



Retro Media: Accessibility of Removable Digital Media Formats in the University of Michigan FDLP Collection

Tuesday April 12, 2022

Spring 2022 DLC Virtual Meeting

Introduction: David Walls (GPO), Catherine Morse (U-M)

Presenters: Marlaine Magewick (U-M), Margaret Grumeretz (U-M)



Introduction to the Project

David Walls

Preservation Librarian at United States
Government Publishing Office

Introduction to the Project

Catherine Morse

Government Information, Law and
Political Science Librarian at the
University of Michigan

Presentation Overview

Project Background

Project Approach and Scope

Assessment

Findings

Conclusion

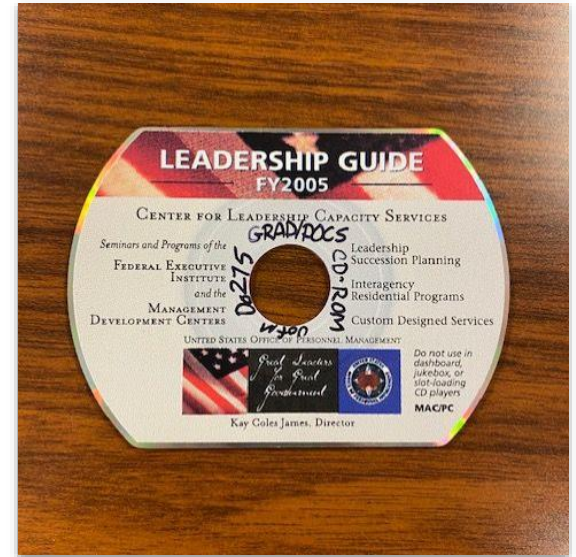
Q&A

Project Background

FDLP Context - Retro Media in Collections

Based on **preliminary** results from the FDLP 2021 Biennial Survey:

- 993 FDLP libraries have tangible depository material in any format
- About 700 FDLP libraries have DVDs, CD-ROMs, VHS tapes, and floppy diskettes (removable media)
- 213 have removable media that can no longer be used, and an additional 177 libraries are not sure if their items are still usable
- 72 libraries have tried to develop local solutions to providing access to the content



Project Partners: Weekly meetings with the GPO staff!



Local Context: University of Michigan FDLP Collection

- UM has been a Federal Depository Library since 1884
- FDLP collection is physically dispersed across libraries on campus
- Centralized control over hardware / public computers



UM School of Information: Capstone Course

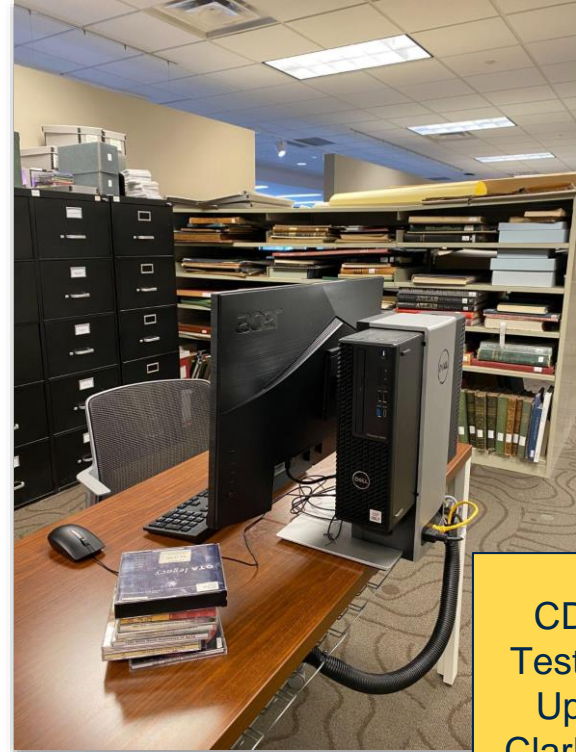
- Students work with client organizations on a “Digital Curation” project
- Final semester of our MSI Program (12 weeks)
- 1-2 students per project



Project Approach and Scope

Hardware & Software Dependencies

- Accessed through public university computers
 - Up to date
 - CD drives
 - Few admin abilities
 - Could not install / launch most executable files
- Used programs already installed on the public computers
 - Could not download programs to assist us (e.g. FTK Imager)



CD-ROM
Testing Set-
Up in the
Clark Library

Focus on Access (Before Preservation)

