

Preservation Action Plan: Presentation and Publishing Formats National Archives and Records Administration (NARA)

DRAFT 20190801

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Electronic Record or Digital Surrogate Types and Associated Formats

Publishing formats include a variety of files related to desktop publishing software used to create graphically rich documents, magazines, books, brochures, newspapers and other more sophisticated texts. Besides file formats of the publications themselves, this record type includes file formats associated with rendering files, such as printer control language and page description language files.

Essential Characteristics of this Record Type

The rapid evolution of textual record types into multimedia formats, and the variety of agency usage, limits defining characteristics only in the manner in which NARA can currently accept the transfer of textual files: essential characteristics are currently dependent on the export format. While embedded or hyperlinked content may be found across record types, we may not know much about its structure, data type, or record type. We cannot capture every possible structural nuance of the records.

Some appearance characteristics are discussed in the Structure Characteristics section, since the appearance of a textual record can be partially based on technical structure that allows the record to be manipulated and displayed in a different manner. If the appearance is fixed, as for official publication, then the dimensions must be maintained. If the appearance is determined by user preference or is otherwise mutable, then the dimensions are probably not as important.

Questions which must be considered:

- Would a change in the record's appearance alter its meaning?
- Does changing the record's appearance diminish its value? For example, if the records have been appraised as permanent for their informational value, and not evidential, then appearance characteristics may not need to be preserved.
- Would a change in the record's technical structure alter its appearance?
- Would a change in the record's technical structure affect its possible behaviors?

Built in tools such as macros with built in reports or external links are related to more record or data types which have their own essential characteristics.

Appearance

Name	Definition	Function Description
Language	A language identifier specifying the natural language(s) used in the document	
Fonts	<p>A list of fonts used in the document, and an indication of whether or not a font is embedded in a document.</p> <ul style="list-style-type: none"> • Typeface (Arial, Times New Roman, etc.) • Size (10 pt, 18 pt, etc.) • Pitch • Spacing • Emphasis (bold, italic, strikethrough, underline, etc.) 	Stores the names of all fonts (embedded and non-embedded) used in a document to assist in rendering the content and identifying the documents with potential long-term preservation risks. There will always be a font in order to have text, however, there are other variables that determine whether a distinct font is a core characteristic. For example, where appearance is fixed, such as in a publication, then font is core.
Size	Document “page” size(s), e.g., Letter, Legal, A4	Physical or virtual dimensions. These characteristics are conditional. If the appearance is important, such as a publication, then this must be maintained. However, if only the content (“words absent their formatting”) of the document is important, such as meeting minutes, then these dimensional characteristics are not core.
Layout Orientation	Orientation of the “pages,” e.g., portrait versus landscape.	Needed for understanding content and context of record.
Text Orientation	Orientation of the text, e.g., horizontal, vertical, custom axes	Needed for understanding content and context of record.
Color	Identification of the use of color in text and layout elements, e.g. borders, boxes.	Color is essential if it bears meaning and/or value, or if the appearance is fixed.

	<ul style="list-style-type: none"> • Hue: color family or name • Saturation: purity or sharpness • Brightness: shade or tint • Contrast: range of optical density or tone 	
Pagination	Pagination and content sequence in the document.	If present, then needed for contextual understanding of the record.
Forms	Form elements embedded in the document	
Annotations	Annotations included in the document.	
Tables	Includes content structured in a table feature, such as a dynamically generated table of contents.	A table is an arrangement of <u>data</u> in rows and columns, or possibly in a more complex structure. (Wikipedia)
Graphics	Images embedded in the document, or graphics created using a word processing graphics feature.	Used to point readers and viewers to particular information. They are also used to supplement text in an effort to aid readers in their understanding of a particular concept or make the concept more clear or interesting. (Wikipedia)
Outline	Includes content in an outline structure.	An outline, also called a hierarchical outline, is a list arranged to show hierarchical relationships and is a type of tree structure. An outline is used to present the main points or topics of a given subject. Each item in an outline may be divided into additional sub-items. (Wikipedia)
Transparency	The use of transparency features for graphics or text in the document.	

Layers	The presence of layered graphic elements in the document.	
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Structure

Name	Definition	Function Description
Schema	<ul style="list-style-type: none"> ● Lists ● Arrays ● Models ● Trees ● Tables ● Linkage: connection between or within records. If connections exist, then they are core ● Template. Although there is a generally agreed upon composition that exists for written textual records (business and government standards) such as with a letter, the placement of addresses, date, salutation, signature, content, enclosure, carbon copies, if there is the existence of a template needed to generate a textual record, then the template is core. 	
Character Encoding	Encoding schema, e.g., US-ASCII, EBCDIC, UTF-8.	Required for the proper parsing and rendering of the record content.
Word Count	Total number of words in the document	Valuable for evaluating the completeness of the content after transformations, but can be highly variable between tools.
Character Count	Total number of characters in the document	Valuable for evaluating the completeness of the content after

		transformations, but can be highly variable between tools.
Line Count	Total number of lines in the document	Valuable for evaluating the completeness of the content after transformations, but can be highly variable between tools.
Paragraph Count	Total number of paragraphs in the document	Valuable for evaluating the completeness of the content after transformations, but can be highly variable between tools.
Table Count	Total number of tables in the document	Valuable for evaluating the completeness of the content after transformations, but can be highly variable between tools.
Graphics Count	Total number of graphics in the document	Valuable for evaluating the completeness of the content after transformations, but can be highly variable between tools.

Behavior

Name	Definition	Function Description
Macros and Linkages		Essential characteristics are currently dependent on the export format.

Context

Name	Definition	Function Description
Series	Identification of the document's inclusion in a series, and enumeration if present.	

Descriptive Metadata	Descriptive metadata embedded in the record file header.	Information contained within the record (intrinsic) that refers to the intellectual content of material and aids discovery of such materials, for example, Caption/Subject/Date/Event/Transaction can all add value to the record.
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Current NARA Transfer Guidance for this Record Type

Preferred:

- OpenDocument Text Format (ODF) 1.0
- Portable Document Format/Archival (PDF/A)
- Tagged Image File Format (TIFF)
- Jpeg2000 (JP2)
- Portable Network Graphics (PNG)

Acceptable:

- PDF 1.0-1.7
- JPEG File Interchange Format (JFIF) with Joint Photographic Experts Group (JPEG) compression
- Graphics Interchange Format (GIF)
- PDF/A-2

Current NARA Public Access/Reference Format(s) for this Record Type

This Plan references existing public access file formats for electronic records at NARA, determined with a survey of the available public access formats in the National Archives Catalog. These references do not represent recommended public access formats under NARA policies. They are intended for informational purposes only.

Reference Format:

- PDF, TIFF, JP2

Public Access Format:

- PDF, JP2

Adobe InDesign

NARA Format ID: NF00103

Extension(s):

- indd

Documentation

- Adobe InDesign is a professional desktop publishing program, developed by Adobe. It is used to create graphically rich documents, magazines, books, brochures, newspapers and other more sophisticated texts. The INDD files are documents with various page layout formatting and graphics elements and linked images, created with and used by the application.
- [Wikipedia entry on Adobe InDesign](#)
- [Adobe InDesign website](#)
- [Fileextensions.org entry for INDD](#)

Risk and Prioritization Analysis

- Low Risk
 - Moderate Risk
 - High Risk
- 7 Numeric Risk Rating
-1 Numeric Prioritization Meeting

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: PDF
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: Adobe InDesign is a proprietary format, but it can be converted to PDF for record content sustainability.

