



Making Accessible PDF Tables - Part 1 - Things to consider before you begin.

*Presented by the Civil Rights Office of the Texas
Health and Human Services Commission*

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Introduction

PDF is the de facto standard for sharing documents on the web. But, generally, we don’t create documents directly in Adobe Acrobat Professional. Instead, we create our documents in Word or Excel. Once you know how to create an accessible document using Word or Excel, converting the document to an accessible PDF will be very easy. In this module we’ll focus on creating tables in Word that will have all of the fundamental elements that enable anyone to read them after the document has been converted to PDF.

Before the foundation is poured for any house or building some planning needs to take place. Likewise, before any document is created, the document and its content items should be well thought out before publishing a PDF to the web or attached to an email. Tables are one of those elements that may require a little extra effort and planning to make them readable by everyone.

Things to CONSIDER when working with tables

As tools for presenting information, tables are intended to show how the items in them are related to one another. In other words, the way we arrange the information in a table is significant. The arrangement shows the structure of the information.

When a table is used this way, we call it a “data table.” If you consider these points when you add a data table to your document, the appearance of your table will clearly show the structure of the information in it.

Start with solid headers

The foundation of table design is the proper use of header rows and header columns. A header cell contains a label that “describes” the data to be found in its respective row or column.

If all the data in each column share a property, use that property in the top cell to label the items in that column. Each of these cells will serve as a column header:

Header	Header	Header	Header
Data	Data	Data	Data
Data	Data	Data	Data
Data	Data	Data	Data

When a table has column headers, each item will belong in only one column, but it doesn’t necessarily matter which row it is in.

If the data in each row share a common property, use that property in the first cell in each row to label the items in that row. Each of these cells will serve as a row header:

Header	Data	Data	Data
Header	Data	Data	Data
Header	Data	Data	Data
Header	Data	Data	Data

When a table has row headers, each item will belong in only one row, but it doesn’t necessarily matter which column it is in.

Sometimes a table calls for column headers as well as row headers:

Header	Header	Header	Header
Header	Data	Data	Data
Header	Data	Data	Data
Header	Data	Data	Data

In such a table, each cell is unique. The item in it is labeled by both the column header and the row header.

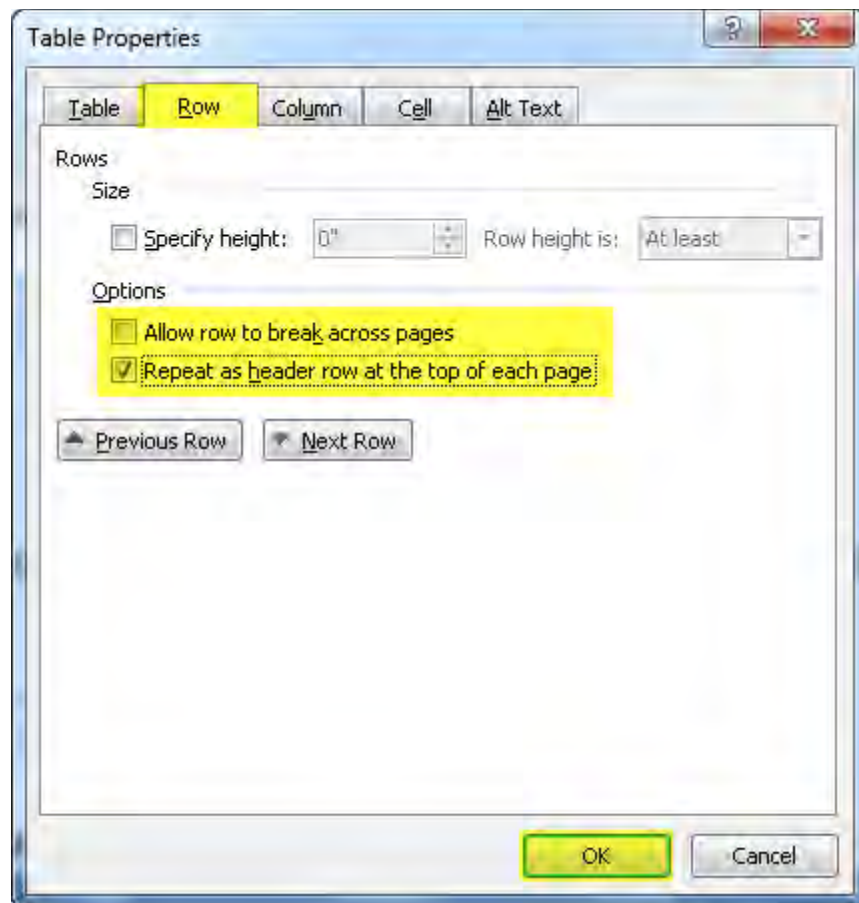
In Microsoft Word, explicitly label the header row