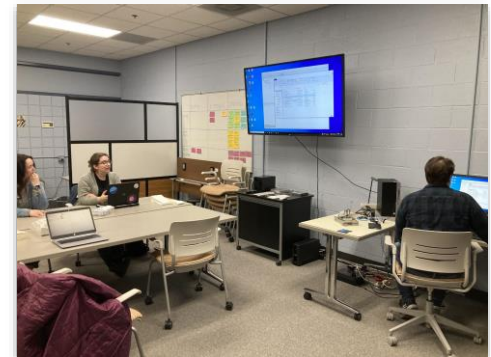
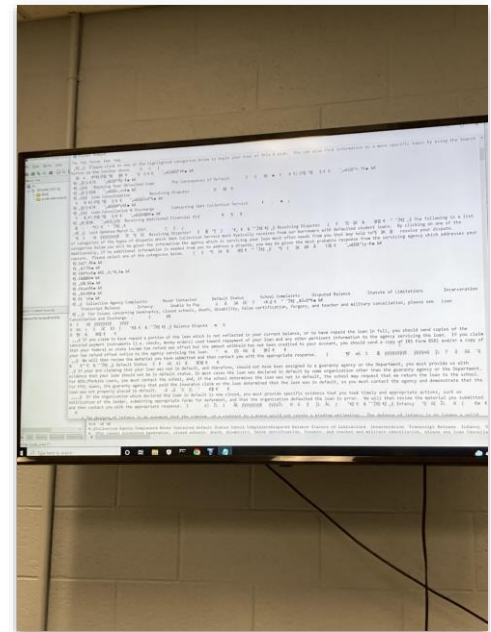
- Kept patron access to materials in mind
- Used available university computers at the Clark Library
 - The Hatcher Graduate Library has four computers with working disk drives
- Pleasantly surprised by the physical condition of the disks
 - Did not encounter examples of bit rot
- Considered the preliminary steps of preservation
 - Visited UM's Digital Preservation Lab



Part of the sample of GPO CD-ROMs at the Clark Library



Visit to UM's Digital Preservation Lab



Assessment

Data Gathering Tool: Google Form

- Catalog information
- Media type and label information
- Content information
 - Will it run?
 - Index
 - Availability in other formats
- Time spent on assessment
- Notes

The screenshot shows a Google Form titled "Retro Media Digital Preservation Project". At the top, it displays the user's email "marggrum@umich.edu" with a "Switch account" link and a profile icon. Below this, a message states: "The name and photo associated with your Google account will be recorded when you upload files and submit this form. Only the email you enter is part of your response." A red asterisk indicates a required field.

*** Required**

Email *

Your email _____

1). Title *

Your answer _____

2). Title Variation

Your answer _____

3). Volume/Issue/Year information

Your answer _____

4). UM Call Number (eg Do or DoX number) - try using call number search in Library Catalog <https://search.lib.umich.edu/catalog>

⋮

How we approached each CD-ROM and diskette

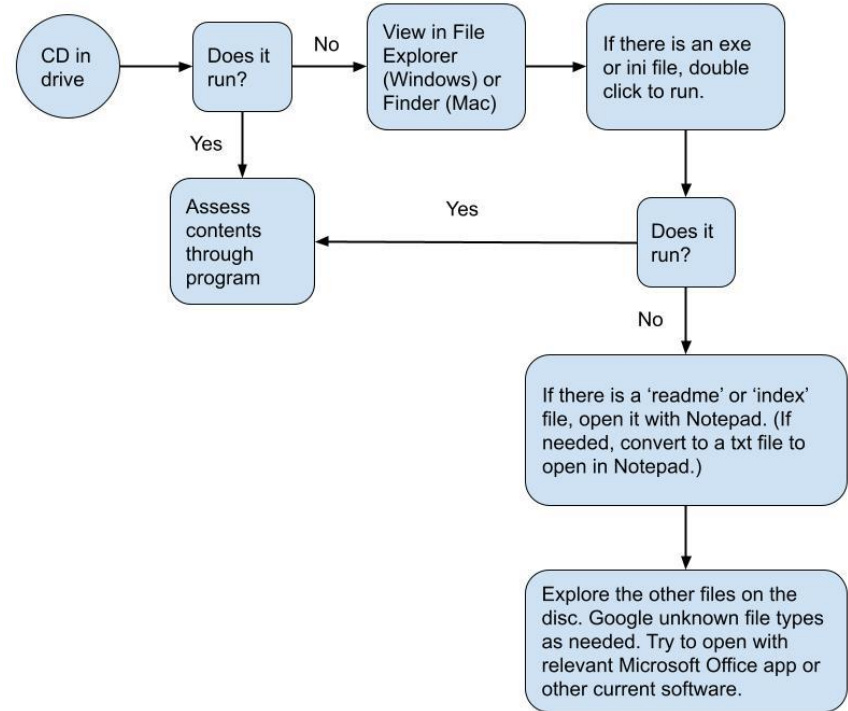
The flowchart to the right describes our approach to access CD data.