Preferred Processing and Transformation Tool(s)

- Adobe InDesign can convert files to PDF.
- There are other converters, but they still require software that can view an INDD file. INDD files can be opened in QuarkXpress and Adobe InCopy as well as the native software, but they can't be read in something like Adobe Acrobat. Software that allows for viewing also allows for conversion to PDF.

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Adobe Portable Document Exchange (version 1:1999)

NARA Format ID: NF00374

Extension(s):

- pdf

Documentation

- <https://www.iso.org/standard/34941.html>
- <https://www.pdfa.org/wp-content/uploads/2017/05/PDFX-in-a-Nutshell.pdf>
- <https://www.iso.org/standard/39938.html>
- <https://www.loc.gov/preservation/digital/formats/fdd/fdd000124.shtml>
<https://en.wikipedia.org/wiki/PDF/X>

Risk and Prioritization Analysis

- Low Risk
 - Moderate Risk
 - High Risk
- 20 Numeric Risk Rating**
18 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: PDF/A
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: PDF/A is a more sustainable, identified preservation format.

Preferred Processing and Transformation Tool(s)

- Adobe Acrobat DC allows these files to be saved in PDF/A format.

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Adobe Portable Document Exchange (version 1:2001)

NARA Format ID:

- NF00375

Extension(s):

- pdf

Documentation

- <https://www.iso.org/standard/34941.html>
- <https://www.pdfa.org/wp-content/uploads/2017/05/PDFX-in-a-Nutshell.pdf>
- <https://www.iso.org/standard/39938.html>
- <https://www.loc.gov/preservation/digital/formats/fdd/fdd000124.shtml>
<https://en.wikipedia.org/wiki/PDF/X>

Risk and Prioritization Analysis

- Low Risk
- Moderate Risk
- High Risk
- 8 Numeric Risk Rating
- 6 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: PDF/A
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: PDF/A is a more sustainable, identified preservation format.

Preferred Processing and Transformation Tool(s)

- Adobe Acrobat DC allows these files to be saved in PDF/A format.

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Adobe Portable Document Exchange (version 1a:2001)

NARA Format ID:

- NF00376

Extension(s):

- pdf

Documentation

- <https://www.iso.org/standard/34941.html>
- <https://www.pdfa.org/wp-content/uploads/2017/05/PDFX-in-a-Nutshell.pdf>
- <https://www.iso.org/standard/39938.html>
- <https://www.loc.gov/preservation/digital/formats/fdd/fdd000124.shtml>
<https://en.wikipedia.org/wiki/PDF/X>

Risk and Prioritization Analysis

- ✓ Low Risk
 - Moderate Risk
 - High Risk
- 32 Numeric Risk Rating
30 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- ✓ Transform file to a new format.
Selected Format: PDF/A
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: PDF/A is a more sustainable, identified preservation format.

Preferred Processing and Transformation Tool(s)

- Adobe Acrobat DC allows these files to be saved in PDF/A format.

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Adobe Portable Document Exchange (version 1a:2003)

NARA Format ID:

- NF00377

Extension(s):

- pdf

Documentation

- <https://www.iso.org/standard/34941.html>
- <https://www.pdfa.org/wp-content/uploads/2017/05/PDFX-in-a-Nutshell.pdf>
- <https://www.iso.org/standard/39938.html>
- <https://www.loc.gov/preservation/digital/formats/fdd/fdd000124.shtml>
<https://en.wikipedia.org/wiki/PDF/X>

Risk and Prioritization Analysis

- ✓ Low Risk
 - Moderate Risk
 - High Risk
- 31 Numeric Risk Rating
29 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- ✓ Transform file to a new format.
Selected Format: PDF/A
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: PDF/A is a more sustainable, identified preservation format.

Preferred Processing and Transformation Tool(s)

- Adobe Acrobat DC allows these files to be saved in PDF/A format.

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Adobe Portable Document Exchange (version 2:2003)

NARA Format ID:

- NF00459 (version 2:2003)

Extension(s):

- pdf

Documentation

- <https://www.iso.org/standard/34941.html>
- <https://www.pdfa.org/wp-content/uploads/2017/05/PDFX-in-a-Nutshell.pdf>
- <https://www.iso.org/standard/39938.html>
- <https://www.loc.gov/preservation/digital/formats/fdd/fdd000124.shtml>
<https://en.wikipedia.org/wiki/PDF/X>

Risk and Prioritization Analysis

- ✓ Low Risk
 - Moderate Risk
 - High Risk
- 32 Numeric Risk Rating
30 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- ✓ Transform file to a new format.
Selected Format: PDF/A
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: PDF/A is a more sustainable, identified preservation format.

Preferred Processing and Transformation Tool(s)

- Adobe Acrobat DC allows these files to be saved in PDF/A format.

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Adobe Portable Document Exchange (version 3:2002)

NARA Format ID:

- NF00378 (version 3:2002)

Extension(s):

- pdf

Documentation

- <https://www.iso.org/standard/34941.html>
- <https://www.pdfa.org/wp-content/uploads/2017/05/PDFX-in-a-Nutshell.pdf>
- <https://www.iso.org/standard/39938.html>
- <https://www.loc.gov/preservation/digital/formats/fdd/fdd000124.shtml>
<https://en.wikipedia.org/wiki/PDF/X>

Risk and Prioritization Analysis

- ✓ Low Risk
- Moderate Risk
- High Risk
- 48 Numeric Risk Rating
- 48 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- ✓ Transform file to a new format.
Selected Format: PDF/A
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: PDF/A is a more sustainable, identified preservation format.

Preferred Processing and Transformation Tool(s)

- Adobe Acrobat DC allows these files to be saved in PDF/A format.

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Adobe Portable Document Exchange (version 3:2003)

NARA Format ID:

- NF00379

Extension(s):

- pdf

Documentation

- <https://www.iso.org/standard/34941.html>
- <https://www.pdfa.org/wp-content/uploads/2017/05/PDFX-in-a-Nutshell.pdf>
- <https://www.iso.org/standard/39938.html>
- <https://www.loc.gov/preservation/digital/formats/fdd/fdd000124.shtml>
<https://en.wikipedia.org/wiki/PDF/X>

Risk and Prioritization Analysis

- ✓ Low Risk
 - Moderate Risk
 - High Risk
- 32 Numeric Risk Rating
30 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- ✓ Transform file to a new format.
Selected Format: PDF/A
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: PDF/A is a more sustainable, identified preservation format.

Preferred Processing and Transformation Tool(s)

- Adobe Acrobat DC allows these files to be saved in PDF/A format.

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Encapsulated PostScript File Format 1-3 (eps)

NARA Format ID: NF00171

Extension(s):

- eps

Documentation

- Encapsulated PostScript (EPS) is a PostScript document with additional restrictions which is intended to be usable as a graphics file format. In other words, EPS files are more-or-less self-contained, reasonably predictable PostScript documents that describe an image or drawing and can be placed within another PostScript document.
- [Library of Congress entry for EPS 3](#)
- [Encapsulated PostScript \(EPS\) File Format Specification Version 3.0. May 1, 1992.](#)
- [Wikipedia entry for Encapsulated PostScript.](#)
- <http://www.fileformat.info/format/eps/egff.htm>

Risk and Prioritization Analysis

Supply the Risk Level and Numeric Rating and the Prioritization Numeric Rating as generated with the Format Risk and Prioritization Matrix for this file format.

Low Risk

Moderate Risk

High Risk

20 Numeric Risk Rating

17 Numeric Prioritization Rating

Proposed Preservation Plan

Retain file format in its existing format.

Transform file to a new format.

Selected Format: TIFF, JP2

Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.

