Transportation Consortium of South Central States

Solving Emerging Transportation Resiliency, Sustainability, and Economic Challenges through the Use of Innovative Materials and Construction Methods: From Research to Implementation

Section 508/Accessibility Aid

Context

All public facing content created after March 23, 2018 and submitted to the National Transportation Library (NTL) for inclusion in ROSA P must be 508 compliant. This includes both the final report and project dataset (as they are required to be submitted to NTL); therefore, each PI must submit their final report and project dataset in a 508 compliant format.

This aid explains the guidelines/tools that Tran-SET will use to check accessibility and the typical document edits required.

Guidelines

NTL has developed the "NTL Section 508/Accessibility Guide"; Tran-SET will adopt this guide in ensuring that final reports and project datasets are compliant. Specifically, Tran-SET will utilize the tools listed in Figure 1 and follow the "NTL Digital Submissions Accessibility Checklist" replicated below. The checklist is applicable to submitted PDFs (the final report and PDFs in the project dataset).

What tools does NTL use to determine accessibility of submissions?

NTL uses the Adobe Acrobat Accessibility Checker in Adobe Acrobat Pro DC for PDFs, which can be found in the Tools section of Adobe Pro.

If submitting a MS Word Doc to NTL, we will run the MS Check Accessibility tool that is located under the Review Tab in Word.

If submitting Excel files for data sets, please run the MS Check Accessibility tool that is is located under the Review Tab in Excel. For questions about accessibility and data sets, please contact [Leighton?].

Figure 1. Tools Tran-SET will utilize to determine accessibility.

Table 1. Required properties completed in PDFs (via NTL).

ID	Requirement
C1	The PDF has a short, but descriptive file name OR the document number as the file name. Providing a document title allows the user to locate and identify the document.
C2	**PDF Document properties** are filled out: (a) Title, (b) Author, (c) Subject, and (d) Keywords. This information is machine readable metadata that speaks to the authenticity of the document.

Table 2. Required characteristics of accessible PDFs (via NTL).

ID	Requirement
A1	**Searchable text.** A document that has images of scanned text is not accessible because screen readers cannot read a picture of text. Users need to be able to select the text to be read with a screenreader or magnified.
A2	**Document Language identified.** Specifying the document language in a PDF enables some screen readers to switch the current speech synthesizer to the appropriate language, allowing correct pronunciation of content in different languages.
A3	**Readable fonts.** The fonts in an accessible PDF must contain enough information for Acrobat to correctly extract all of the characters to text. Acrobat extracts characters to Unicode when you read a PDF with a screen reader or the Read Out Loud tool, or when you save as text for a Braille embosser. This extraction fails if Acrobat cannot determine how to map the font to Unicode characters.

ID	Requirement
A4	**Navigational aids.** Bookmarks, headings, and a table of contents assist all users in navigating the document. Bookmarks are especially useful and can be created from document headings. These features can be accessed using the keyboard without relying on the mouse, and allow for multiple way for users to navigation content.
A5	**Document Structure Tags and Proper Reading Order.** To read a document's text and present it in a way that makes sense to the user, a screen reader or other text-to-speech tool requires that the document be structured. Document structure tags in a PDF define the reading order and identify headings, paragraphs, sections, tables and other page elements. The tags structure also allows for documents to be resized and reflowed for viewing at larger sizes and on mobile devices.
A6	**Headings are tagged with a heading tag.** Heading tags match document headings and follow the visual outline. The tags follow the visual/logical order of the document.
A7	**Alternative Text Descriptions for Non-Text Elements.** Images and figures cannot be understood by the user of a screen reader unless there is alternative text associated with that image. Alternative text for images can aid many users, including those with learning disabilities. When screen reads encounter alternate text, they can interpret the element and read its alternate text description aloud.
A8	There are additional characteristics of accessible documents including: • Use of color combinations that provides a sufficient degree of contrast and no reliance on color or sensory characteristics alone to convey meaning. Meaning of color or other sensory characteristics is duplicated in text. Text passes the Color Contrast Analyzer.
A9	**Lists are tagged correctly.** Lists have a parent tag, and have one or more nested list item tags.
A10	All decorative content (text and objects) show as "Artifact".
A11	**Data tables.** Tables are identified with a "Table" tag. Table header cells have a "TH" tag and data cells have a "TD" tag.
A12	Tab order matches the visual/logical order of interactive elements.
A13	Link names describe destination/purpose or describe context.

PIs are recommended to prepare MS-related file formats (Word, PowerPoint, and Excel) using the "MS Check Accessibility" tool. NTL provided the following link for more information. For MS-based PDF documents (such as the final report and applicable material in the project dataset), PIs are encouraged to use the "MS Check Accessibility" tool, convert the document into a PDF, then utilize the "Adobe Acrobat Accessibility" to fully ensure the PDF version is 508 compliant (and meets the guidelines above).

NTL provided the following link for preparing ArcGIS shape files, mentioned that tools and features are sparse at Esri, and that it may be necessary to contact them directly for help.

Items of Importance

Defining Document Properties: As stated in the guidelines above (A1), the following properties need to be defined for each document: (a) Title, (b) Author, (c) Subject, and (d) Keywords. For MS-based documents, these can be defined by clicking on the "File" tab, clicking on the "Properties" dropdown arrow on the far right, and selecting "Advanced Properties". This brings up the new window shown in Figure 2.

For final reports: please list the title of the report, each author's last name (separated by commas), list of subject areas, and the keywords from the Technical Documentation Page.