Very few CDs automatically ran when we put them in the disk drive. We still tried to run programs contained on each CD.

Instead, we explored each CD in File Explorer (Windows) or Finder (Mac).

We tried to open any 'data' files and find a list of the contents.

If there wasn't a clear index of the content, we saved an index of the file directory.



Is the information available elsewhere?

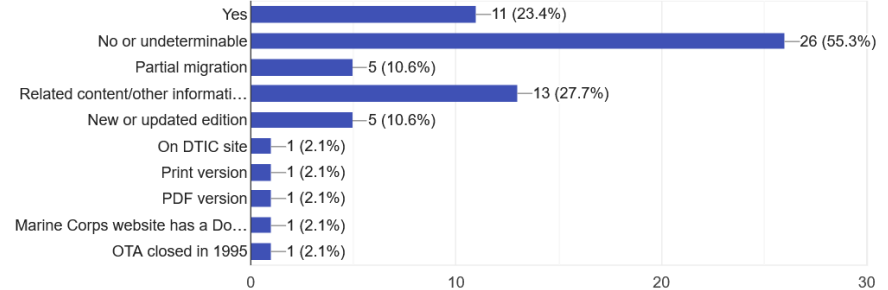
Limited scope to **publicly available** government websites; agency sites and repositories.

Still, many other resources exist that contain these publications, such as:

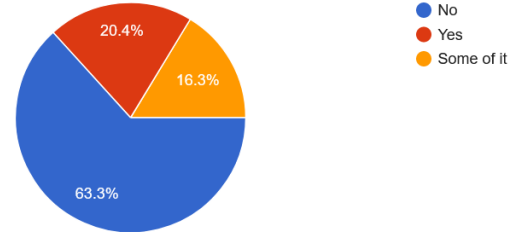
- ICPSR
- Social Explorer
- IPUMS
- Many more!

Has the agency migrated this data to their public facing website?

15). Has the content been migrated to an Agency Website or Server?



17). Is the content available as a paper publication?





Has the agency migrated this data to their public facing website?

This was the most time consuming part of assessment!

- Unfamiliar data types and datasets
- Tried to ‘match’ them to content online
 - If the CD was completely inaccessible, we only had catalog information
- Many of the CDs were collections of data sets, publications, and related

Content (videos, lesson plans, quizzes, maps, etc)

- We found partial matches or related content on the agency’s website



Findings

Findings

Most items worked (in some way)!

- Most CDs tried to play and/or contained readable content
- Executables were often too “retro” to run on an up-to-date, public computer

Four main themes for access:

1. Incomprehensible or Completely Inaccessible
2. Outdated, Bespoke, or Proprietary Software
3. Retro Software with Usable Data Files
4. Basically Print

Incomprehensible or Completely Inaccessible

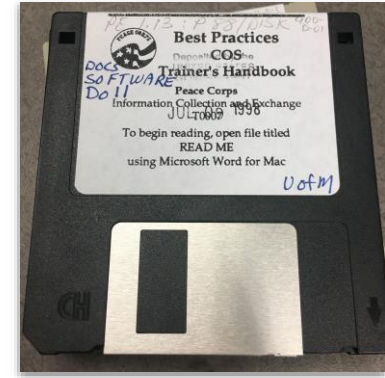
CDs and diskettes either had incomprehensible file directories (meant to be navigated with an on-disk software) or inaccessible data files.

Files named or formatted to be referenced by an on-disk software that will no longer run.