Procure/develop tools to transform the format to the preferred normalized form.

Provide Additional Information so that the record type remains understandable/usable over time.

Explore Additional Options

Justification: The Library of Congress Recommended Formats Statement (RFS) includes EPS as an acceptable format for vector and raster graphic images. The RFS does not specify a particular version of EPS. They can be converted to TIFF or JPEG for access purposes.

Preferred Processing and Transformation Tool(s)

- EPS Viewer (<https://www.howtogeek.com/278138/how-to-open-an-eps-image-file-on-windows/>) allows for opening EPS files and saving them in other formats such as TIFF or JPEG.

Preferred Viewer/Access Software

- EPS Viewer (<https://www.howtogeek.com/278138/how-to-open-an-eps-image-file-on-windows/>)

Hewlett Packard Vector Graphic Plotter File

NARA Format ID: NF00207

Extension(s):

- hpgl

Documentation

- File extension HPGL is associated with the Hewlett Packard Graphics Language for HP plotters. An HPGL file stores vector image (HPGL plotter file).
- [ArchivesTeam entry on HPGL](#)
- [Wikipedia entry on HPGL](#)
- [PDF on HP-GL Graphics Language](#)
- [Fileextensions.org link to HPGL](#)

Risk and Prioritization Analysis

Supply the Risk Level and Numeric Rating and the Prioritization Numeric Rating as generated with the Format Risk and Prioritization Matrix for this file format.

- Low Risk
 - Moderate Risk
 - High Risk
- 11 Numeric Risk Rating
0 Numeric Prioritization Rating

Proposed Preservation Plan

Recommended actions (more than one can be selected):

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: TBD, preferably TIFF, JP2, PNG, PDF
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: Sustainability of the format is unknown, although it may be worth looking into. Conversion to a known sustainable format is possible but not tested.

Preferred Processing and Transformation Tool(s)

- [ImageMagick](#) can open and convert files to various preferred formats.
- [PloView](#) is another free viewer/converter.

Preferred Viewer/Access Software

- Depends on the TBD preservation format.

Interleaf Document

NARA Format ID: NF00213

Extension(s):

- ildoc

Documentation

- https://www.proz.com/forum/software_applications/67558-interleaf_quicksilver.html
- <https://www.revolvy.com/page/Interleaf>
- <http://www.computernostalgia.net/articles/Interleaf.htm>
- <https://forums.adobe.com/thread/316186>
- <http://enacademic.com/dic.nsf/enwiki/27486>

Risk and Prioritization Analysis

- Low Risk
 - Moderate Risk
 - High Risk
- 14 Numeric Risk Rating
-24 Numeric Prioritization Rating

Proposed Preservation Plan

Recommended actions (more than one can be selected):

- Retain** file format in its existing format.
- Transform** file to a new format.
Selected Format: TBD, preferably PDF
- Procure/develop tools** to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools** to transform the format to the preferred normalized form.
- Provide Additional Information** so that the record type remains understandable/usable over time.
- Explore Additional Options**

Justification: This file format is rare and proprietary. It is unclear the extent to which older iterations of these files are supported.

Preferred Processing and Transformation Tool(s)

- Tagwrite: http://www.tagwrite.com/interleaf_quicksilver.html

Preferred Viewer/Access Software

- Tagwrite: http://www.tagwrite.com/interleaf_quicksilver.html
- Adobe Acrobat Reader (post-transformation)

LaTeX Master Document

NARA Format ID: NF00225

Extension(s):

- tex

Documentation

- LaTeX is a document preparation system for high-quality typesetting. The TEX file is a plain text that contains markup conventions, which define document structure. It is most often used for medium-to-large technical or scientific documents but it can be used for almost any form of publishing (computer science, electrical engineering, economics, statistics, etc.)
- [Wikipedia entry for LaTeX](#)
- [Fileextensions.org entry for TEX files](#)
- [LaTeX website](#)

Risk and Prioritization Analysis

Supply the Risk Level and Numeric Rating and the Prioritization Numeric Rating as generated with the Format Risk and Prioritization Matrix for this file format.

- Low Risk
 - Moderate Risk
 - High Risk
- 19 Numeric Risk Rating**
11 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: PDF
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: LaTeX is plain text, but requires specialized software to render appearance and formatting characteristics.

Preferred Processing and Transformation Tool(s)

- [LaTeX2RTF](#) can convert TEX files to RTF files, which then can be converted to DOCX and then PDF.

Preferred Viewer/Access Software

- Any supported plain text reader can open the record content, but no appearance or formatting characteristics are presented.

Microsoft Print File Open XPS

NARA Format ID: NF00292

Extension(s):

- xps

Documentation

- OpenXPS (Open XML Paper Specification) is a page description language and document format.
- [Open XML Paper Specification \(Open XPS®\)](#)
- [ArchiveTeam entry for Open XPS](#)
- [Wikipedia entry on XPS](#)

Risk and Prioritization Analysis

Supply the Risk Level and Numeric Rating and the Prioritization Numeric Rating as generated with the Format Risk and Prioritization Matrix for this file format.

Low Risk

Moderate Risk

High Risk

26 Numeric Risk Rating

26 Numeric Risk Rating

Proposed Preservation Plan

Retain file format in its existing format.

Transform file to a new format.

Selected Format: PDF

Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.

Procure/develop tools to transform the format to the preferred normalized form.

Provide Additional Information so that the record type remains understandable/usable over time.

Explore Additional Options

Justification: XPS is not an open format, although OXPS is. XPS and OXPS are not compatible. NARA may want to investigate whether OXPS could be an acceptable format.

Preferred Processing and Transformation Tool(s)

- XPS to PDF converter: <https://www.pdfaid.com/xps-to-pdf-conversion.aspx>
- If OXPS were to become an accepted format, [XpsConverter](#) converts documents between .xps and .oxps formats.

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Microsoft Publisher 2.0

NARA Format ID: NF00293

Extension(s):

- pub

Documentation

- [Wikipedia entry for Microsoft Publisher](#)
- [ArchiveTeam entry for Microsoft Publisher](#)

Risk and Prioritization Analysis

Supply the Risk Level and Numeric Rating and the Prioritization Numeric Rating as generated with the Format Risk and Prioritization Matrix for this file format.

- Low Risk
 - Moderate Risk
 - High Risk
- 3 Numeric Risk Rating
-11 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: PDF
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: This is a proprietary format. Transformation allows for preservation in a sustainable format.

Preferred Processing and Transformation Tool(s)

- There are multiple free online converters for Publisher to PDF:
 - <https://www.publishertopdf.com/> (1 file at a time, but says it can convert all versions of Publisher)

- <https://pubtopdf.com/> (up to 20 files at a time)
- LibreOffice can open Microsoft Publisher 98-2010 files, but it is unclear if anything would be lost if transformed to Open Office.

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Microsoft Publisher 2000

NARA Format ID: NF00294

Extension(s):

- pub

Documentation

- [Wikipedia entry for Microsoft Publisher](#)
- [ArchiveTeam entry for Microsoft Publisher](#)

Risk and Prioritization Analysis

Supply the Risk Level and Numeric Rating and the Prioritization Numeric Rating as generated with the Format Risk and Prioritization Matrix for this file format.

- Low Risk
- Moderate Risk
- High Risk
- 2 Numeric Risk Rating
- 6 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: PDF
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: This is a proprietary format. Transformation allows for preservation in a sustainable format.