If you are creating your table in Microsoft Word, let Word know when your table has a header row. This has two advantages:

- If the table gets split across two or more pages of your document, then the header row will appear at the top of the table on each of those pages.
- When you convert the document to the PDF format, each cell in the top row will automatically be tagged as the header cell of its column.

To do this:

1. **Right-click anywhere on the header row** and **select Table Properties...** from the context menu. Or with the text cursor anywhere on the header row, press Alt-J, then L, then O.
2. **Right-click on the icon** and **select Table Properties...** from the context menu.
3. In the **Table Properties dialog box** that appears, **select the Row tab**.
4. In the **Options** section:
 - i. **Deselect** the checkbox for **Allow row to break across pages**.
 - ii. **Select** the checkbox for **Repeat as header row at the top of each page**.
5. Select **OK** or press **Enter** to close the Table Properties dialog box.



Unfortunately, Microsoft Word gives us no comparable way to label row header cells.

Use visual formatting to reinforce your table's structure

Now that you have chosen the right kind of headers for your data table, use background colors, banding, and gridlines to add visual cues to the way it organizes information.

Identify header cells with a strong background

The text in header cells should at least be bold. You can make whether the top row and first column contain header cells even clearer by using bold white text against a strong background color.

Table with column headers strongly indicated

Header	Header	Header	Header
Data	Data	Data	Data
Data	Data	Data	Data
Data	Data	Data	Data

Table with row headers strongly indicated

Header	Data	Data	Data
Header	Data	Data	Data
Header	Data	Data	Data
Header	Data	Data	Data

Table with row and column headers strongly indicated

Header	Header	Header	Header
Header	Data	Data	Data
Header	Data	Data	Data
Header	Data	Data	Data

In long or wide tables, use banding to complement row structure

By alternating the background color of the rows in a large table, you make it easier for everyone who can see to read across the table.

People with low vision can use a tool like ZoomText to magnify the image on the screen. When the words are big enough for them, often the sides of the table and even the adjacent rows are out of view. When the table has horizontal paths defined by alternating bands of shading define, reading across the magnified table is much easier.

Header	Header	Header	Header
Header	Data	Data	Data
Header	Data	Data	Data
Header	Data	Data	Data

Use color combinations that produce good contrast

In each cell of the table, ensure that the text and background colors have enough contrast. The proper contrast ratios help to make the table readable for users with color blindness as well as low-vision users.

Poor contrast between background and text

Header	Header	Header	Header
Header	Data	Data	Data
Header	Data	Data	Data
Header	Data	Data	Data

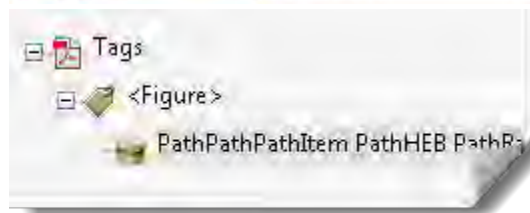
Good contrast between background and text

Header	Header	Header	Header
Header	Data	Data	Data
Header	Data	Data	Data
Header	Data	Data	Data

If a grid is needed, be sure the line width is consistent

Ensure that the grid lines on the table are in the same color and have the same thickness. Otherwise, the table might be converted into an image when the PDF is created. If this happens, the table will have to be retagged. For example, this simple table was tagged as an image in the PDF because the table grid lines are not consistent:

Item	HEB	Randall's	Costco	Whole Foods
Pears	1.29/lb.	1.49/lb.	1.19/lb.	2.79/lb.
Peaches	1.89/lb.	1.93/lb.	1.87/lb.	2.43/lb.
Bananas	1.45/lb.	1.62/lb.	1.43/lb.	2.05/lb.
Apples	1.15/lb.	1.30/lb.	1.10/lb.	1.89/lb.



Things to Avoid

Now that we've seen the best practices, let's review some frequently used design "features" that you'll want to avoid.