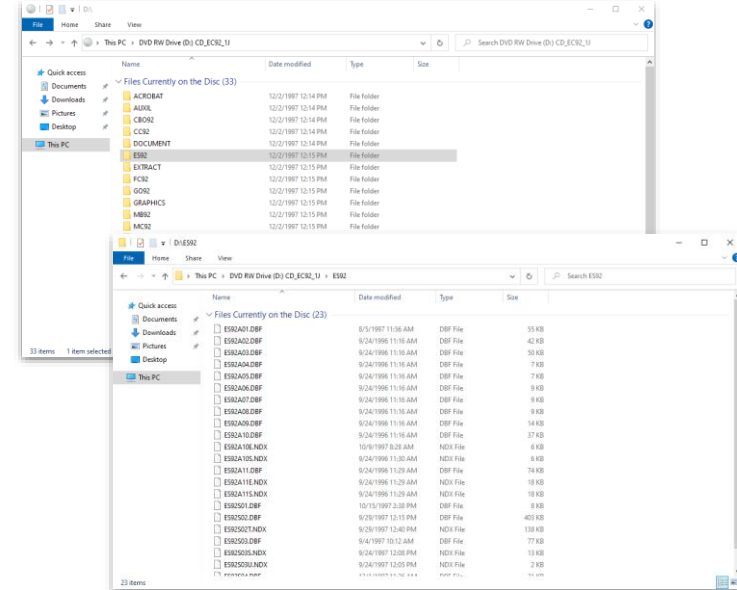
Examples:

- *Best practices : COS trainer's handbook*
- *1992 Economic Census: Report Series*

Files and folders are not easily understandable without the use of on-disk discovery software.



**1992
Economic Census**



Outdated, Bespoke, or Proprietary Software

The file structure was clear and it was relatively easy to identify file types and data.

Many included README, CONTENTS, or similar txt files.

Example:

- *TigerLine CDs and the US Census Bureau*

There is data on these CDs that is not on the Census website, SocialExplorer, FRED, and other resources.



TIGER (Topologically Integrated Geographic Encoding and Referencing) Logo

Outdated Software with Usable Data Files

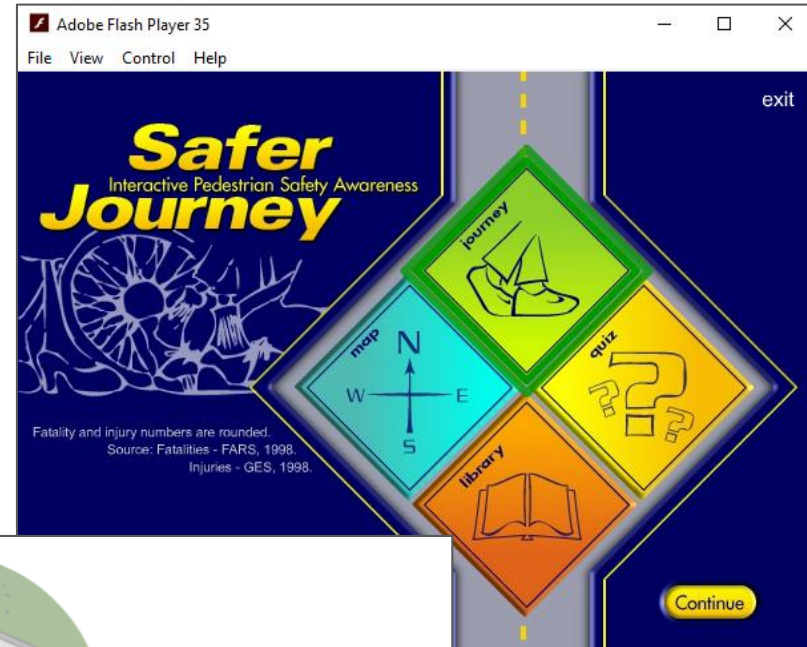
Even if the software wouldn't open, we sometimes found the data files were still accessible.

Opening files in relevant Microsoft Office or other product often worked!

Common formats that were still accessible:
PDF, image files, HTML, tabular data, and more

Example:

- *Safer Journey: Interactive Pedestrian Safety Awareness*



Basically Print

Some CDs were digital versions of print publications or collections.

Most documents were PDFs.

Many PDFs retained some navigation functionality, while others were strung together using HTML.

Still, most on-disk discovery software was not functional.

Example:

- *World War II Inter-Allied Conferences* - Joint History Office

World War II Inter-Allied Conferences



- Letter from the Director for Joint History
- JCS Regrading Memorandum No. 52-73
- [View List of Conferences](#)
- Search the Conferences
- Acrobat Reader Help
- General Preferences
- Exit the CD-ROM

More...

