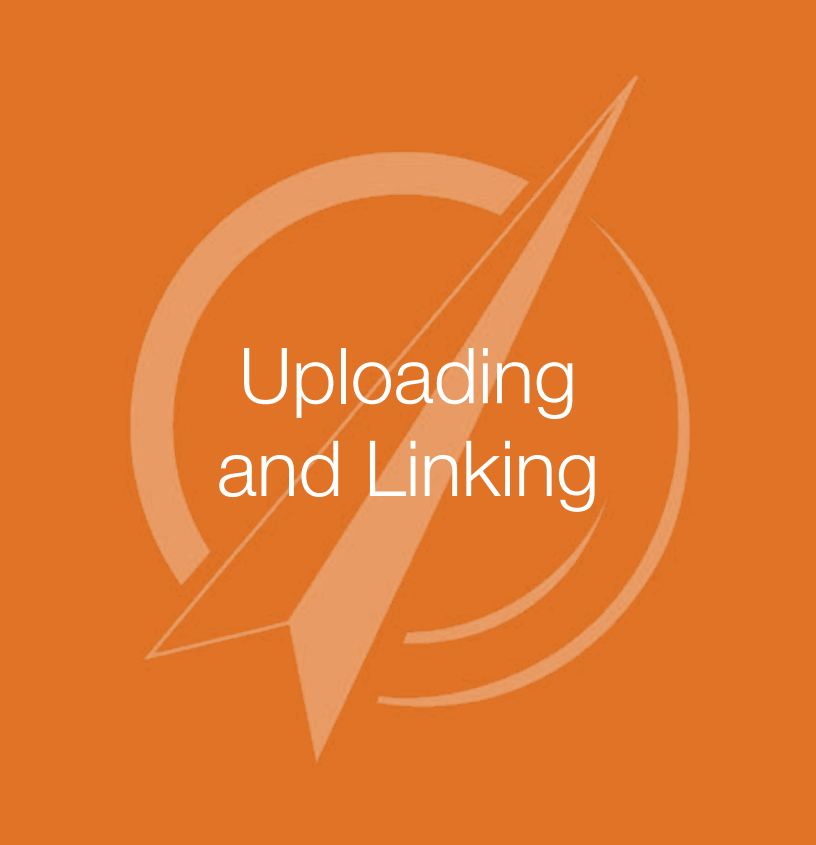
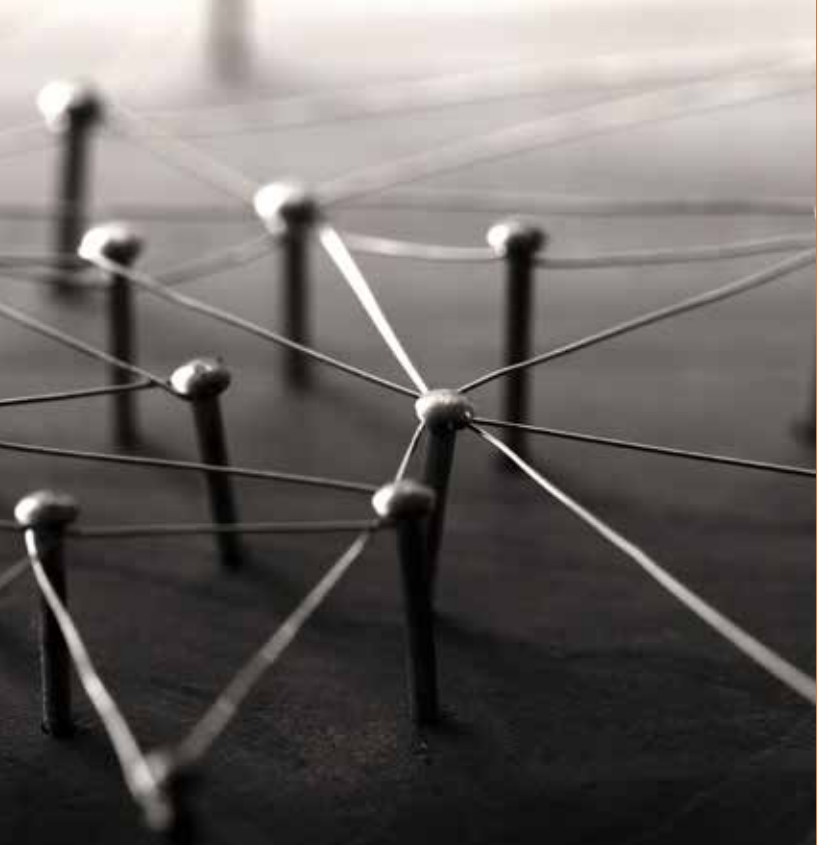
Other Elements

Under Full Check you possibly discovered that "other elements" were missing alt text. These will not be picked up by the Set Alternate Text tool and must be done manually.

Select the failed elements to reveal the problem elements, much like you did to find mis-tagged elements. Right click on the element and select "show in content panel." Once there, right click the element and select "Properties." Now, you'll be able to write alt text for the element.

You may come across elements that can't be found in content panel. Fixing this issue requires access to the original file so you know what was done.





Uploading and Linking

Once you've gone through these steps, you can upload or re-upload the files, and link (or re-link) them on your website. Anyone who downloads them will have access to the new features.

If you use a WordPress site, you can easily re-link all PDF files by having your web developer do a mass replace of all PDF upload links, so long as the file name is the same. You can look into plugins that allow you to replace linked files in your library, which may or may not require the same file name to work.

We strongly recommend keeping your file names the same whenever possible to cut down on the amount of manual work involved. This might not be possible if you had to change file names for multilingual documents. Still, a database find and replace can handle the bulk of the PDF files, cutting down on the manual work.

In order to replace the files manually, search through your website for all locations where PDF files are linked (usually, the file itself will say where it has been linked and following that it will provide you with a map). You can then re-link it with the updated files. If you use WordPress, this can be as easy as changing the upload year and month under the "Text (HTML)" view

```
/wp-content/uploads/2016/06/
```

If the file name has been changed, then you can either change the file name from this view or you can re-link the files via media upload.

Once all files have been re-linked, you should delete the old ones to avoid confusion and purge your database

WEBSITE ACCESSIBILITY

EVERYTHING YOU NEED TO KNOW
ABOUT READABLE PDF FILES

SOURCES

[Adobe Accessibility](#)

[Microsoft PowerPoint Accessibility](#)

[Microsoft Word Accessibility](#)

[PDF Techniques for WCAG 2.0](#)

[Setting the default language of PDFs](#)

[Ten common PDF accessibility errors with solutions by the
University of Ottawa](#)

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About the author - Alexa Oliver

Alexa Oliver is a content strategist, storyteller and member of the PROSAR team since 2015. She's been writing fiction for over ten years, and lends her drive for creating a compelling narrative for brands. Diagnosed with dysgraphia at age 9, she has been involved in various accessibility circles since her teens to make sure everyone can enjoy what they love.