1. Avoid using **complex tables**. We've discussed the importance of table structure, and specifically row headers and column headers, but we recommend avoiding tables with **merged rows and columns**, and/or **more than one row header or column header**. Complex tables in any format can be difficult to read and understand, especially for screen reader users. They can also be impossible to remediate in Adobe Acrobat.
2. Break complex table into two or more simple tables. Use captions or use a table with instructional text.

Table 1 - Avoid using a Multi-Row Header Example

Source	Organic		Conventional	
	Peaches	Watermelon	Peaches	Watermelon
Farmers Market	\$4 per lb.	\$5 each	\$3 per lb.	\$4 each
Grocery Store	\$4 per lb.	\$6 each	\$2 per lb.	\$4 each

Organic:

Table 2 - Do use a Single-Row Header Example 1

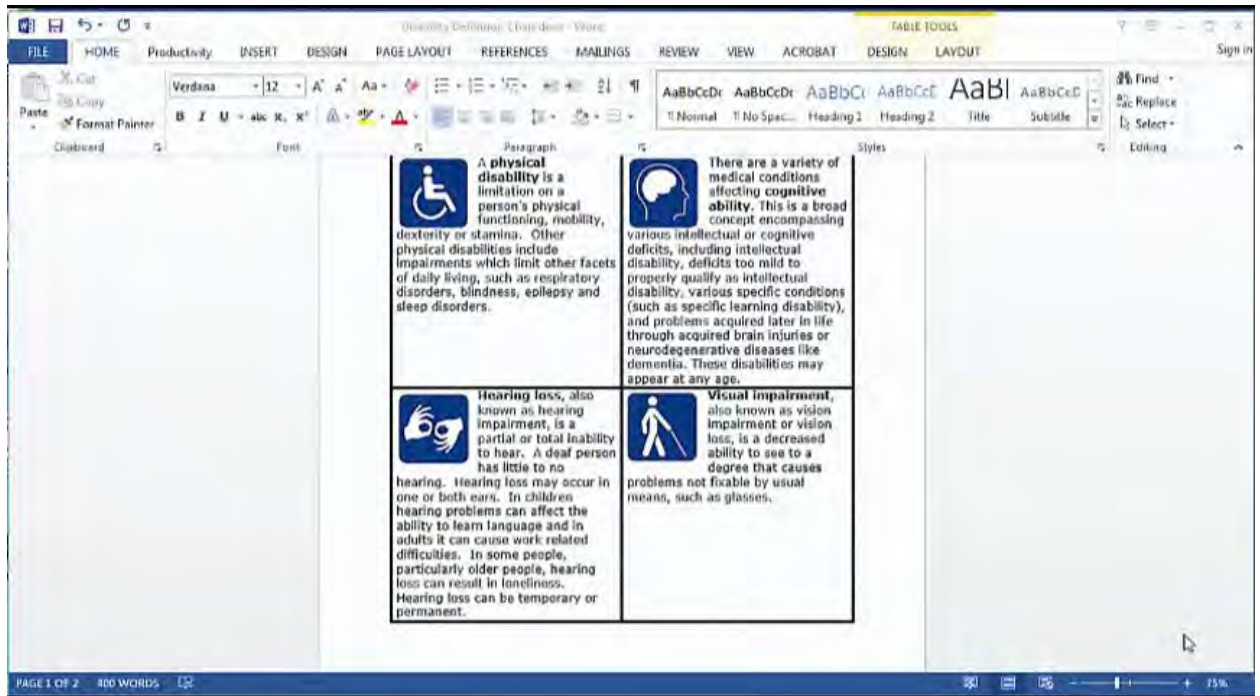
	Peaches	Watermelon
Farmers Market	\$4 per lb.	\$5 each
Grocery Store	\$4 per lb.	\$6 each

Conventional:

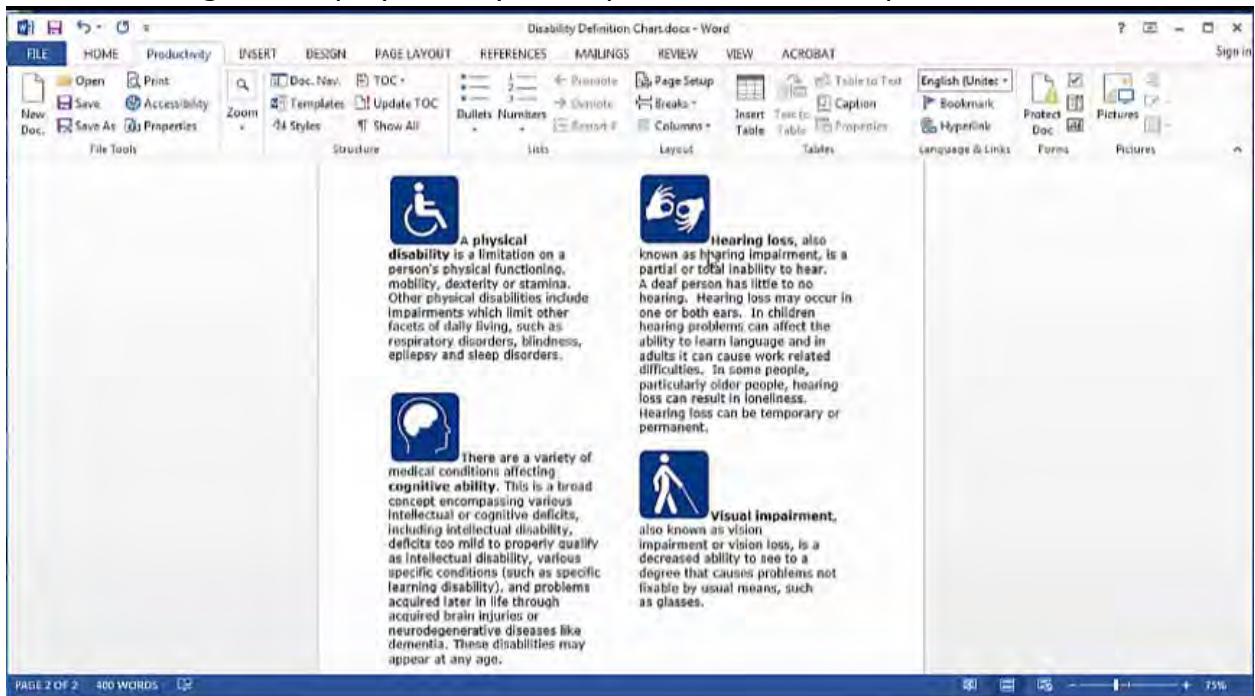
Table 3 - Do use a Single-Row Header Example 2

	Peaches	Watermelon
Farmers Market	\$3 per lb.	\$4 each
Grocery Store	\$2 per lb.	\$4 each

3. Avoid using tables simply for page layout. For people that use assistive technologies to read documents, tables used simply to align text in boxes can be quite difficult to navigate and cumbersome to follow.



Tables were designed to show “tabular” data—not to layout content. People that read tables should expect to see data for comparison or reference. Tables are great for comparing food prices among grocery stores or for referencing the employees in your department to find a phone number.



When laying out content in a Word document, use the styling, paragraph, and column tools to make your document not only easier to read but easier to edit. Besides, layout tables went away with the dinosaur.

4. Avoid including the **title** as part of the table. The title is not a header row or header column that is used to navigate a table. The title is important, but it should not be part of the table itself. Instead, include the title as heading styled text or a caption outside of the table.

Table 4 - Do NOT include title in the Table Example

Conventional Peaches and Watermelon		
	Peaches	Watermelon
Farmers Market	\$3 per lb.	\$4 each
Grocery Store	\$2 per lb.	\$4 each

Table 5 - Title Above Table Example

Conventional Peaches and Watermelon

	Peaches	Watermelon
Farmers Market	\$3 per lb.	\$4 each
Grocery Store	\$2 per lb.	\$4 each

5. Avoid using blank rows or columns simply to control spacing in your table. Adjust cell margins instead. Blank rows and/or columns are typically an indication that the table has ended. An entire row of blank cells does not provide an assistive technology user with any useful information and will sometimes be read aloud in a screen reader as the word "blank". This can become very annoying.

If you simply want to differentiate the header with white space, increase the cell height for the header row. To add more space around the header row, right click on the table and select Table Properties. In the Table Properties dialog on the Row tab, check Specify height and set the value to match your desired spacing. This will

allow visual spacing that is esthetically pleasing, but will not affect the functionality of assistive devices.

Summary

If you build your tables with these key concepts in mind, your tables will be built on a strong foundation. When you convert a Word document containing well-structured tables to a PDF file it will convert with a minimum amount of remediation, if any. This follows the theme of “comprehensive mitigation prevents excessive remediation.”

This concludes our overview of Making Accessible PDF Tables - Part 1 - Things to consider before you begin.