Photo: British and American Combined Chiefs of Staff with President Franklin D. Roosevelt and Prime Minister Winston S. Churchill. Left to Right (seated) GEN. D. C. Marshall, ADM W. D. Leahy, President Roosevelt, Prime Minister Churchill, Field Marshal Sir Alan Brooke, Field Marshal Sir John Dill (standing) MAJGEN L. C. Halls, GEN Sir Hastings Ismay, ADM E. J. King, Marshal of the Royal Air Force Sir Charles Portal, GEN H. W. Arnold, ADM Sir A. S. Cunningham. Quebec Conference, Quebec, Canada, September 1944.

World War II Inter-Allied Conferences

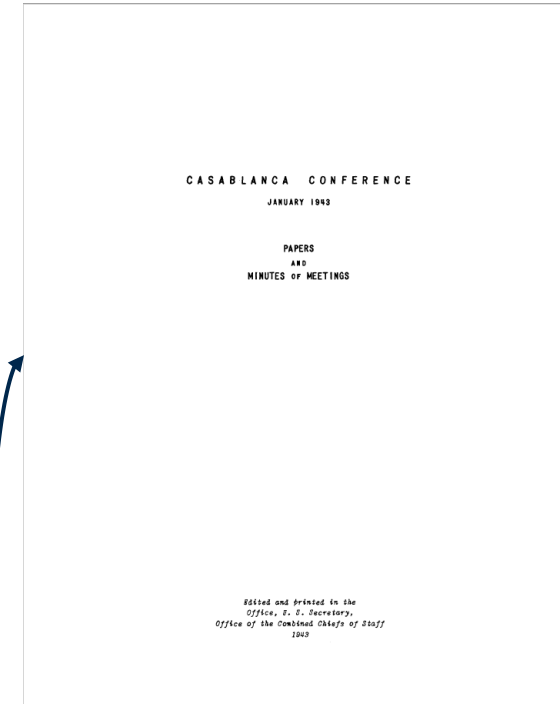
ARCADIA (Washington, D.C., 24 December 1941–14 January 1942). Roosevelt, Churchill, and the U.S. and British Chiefs of Staff conducted their first post-Pearl Harbor strategy conference. The political leaders drafted and signed the Declaration of the United Nations. The military chiefs discussed an invasion of North Africa, completed arrangements for American forces to relieve British troops in Iceland and Northern Ireland, made plans for American reinforcement of the South Pacific, and set up a combined allied command for Southeast Asia.

POST-ARCADIA (Washington, D.C. and London, 23 January 1941–19 May 1942). At twenty meetings, the Combined Chiefs of Staff worked out the details of implementing the ARCADIA decisions. They dealt with force deployments to the Pacific and Great Britain, command arrangements, and the allocation of shipping and supplies. The Combined Chiefs discussed the U.S. relief of British forces in Iceland and Northern Ireland, arrangements for the American buildup in the British Isles, and the availability of landing craft for possible invasions of the European continent in 1942 and 1943.

CASABLANCA CONFERENCE - VOLUME 1 or **VOLUME 2** (Casablanca, Morocco, 14–23 January 1943). This was the first of the great Allied-wide conferences, with Roosevelt, Churchill, their military chiefs of staff, and the French leaders Henri Giraud and Charles de Gaulle in attendance. In the major U.S.-British debate, the British prevailed. The Allies postponed the cross-Channel invasion until 1944, but organized a combined staff to plan for it. For the immediate future, they would continue the Mediterranean campaign with an invasion of Sicily. They also decided to launch a combined strategic air offensive against Germany, and the Americans were to mount a Pacific offensive against Japan. Roosevelt and Churchill issued the Unconditional Surrender doctrine.

TRIDENT (Washington, D.C., 15–25 May 1943). Principal participants were Roosevelt, Churchill, their military chiefs of staff, and Generalissimo Chiang Kai-shek and Stilwell from the China-Burma-India (CBI) theater. The Americans secured British agreement to a cross-Channel invasion with a target date of 1 May 1944. The allies reaffirmed their commitment to the strategic air offensive as preparation for the invasion. They agreed to continue the Mediterranean offensive with the aim of knocking Italy out of the war. The Americans won support for a stepped-up offensive in the Pacific, and the allies discussed operations to assist China.