Preferred Processing and Transformation Tool(s)

- There are multiple free online converters for Publisher to PDF:
 - <https://www.publishertopdf.com/> (1 file at a time, but says it can convert all versions of Publisher)

- <https://pubtopdf.com/> (up to 20 files at a time)
- LibreOffice can open Microsoft Publisher 98-2010 files, but it is unclear if anything would be lost if transformed to Open Office.

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Microsoft Publisher 2002

NARA Format ID: NF00295

Extension(s):

- pub

Documentation

- [Wikipedia entry for Microsoft Publisher](#)
- [ArchiveTeam entry for Microsoft Publisher](#)

Risk and Prioritization Analysis

Supply the Risk Level and Numeric Rating and the Prioritization Numeric Rating as generated with the Format Risk and Prioritization Matrix for this file format.

- Low Risk
- Moderate Risk
- High Risk
- 5 Numeric Risk Rating**
- 3 Numeric Prioritization Rating**

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: PDF
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: This is a proprietary format. Transformation allows for preservation in a sustainable format.

Preferred Processing and Transformation Tool(s)

- There are multiple free online converters for Publisher to PDF:
 - <https://www.publishertopdf.com/> (1 file at a time, but says it can convert all versions of Publisher)

- <https://pubtopdf.com/> (up to 20 files at a time)
- LibreOffice can open Microsoft Publisher 98-2010 files, but it is unclear if anything would be lost if transformed to Open Office.

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Microsoft Publisher 95

NARA Format ID: NF00296

Extension(s):

- pub

Documentation

- [Wikipedia entry for Microsoft Publisher](#)
- [ArchiveTeam entry for Microsoft Publisher](#)

Risk and Prioritization Analysis

Supply the Risk Level and Numeric Rating and the Prioritization Numeric Rating as generated with the Format Risk and Prioritization Matrix for this file format.

- Low Risk
- Moderate Risk
- High Risk
- 2 Numeric Risk Rating
- 10 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: PDF
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: This is a proprietary format. Transformation allows for preservation in a sustainable format.

Preferred Processing and Transformation Tool(s)

- There are multiple free online converters for Publisher to PDF:
 - <https://www.publishertopdf.com/> (1 file at a time, but says it can convert all versions of Publisher)

- <https://pubtopdf.com/> (up to 20 files at a time)
- LibreOffice can open Microsoft Publisher 98-2010 files, but it is unclear if anything would be lost if transformed to Open Office.

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Microsoft Publisher 97

NARA Format ID: NF00297

Extension(s):

- pub

Documentation

- [Wikipedia entry for Microsoft Publisher](#)
- [ArchiveTeam entry for Microsoft Publisher](#)

Risk and Prioritization Analysis

Supply the Risk Level and Numeric Rating and the Prioritization Numeric Rating as generated with the Format Risk and Prioritization Matrix for this file format.

- Low Risk
- Moderate Risk
- High Risk
- 2 Numeric Risk Rating
- 10 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: PDF
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: This is a proprietary format. Transformation allows for preservation in a sustainable format.

Preferred Processing and Transformation Tool(s)

- There are multiple free online converters for Publisher to PDF:
 - <https://www.publishertopdf.com/> (1 file at a time, but says it can convert all versions of Publisher)

- <https://pubtopdf.com/> (up to 20 files at a time)
- LibreOffice can open Microsoft Publisher 98-2010 files, but it is unclear if anything would be lost if transformed to Open Office.

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Microsoft Publisher 98

NARA Format ID: NF00298

Extension(s):

- pub

Documentation

- [Wikipedia entry for Microsoft Publisher](#)
- [ArchiveTeam entry for Microsoft Publisher](#)

Risk and Prioritization Analysis

Supply the Risk Level and Numeric Rating and the Prioritization Numeric Rating as generated with the Format Risk and Prioritization Matrix for this file format.

- Low Risk
- Moderate Risk
- High Risk
- 2 Numeric Risk Rating
- 6 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: PDF
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: This is a proprietary format. Transformation allows for preservation in a sustainable format.

Preferred Processing and Transformation Tool(s)

- There are multiple free online converters for Publisher to PDF:
 - <https://www.publishertopdf.com/> (1 file at a time, but says it can convert all versions of Publisher)

- <https://pubtopdf.com/> (up to 20 files at a time)
- LibreOffice can open Microsoft Publisher 98-2010 files, but it is unclear if anything would be lost if transformed to Open Office.

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Nota Bene Text File

NARA Format ID: NF00342

Extension(s):

- nb

Documentation

- [https://en.wikipedia.org/wiki/Nota_Bene_\(word_processor\)](https://en.wikipedia.org/wiki/Nota_Bene_(word_processor))
- <http://www.notabene.com/users.html>
- <http://extension.nirsoft.net/nb>

Risk and Prioritization Analysis

- Low Risk
 - Moderate Risk
 - High Risk
- 13 Numeric Risk Rating
-21 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: PDF
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: This format is primarily used in academic settings, and is rare within the federal government. Most features are oriented to drafting the document and searching personal files.

Preferred Processing and Transformation Tool(s)

- NotaBene 11.5 includes a save to pdf feature (https://www.notabene.com/nb10_faq.html)
- FileMerlin (<http://file-convert.com/flmn.htm>)

Preferred Viewer/Access Software

- Adobe Acrobat Reader

PageMaker TableEditor Graphics

NARA Format ID: NF00353

Extension(s):

- tbl

Documentation

- [Wikipedia entry for Adobe PageMaker](#)

Risk and Prioritization Analysis

Supply the Risk Level and Numeric Rating and the Prioritization Numeric Rating as generated with the Format Risk and Prioritization Matrix for this file format.

- Low Risk
- Moderate Risk
- High Risk
- 4 Numeric Risk Rating
- 12 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: PDF
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: PageMaker is no longer supported or sold in the marketplace.

Preferred Processing and Transformation Tool(s)

- Adobe InDesign CS PageMaker Edition can open PageMaker 6.5x-7.x publications and templates. Adobe InDesign CS2 to CS6 can open Adobe PageMaker 6.0-7.x publications and templates. They do seem to support tables, but they are treated as graphics and not editable. (See <https://helpx.adobe.com/creative-suite/kb/open->

[pagemaker-files-indesign.html](#)) Once converted to Adobe InDesign it should be possible to convert the file to PDF for preservation.

Preferred Viewer/Access Software

- Adobe Acrobat Reader

PageMaker 5.0 (pm5)

NARA Format ID: NF00352

Extension(s):

- pm5

Documentation

- [Wikipedia entry for Adobe PageMaker](#)
- <https://fileinfo.com/extension/pm5>

Risk and Prioritization Analysis

Supply the Risk Level and Numeric Rating and the Prioritization Numeric Rating as generated with the Format Risk and Prioritization Matrix for this file format.

- Low Risk
 - Moderate Risk
 - High Risk
- 14 Numeric Risk Rating
-22 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: PDF
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: PageMaker 5 is no longer supported or sold in the marketplace.

Preferred Processing and Transformation Tool(s)

- PageMaker 5 files can be converted to .PMD files with PageMaker 7.0, which can be opened with Adobe InDesign for conversion into PDF.

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Portable Document Format (PDF) version 1

NARA Format ID: NF00362

Extension(s):

- pdf

Documentation

- https://en.wikipedia.org/wiki/Adobe_Acrobat_version_history

Risk and Prioritization Analysis

Low Risk

Moderate Risk

High Risk

10 Numeric Risk Rating

8 Numeric Prioritization Rating

Proposed Preservation Plan

Retain file format in its existing format.

Transform file to a new format.

Selected Format:

Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.

Procure/develop tools to transform the format to the preferred normalized form.

Provide Additional Information so that the record type remains understandable/usable over time.