Defining Alternative Text: As stated in the guidelines above, alternative text is required for each image and figure. To add alternative text to MS-based documents, right-click on the image/figure, select "Format Picture", then click on "Layout & Properties". Add the text to the "Description"; do not add text to the "Title". Although stated as an error in the "MS Check Accessibility" tool, alternative text is not needed for tables if converting the document into a PDF.
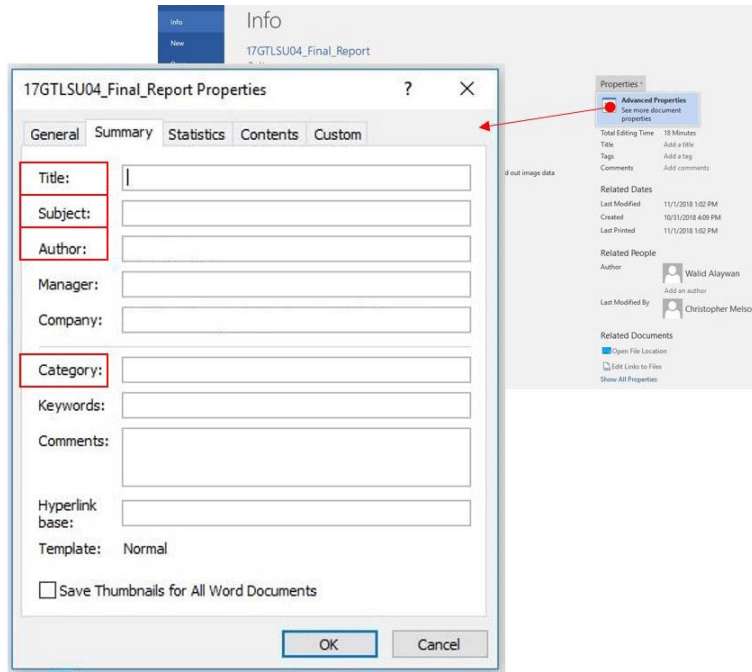
Figure 2. Defining required document properties in MS-based documents.

Creating Accessible Tables: Although stated as a warning for "merged or split cells" in the "MS Check Accessibility" tool, to be accessible, tables must contain the same number of columns in each row, and rows in each column. Tables with merged cells will be flagged as regularity errors in the "Adobe Acrobat Accessibility" tool. Also, each table must have a defined header (noted as "No Header Row Specified" error in the "MS Check Accessibility" tool). To define a table header, select the header row(s) in the table, select the "Table Tools" tab, select the "Layout" tab, and click on the "Repeat Header Rows" button in the "Data" section.

Please note: the above paragraph regarding "merged or split cells" is also applicable to Excel documents. In order for the Excel document to be accessible, the PI should correct these errors.
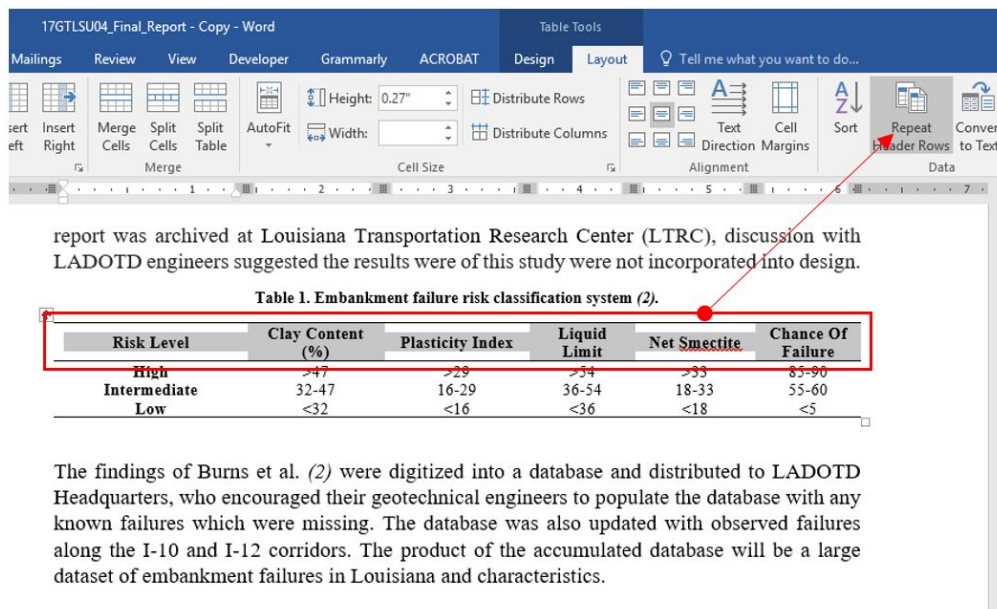

Figure 3. Defining table header rows in MS-based documents.

Miscellaneous Items: For MS-based documents, Tran-SET encourages each PI to correct as many "Errors" and "Warnings" in the "MS Check Accessibility" tool as reasonably possible. This includes:

- Providing **hyperlink text** with a clear description of the link destination when possible instead of just providing the URL; may not be necessary for ORCID webpages nor links in the reference section.
- Using formatting, indenting, and styles to create whitespace instead of **repeating blank characters** when possible.
- Ensuring that the sequence of section titles correlate to the **correct header style** (i.e., that section titles use the "Header 1" style, subsections use "Header 2", and so on). If converting into a PDF document, Tran-SET will use the header styles to create navigation panes (A4).

Contact

Ultimately, it is the responsibility of each PI to provide the final report and project data set in a 508 compliant format. However, please feel free to contact Mr. Christopher Melson (at transet@lsu.edu or 225-578-3805) if you have any questions.