Back *Main Menu* *Search the Publications* *More...*



Highlights from the Data

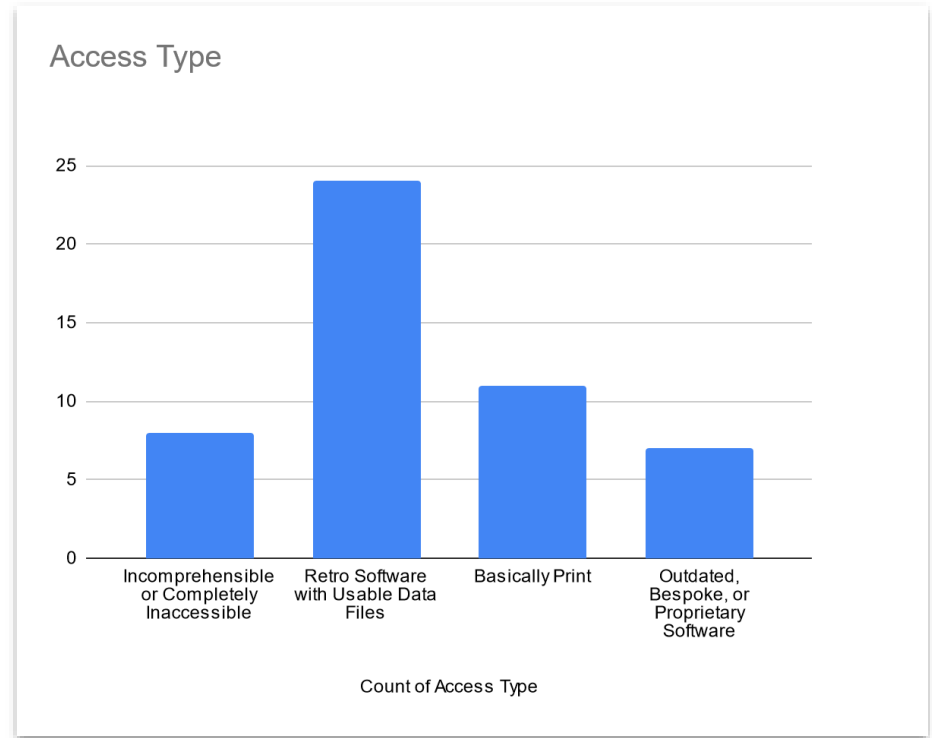
(Preliminary Analysis)

Only 16% of the sample were completely inaccessible. The inaccessible items were distributed between 1988-1999.

“Basically Print” items were distributed between 1996-2005.

Simpler navigation tools (html and pdf) stood the test of time.

Average of 30 minutes to assess each item.



Conclusion

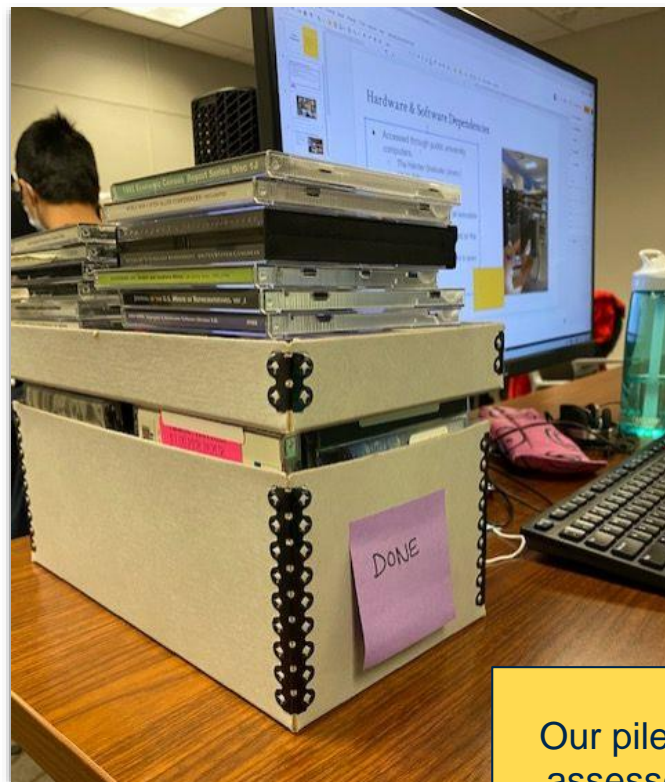
Conclusion

We think this is a replicable process to assess items in your collections!

Accessing the contents of each item is the first step in preservation.

Many of these items contain information that is available on agency websites.

Preservation of the data contained on these removable media objects could be achieved through migration to different formats or emulation.



Our pile of assessed CD-ROMs!

Questions?

Thank you for listening to our presentation!

We hope our work will help inform GPO policy on retro removable media.