Explore Additional Options

Justification: PDF 1 - 1.6 are considered acceptable formats by NARA.

Preferred Processing and Transformation Tool(s)

- Adobe Acrobat DC

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Portable Document Format (PDF) version 1.1

NARA Format ID: NF00363

Extension(s):

- pdf

Documentation

- https://en.wikipedia.org/wiki/Adobe_Acrobat_version_history

Risk and Prioritization Analysis

- Low Risk
 - Moderate Risk
 - High Risk
- 10 Numeric Risk Rating
8 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format:
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: PDF 1 - 1.6 are considered acceptable formats by NARA.

Preferred Processing and Transformation Tool(s)

- Adobe Acrobat DC

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Portable Document Format (PDF) version 1.2

NARA Format ID: NF00364

Extension(s):

- pdf

Documentation

- https://en.wikipedia.org/wiki/Adobe_Acrobat_version_history

Risk and Prioritization Analysis

Low Risk

Moderate Risk

High Risk

24 Numeric Risk Rating

22 Numeric Prioritization Rating

Proposed Preservation Plan

Retain file format in its existing format.

Transform file to a new format.

Selected Format:

Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.

Procure/develop tools to transform the format to the preferred normalized form.

Provide Additional Information so that the record type remains understandable/usable over time.

Explore Additional Options

Justification: PDF 1 - 1.6 are considered acceptable formats by NARA.

Preferred Processing and Transformation Tool(s)

- Adobe Acrobat DC

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Portable Document Format (PDF) version 1.3

NARA Format ID: NF00365

Extension(s):

- pdf

Documentation

- https://en.wikipedia.org/wiki/Adobe_Acrobat_version_history

Risk and Prioritization Analysis

Low Risk

Moderate Risk

High Risk

18 Numeric Risk Rating

16 Numeric Prioritization Rating

Proposed Preservation Plan

Retain file format in its existing format.

Transform file to a new format.

Selected Format:

Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.

Procure/develop tools to transform the format to the preferred normalized form.

Provide Additional Information so that the record type remains understandable/usable over time.

Explore Additional Options

Justification: PDF 1 - 1.6 are considered acceptable formats by NARA.

Preferred Processing and Transformation Tool(s)

- Adobe Acrobat DC

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Portable Document Format (PDF) version 1.4

NARA Format ID: NF00366

Extension(s):

- pdf

Documentation

- https://en.wikipedia.org/wiki/Adobe_Acrobat_version_history

Risk and Prioritization Analysis

Low Risk

Moderate Risk

High Risk

18 Numeric Risk Rating

16 Numeric Prioritization Rating

Proposed Preservation Plan

Retain file format in its existing format.

Transform file to a new format.

Selected Format:

Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.

Procure/develop tools to transform the format to the preferred normalized form.

Provide Additional Information so that the record type remains understandable/usable over time.

Explore Additional Options

Justification: PDF 1 - 1.6 are considered acceptable formats by NARA.

Preferred Processing and Transformation Tool(s)

- Adobe Acrobat DC

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Portable Document Format (PDF) version 1.5

NARA Format ID: NF00367

Extension(s):

- pdf

Documentation

- https://en.wikipedia.org/wiki/Adobe_Acrobat_version_history

Risk and Prioritization Analysis

Low Risk

Moderate Risk

High Risk

19 Numeric Risk Rating

17 Numeric Prioritization Rating

Proposed Preservation Plan

Retain file format in its existing format.

Transform file to a new format.

Selected Format:

Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.

Procure/develop tools to transform the format to the preferred normalized form.

Provide Additional Information so that the record type remains understandable/usable over time.

Explore Additional Options

Justification: PDF 1 - 1.6 are considered acceptable formats by NARA.

Preferred Processing and Transformation Tool(s)

- Adobe Acrobat DC

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Portable Document Format (PDF) version 1.6

NARA Format ID: NF00368

Extension(s):

- pdf

Documentation

- https://en.wikipedia.org/wiki/Adobe_Acrobat_version_history

Risk and Prioritization Analysis

Low Risk

Moderate Risk

High Risk

19 Numeric Risk Rating

17 Numeric Prioritization Rating

Proposed Preservation Plan

Retain file format in its existing format.

Transform file to a new format.

Selected Format:

Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.

Procure/develop tools to transform the format to the preferred normalized form.

Provide Additional Information so that the record type remains understandable/usable over time.

Explore Additional Options

Justification: PDF 1 - 1.6 are considered acceptable formats by NARA.

Preferred Processing and Transformation Tool(s)

- Adobe Acrobat DC

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Portable Document Format (PDF) version 1.7

NARA Format ID: NF00369

Extension(s):

- pdf

Documentation

- https://en.wikipedia.org/wiki/Adobe_Acrobat_version_history

Risk and Prioritization Analysis

Low Risk

Moderate Risk

High Risk

23 Numeric Risk Rating

21 Numeric Prioritization Rating

Proposed Preservation Plan

Retain file format in its existing format.

Transform file to a new format.

Selected Format:

Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.

Procure/develop tools to transform the format to the preferred normalized form.

Provide Additional Information so that the record type remains understandable/usable over time.

Explore Additional Options

Justification: PDF 1 - 1.6 are considered acceptable formats by NARA.

Preferred Processing and Transformation Tool(s)

- Adobe Acrobat DC

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Portable Document Format (PDF) Unspecified Version

NARA Format ID: NF00361

Extension(s):

- pdf

Documentation

- https://en.wikipedia.org/wiki/Adobe_Acrobat_version_history

Risk and Prioritization Analysis

Low Risk

Moderate Risk

High Risk

27 Numeric Risk Rating

27 Numeric Prioritization Rating

Proposed Preservation Plan

Retain file format in its existing format.

Transform file to a new format.

Selected Format:

Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.

Procure/develop tools to transform the format to the preferred normalized form.

Provide Additional Information so that the record type remains understandable/usable over time.

Explore Additional Options

Justification: PDF 1 - 1.6 are considered acceptable formats by NARA.

Preferred Processing and Transformation Tool(s)

- Adobe Acrobat DC

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Portable Document Format/Archiving (PDF/A) Unspecified Version

NARA Format ID: NF00370

Extension(s):

- pdf

Documentation

- <https://en.wikipedia.org/wiki/PDF/A>
- <https://www.pdfa.org/pdfa-faq/>

Risk and Prioritization Analysis

Low Risk

Moderate Risk

High Risk

23 Numeric Risk Rating

23 Numeric Prioritization Rating

Proposed Preservation Plan

Retain file format in its existing format.

Transform file to a new format.

Selected Format:

Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.

Procure/develop tools to transform the format to the preferred normalized form.

Provide Additional Information so that the record type remains understandable/usable over time.

Explore Additional Options

Justification: PDF/A-1 is a preferred format of the National Archives.

Preferred Processing and Transformation Tool(s)

- Adobe Acrobat DC

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Portable Document Format/Archiving (PDF/A) 1a

NARA Format ID: NF00371

Extension(s):

- pdf

Documentation

- <https://en.wikipedia.org/wiki/PDF/A>
- <https://www.pdfa.org/pdfa-faq/>

Risk and Prioritization Analysis

Low Risk

Moderate Risk

High Risk

45 Numeric Risk Rating

45 Numeric Prioritization Rating

Proposed Preservation Plan

Retain file format in its existing format.

Transform file to a new format.

Selected Format:

Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.

Procure/develop tools to transform the format to the preferred normalized form.

Provide Additional Information so that the record type remains understandable/usable over time.

Explore Additional Options

Justification: PDF/A-1 is a preferred format of the National Archives.

Preferred Processing and Transformation Tool(s)

- Adobe Acrobat DC

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Portable Document Format/Archiving (PDF/A) 1b

NARA Format ID: NF00372

Extension(s):

- pdf

Documentation

- <https://en.wikipedia.org/wiki/PDF/A>
- <https://www.pdfa.org/pdfa-faq/>

Risk and Prioritization Analysis

Low Risk

Moderate Risk

High Risk

45 Numeric Risk Rating

45 Numeric Prioritization Rating

Proposed Preservation Plan

Retain file format in its existing format.

Transform file to a new format.

Selected Format:

Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.

Procure/develop tools to transform the format to the preferred normalized form.

Provide Additional Information so that the record type remains understandable/usable over time.

Explore Additional Options

Justification: PDF/A-1 is a preferred format of the National Archives.

Preferred Processing and Transformation Tool(s)

- Adobe Acrobat DC

Preferred Viewer/Access Software

- Adobe Acrobat Reader

PostScript 2.0

NARA Format ID: NF00384

Extension(s):

- ps

Documentation

- PostScript (PS) is a page description language in the electronic publishing and desktop publishing business. It was a predecessor to PDF.
- [Library of Congress entry for PostScript Family](#)
- [PostScript Language Document Structuring Conventions \(DSC\) Specification Version 3.0. 25 September 1992.](#)
- [Wikipedia entry for PostScript](#)

Risk and Prioritization Analysis

Supply the Risk Level and Numeric Rating and the Prioritization Numeric Rating as generated with the Format Risk and Prioritization Matrix for this file format.

- Low Risk
 - Moderate Risk
 - High Risk
- 20 Numeric Risk Rating**
17 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: PDF
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: PostScript is not considered a sustainable format and can be converted to PDF which is a sustainable format.

Preferred Processing and Transformation Tool(s)

- [Ghostscript](#) can convert PostScript to PDF.

Preferred Viewer/Access Software

- Adobe Acrobat Reader

PostScript 3.0

NARA Format ID: NF00385

Extension(s):

- ps

Documentation

- PostScript (PS) is a page description language in the electronic publishing and desktop publishing business. It was a predecessor to PDF.
- [Library of Congress entry for PostScript Family](#)
- [PostScript Language Document Structuring Conventions \(DSC\) Specification Version 3.0. 25 September 1992.](#)
- [Wikipedia entry for PostScript](#)

Risk and Prioritization Analysis

Supply the Risk Level and Numeric Rating and the Prioritization Numeric Rating as generated with the Format Risk and Prioritization Matrix for this file format.

- Low Risk
 - Moderate Risk
 - High Risk
- 20 Numeric Risk Rating**
17 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: PDF
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: PostScript is not considered a sustainable format and can be converted to PDF which is a sustainable format.

Preferred Processing and Transformation Tool(s)

- [Ghostscript](#) can convert PostScript to PDF.

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Ventura Publisher

NARA Format ID: NF00434

Extension(s):

- pub

Documentation

- [Wikipedia entry on Corel Ventura](#)
- [Fileextensions.org entry on PUB files](#) (discusses more than the Ventura Publisher format)
- [Computer History - Ventura Publisher](#)

Risk and Prioritization Analysis

- Low Risk
- Moderate Risk
- High Risk
- 2 Numeric Risk Rating
- 10 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: TBD, preferably PDF
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: Ventura is no longer a supported format.

Preferred Processing and Transformation Tool(s)

- Ventura PUB files appear to require the original software and later versions do not cleanly upgrade files from older versions. Ventura does have the ability to export to PDF, but earlier versions of the software may not have this option.

Preferred Viewer/Access Software

- Adobe Acrobat Reader

File Format Name: IBM Lotus Freelance versions 1-2.1

NARA Format ID: NF00235

Extension(s):

- .pre
- .mas

Documentation

- https://en.wikipedia.org/wiki/IBM_Lotus_Freelance_Graphics

Risk and Prioritization Analysis

- Low Risk
 - Moderate Risk
 - High Risk
- 8 Numeric Risk Rating
-16 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: PDF
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: Freelance Graphics is no longer sold or supported in the marketplace.

Preferred Processing and Transformation Tool(s)

- PowerPoint is able to open the Freelance files for conversion to PDF.

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Maker Interchange Format

NARA Format ID: NF00244

Extension(s)

- mif

Documentation

- http://fileformats.archiveteam.org/wiki/Maker_Interchange_Format
- https://help.adobe.com/en_US/framemaker/mifreference/mifref.pdf
- <http://www.rtf-to-xml.com/glossary/mif.html>

Risk and Prioritization Analysis

- Low Risk
 - Moderate Risk
 - High Risk
- 10 Numeric Risk Rating
2 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: TBD
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: While this is ASCII and readable with a text readers, this FrameMaker sidecar file should be converted to PDF to accompany its associated file.

Preferred Processing and Transformation Tool(s)

- All versions of FrameMaker can open a MIF file and convert it to PDF.

Preferred Viewer/Access Software

- Adobe Acrobat Reader

Crystal Reports File

NARA Format ID: NF00150

Extension(s):

- rpt

Documentation

- <https://www.lifewire.com/rpt-file-4153494>
- <https://fileinfo.com/extension/rpt>
- https://en.wikipedia.org/wiki/Crystal_Reports

Risk and Prioritization Analysis

- Low Risk
- Moderate Risk
- High Risk
- 1 Numeric Risk Rating
- 9 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: PDF
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: While this is ASCII and readable with a text readers, this should be converted to PDF.

Preferred Processing and Transformation Tool(s)

- Microsoft Notepad, or any supported text editor.

Preferred Viewer/Access Software

- Microsoft Notepad, or any supported text editor.

OpenDocument Presentation Format

NARA Format ID: NF00348

Extension(s)

- odp
- fodp

Documentation

https://www.forensicswiki.org/wiki/Open_Document_Format
<http://fileformats.archiveteam.org/wiki/Ext:odp>

Risk and Prioritization Analysis

Supply the Risk Level and Numeric Rating and the Prioritization Numeric Rating as generated with the Format Risk and Prioritization Matrix for this file format.

- Low Risk**
 - Moderate Risk**
 - High Risk**
- 45 Numeric Risk Rating**
45 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain** file format in its existing format.
- Transform** file to a new format.
Selected Format:
- Procure/develop tools** to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools** to transform the format to the preferred normalized form.
- Provide Additional Information** so that the record type remains understandable/usable over time.
- Explore Additional Options**

Justification: OpenDocument Format is a preferred format of the National Archives.

Preferred Processing and Transformation Tool(s)

- Open Office
- Libre Office

Preferred Viewer/Access Software

- Open Office
- Libre Office

Statistica Report File

NRA File Format ID: NF00413

Extension(s):

- str

Documentation

- <http://documentation.statsoft.com/STATISTICAHelp.aspx?path=Reports/Report/UnderstandingReports/ReportOverview>

Risk and Prioritization Analysis

- Low Risk
- Moderate Risk
- High Risk
- 6 Numeric Risk Rating
- 14 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: PDF
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: This is a proprietary extension of RTF, so should be transformed.

Preferred Processing and Transformation Tool(s)

- TBD, may require Statistica
- Research if Microsoft Word will open these files since they are an extended version of RTF.

Preferred Viewer/Access Software

- TBD, may require Statistica

Harvard Graphics Presentation

NARA Format ID: NF00205

Extension(s):

- prs
- shw
- sh3
- pr4

Documentation

- Harvard Graphics was a graphics and presentation program for personal computers. It incorporates text, information graphics, and charts into custom slideshow presentations.
- The PRS and PR4 files contain a presentation created in the Harvard Graphics software.
- The SHW file is a presentation created in Harvard Graphics for DOS.
- The SH3 file is a presentation created and saved in version 3.0 of the program.
- The CH3 file is mainly associated with the Harvard Graphics v3.0 software and used for its default chart or drawing file.
- [Wikipedia entry for Harvard Graphics](#)
- [Fileextension.org entry for PRS](#)
- [Fileextension.org entry for SHW](#)
- [Fileextension.org entry for SH3](#)
- [Fileextension.org entry for PR4](#)
- [Fileextension.org entry for CH3](#)
- <http://www.fileformat.info/format/harvard/egff.htm>

Risk and Prioritization Analysis

Supply the Risk Level and Numeric Rating and the Prioritization Numeric Rating as generated with the Format Risk and Prioritization Matrix for this file format.

- Low Risk
 Moderate Risk
 High Risk
-5 Numeric Risk Rating
-13 Numeric Prioritization Meeting

Proposed Preservation Plan

- Retain file format in its existing format.
 Transform file to a new format.
Selected Format: TBD, preferably PPT

- Procure/develop tools** to preserve, manage and provide access to records of this type in their existing form.
- ✓ **Procure/develop tools** to transform the format to the preferred normalized form.
- Provide Additional Information** so that the record type remains understandable/usable over time.
- X Explore Additional Options**

Justification: Software is no longer supported.

Preferred Processing and Transformation Tool(s)

Tools, in preferred order, to be considered for use in processing and preservation actions.

- Harvard Graphics. Research indicates that the original software is required to convert Harvard Graphics files. There are no converters although Microsoft PowerPoint 97 can import CHT, SHW, CH3, and SH3 according to <https://www.experts-exchange.com/questions/10144981/Converting-Harvard-Graphics-to-Power-Point.html>, but still requires the Harvard Graphics software. Harvard Graphics may be able to export files to another format.
- Corel Presentation can open PRS, SHW, and SH3 files. It may not be possible to convert SH3 files as they may be system files.

Preferred Viewer/Access Software

- OpenOffice/LibreOffice
- Microsoft PowerPoint

Harvard Graphics ChartXL

NARA Format ID: NF00207

Extension(s):

- cht

Documentation

- The CHT file extension is associated with the Harvard Graphics ChartXL, a graphics and data analyzing software used to create chart results.
- [Wikipedia entry for Harvard Graphics](#)
- [Fileextension.org entry for CHT](#)

Risk and Prioritization Analysis

- Low Risk
- Moderate Risk
- High Risk
- 6 Numeric Risk Rating
- 14 Numeric Prioritization Meeting

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: PPT
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: Software is no longer supported in the marketplace.

Preferred Processing and Transformation Tool(s)

- Harvard Graphics. Research indicates that the original software is required to convert Harvard Graphics files. There are no converters although Microsoft PowerPoint 97 can import CHT, SHW, CH3, and SH3 according to <https://www.experts-exchange.com/questions/10144981/Converting-Harvard-Graphics-to-Power-Poing.html>,

but still requires the Harvard Graphics software. Harvard Graphics may be able to export files to another format.

Preferred Viewer/Access Software

Note that NARA does not provide viewer access software

- OpenOffice/LibreOffice
- Microsoft PowerPoint

Keynote presentation file

NARA Format ID: NF00

Extension(s):

- key

Documentation

- The Keynote Presentation is XML based and may contain basic text documents or elaborated multi-page brochures, including images, special texts, tables, graphs, charts and more. The key file is basically compressed ZIP archive that contains the main presentation document, previews and some metadata. Normally, KEY file format cannot be converted to other presentation formats with all its features. However, Keynote offers the possibility of exporting the presentation to MOV movies, and to PowerPoint PPS format, at the cost of quality.
- [ArchiveTeam entry for KEY](#)
- [Fileextensions.org entry for KEY](#)
- [Wikipedia entry for Keynote](#)
- www.apple.com/mac/keynote

Risk and Prioritization Analysis

Supply the Risk Level and Numeric Rating and the Prioritization Numeric Rating as generated with the Format Risk and Prioritization Matrix for this file format.

- Low Risk
 - Moderate Risk
 - High Risk
- 14 Numeric Risk Rating
-22 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: PDF, MPG, JPEG, TIFF, PNG, or PPTX (depending on content)
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.

- Provide Additional Information** so that the record type remains understandable/usable over time.
- Explore Additional Options**

Justification: Software is proprietary. In most cases files should be converted to PPTX as these are typically presentations.

Preferred Processing and Transformation Tool(s)

- Keynote is required to open the files and convert them to another format.

Preferred Viewer/Access Software

- Depends on preservation format

Lotus Freelance Smartmaster Graphics MAS

NARA Format ID: NF00236

Extension(s):

- mas

Documentation

- Lotus Freelance Graphics is an information graphics and presentation program. The Windows-compatible version allowed users to create and compile text, digital images, diagrams, basic drawings and charts (such as bar charts and pie charts) into a digital slide show. It was originally a drawing tool, but was enhanced to include charting by either manually inputting data or importing data from the Lotus 1-2-3 spreadsheet program. The MAS file is a sidecar file that stores smartmaster data. It is not the presentation file format.
- [Fileextension.org entry for MAS](#)
- [Wikipedia entry for Lotus Freelance Graphics](#)

Risk and Prioritization Analysis

- Low Risk
- Moderate Risk
- High Risk
- 6 Numeric Risk Rating
- 16 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: TBD
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: Additional information is needed about what this file contains as it is not the presentation file format for this application.

Preferred Processing and Transformation Tool(s)

- TBD

Preferred Viewer/Access Software

- TBD

Microsoft PowerPoint for Macintosh 4.0-5.2

NARA Format ID: NF00286

Extension(s):

- ppt

Documentation

- [OpenOffice.org's documentation of the Microsoft Compound Document file format](http://openoffice.org/docs/MS-Office-98-Macintosh-Edition/)
- <http://fileformats.archiveteam.org/wiki/PPT>
- [Microsoft PowerPoint for Mac FAQ](#)
- [Wikipedia entry for Microsoft Office 98 Macintosh Edition](#)

Risk and Prioritization Analysis

- Low Risk
- Moderate Risk
- High Risk
- 5 Numeric Risk Rating
- 7 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: PPTX
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: The version of this software is no longer supported.

Preferred Processing and Transformation Tool(s)

- A version of Microsoft PowerPoint 2003 or earlier is required to open these files (later versions are not backwards compatible). Once updated to the Microsoft PowerPoint 97-2003 format, the file can then be opened in current versions of PowerPoint and converted to PPTX.

Preferred Viewer/Access Software

Note that NARA does not provide viewer access software

- OpenOffice/LibreOffice
- Microsoft PowerPoint

Microsoft PowerPoint for Macintosh 98

NARA Format ID: NF00287

Extension(s):

- ppt

Documentation

- [OpenOffice.org's documentation of the Microsoft Compound Document file format](http://openoffice.org/docs/MS-Office-98-Macintosh-Edition/)
- <http://fileformats.archiveteam.org/wiki/PPT>
- [Microsoft PowerPoint for Mac FAQ](#)
- [Wikipedia entry for Microsoft Office 98 Macintosh Edition](#)

Risk and Prioritization Analysis

- Low Risk
- Moderate Risk
- High Risk
- 5 Numeric Risk Rating
- 7 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: PPTX
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: The version of this software is no longer supported.

Preferred Processing and Transformation Tool(s)

- A version of Microsoft PowerPoint 2003 or earlier is required to open these files (later versions are not backwards compatible). Once updated to the Microsoft PowerPoint 97-2003 format, the file can then be opened in current versions of PowerPoint and converted to PPTX.

Preferred Viewer/Access Software

Note that NARA does not provide viewer access software

- OpenOffice/LibreOffice

Microsoft PowerPoint

Microsoft PowerPoint for Macintosh 2001

NARA Format ID: NF00285

Extension(s):

- ppt

Documentation

- [OpenOffice.org's documentation of the Microsoft Compound Document file format](http://openoffice.org/docs/MS-Office-98-Macintosh-Edition/)
- <http://fileformats.archiveteam.org/wiki/PPT>
- [Microsoft PowerPoint for Mac FAQ](#)
- [Wikipedia entry for Microsoft Office 98 Macintosh Edition](#)

Risk and Prioritization Analysis

- Low Risk
- Moderate Risk
- High Risk
- 5 Numeric Risk Rating
- 7 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: PPTX
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: The version of this software is no longer supported.

Preferred Processing and Transformation Tool(s)

- A version of Microsoft PowerPoint 2003 or earlier is required to open these files (later versions are not backwards compatible). Once updated to the Microsoft PowerPoint 97-2003 format, the file can then be opened in current versions of PowerPoint and converted to PPTX.

Preferred Viewer/Access Software

Note that NARA does not provide viewer access software

- OpenOffice/LibreOffice
- Microsoft PowerPoint

Microsoft PowerPoint for Macintosh v.X

NARA Format ID: NF00288

Extension(s):

- ppt

Documentation

- [OpenOffice.org's documentation of the Microsoft Compound Document file format](http://openoffice.org/docs/MS-Office-98-Macintosh-Edition/)
- <http://fileformats.archiveteam.org/wiki/PPT>
- [Microsoft PowerPoint for Mac FAQ](#)
- [Wikipedia entry for Microsoft Office 98 Macintosh Edition](#)

Risk and Prioritization Analysis

- Low Risk
- Moderate Risk
- High Risk
- 5 Numeric Risk Rating
- 7 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: PPTX
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: The version of this software is no longer supported.

Preferred Processing and Transformation Tool(s)

- A version of Microsoft PowerPoint 2003 or earlier is required to open these files (later versions are not backwards compatible). Once updated to the Microsoft PowerPoint 97-2003 format, the file can then be opened in current versions of PowerPoint and converted to PPTX.

Preferred Viewer/Access Software

Note that NARA does not provide viewer access software

- OpenOffice/LibreOffice

Microsoft PowerPoint

Microsoft PowerPoint Presentation 4.0

NARA Format ID: NF00290

Extension(s):

- ppt

Documentation

- [OpenOffice.org's documentation of the Microsoft Compound Document file format](http://openoffice.org's%20documentation%20of%20the%20Microsoft%20Compound%20Document%20file%20format)
- <http://fileformats.archiveteam.org/wiki/PPT>
- [Wikipedia entry for Microsoft PowerPoint](#)

Risk and Prioritization Analysis

- Low Risk
- Moderate Risk
- High Risk
- 2 Numeric Risk Rating
- 0 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: PPTX
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: The version of this software is no longer supported.

Preferred Processing and Transformation Tool(s)

- A version of Microsoft PowerPoint 2003 or earlier is required to open these files (later versions are not backwards compatible). Once updated to the Microsoft PowerPoint 97-2003 format, the file can then be opened in current versions of PowerPoint and converted to PPTX.

Preferred Viewer/Access Software

Note that NARA does not provide viewer access software

- OpenOffice/LibreOffice
- Microsoft PowerPoint

Microsoft PowerPoint Presentation 95

NARA Format ID: NF00292

Extension(s):

- ppt

Documentation

- [OpenOffice.org's documentation of the Microsoft Compound Document file format](http://openoffice.org's%20documentation%20of%20the%20Microsoft%20Compound%20Document%20file%20format)
- <http://fileformats.archiveteam.org/wiki/PPT>
- [Wikipedia entry for Microsoft PowerPoint](#)

Risk and Prioritization Analysis

- Low Risk
- Moderate Risk
- High Risk
- 2 Numeric Risk Rating
- 0 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain file format in its existing format.
- Transform file to a new format.
Selected Format: PPTX
- Procure/develop tools to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools to transform the format to the preferred normalized form.
- Provide Additional Information so that the record type remains understandable/usable over time.
- Explore Additional Options

Justification: The version of this software is no longer supported.

Preferred Processing and Transformation Tool(s)

- A version of Microsoft PowerPoint 2003 or earlier is required to open these files (later versions are not backwards compatible). Once updated to the Microsoft PowerPoint 97-2003 format, the file can then be opened in current versions of PowerPoint and converted to PPTX.

Preferred Viewer/Access Software

Note that NARA does not provide viewer access software

- OpenOffice/LibreOffice
- Microsoft PowerPoint

Microsoft PowerPoint Presentation 97-2002

NARA Format ID: NF00284

Extension(s):

- ppt

Documentation

- [OpenOffice.org's documentation of the Microsoft Compound Document file format](http://openoffice.org/docs/MS-Office-97-2002-Compound-Document-File-Format.html)
- <http://fileformats.archiveteam.org/wiki/PPT>
- [Wikipedia entry for Microsoft PowerPoint](https://en.wikipedia.org/wiki/Microsoft_PowerPoint)

Risk and Prioritization Analysis

- Low Risk
 - Moderate Risk
 - High Risk
- 17 Numeric Risk Rating
17 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain** file format in its existing format.
- Transform** file to a new format.
Selected Format:
- Procure/develop tools** to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools** to transform the format to the preferred normalized form.
- Provide Additional Information** so that the record type remains understandable/usable over time.
- Explore Additional Options**

Justification: Microsoft PowerPoint 97-2007 is considered an acceptable format in NARA's transfer guidance.

Preferred Processing and Transformation Tool(s)

- Microsoft PowerPoint
- OpenOffice/LibreOffice

Preferred Viewer/Access Software

Note that NARA does not provide viewer access software

- OpenOffice/LibreOffice
- Microsoft PowerPoint

Microsoft PowerPoint Presentation OpenXML

NARA Format ID: NF00289

Extension(s):

- pptx
- pptm
- potx
- potm
- ppam
- ppsx
- ppsm
- sldx
- sldm
- thmx

Documentation

- [OpenOffice.org's documentation of the Microsoft Compound Document file format](http://openoffice.org/documentation/microsoft-compound-document-file-format)
- <http://fileformats.archiveteam.org/wiki/PPT>
- [Wikipedia entry for Microsoft PowerPoint](http://en.wikipedia.org/wiki/Microsoft_PowerPoint)

Risk and Prioritization Analysis

- Low Risk**
 - Moderate Risk**
 - High Risk**
- 29 Numeric Risk Rating**
29 Numeric Prioritization Rating

Proposed Preservation Plan

- Retain** file format in its existing format.
- Transform** file to a new format.
Selected Format:
- Procure/develop tools** to preserve, manage and provide access to records of this type in their existing form.
- Procure/develop tools** to transform the format to the preferred normalized form.
- Provide Additional Information** so that the record type remains understandable/usable over time.
- Explore Additional Options**

Justification: Microsoft PowerPoint OpenXML is considered an acceptable format in NARA's transfer guidance.

Preferred Processing and Transformation Tool(s)

- Microsoft PowerPoint
- OpenOffice/LibreOffice

Preferred Viewer/Access Software

Note that NARA does not provide viewer access software

- OpenOffice/LibreOffice
- Microsoft PowerPoint