



Sponsor: IRS
Dept. No.: P181
Contract No.: TIRNO-99-D-00005
Project No.: 2032H5-19-F-00458

The views, opinions and/or findings contained in this report are those of The MITRE Corporation and should not be construed as an official government position, policy, or decision, unless designated by other documentation.

For Internal MITRE Use. This document was prepared for authorized distribution only. It has not been approved for public release.

This technical data was produced for the U.S. Government under Contract Number TIRNO-99-D-00005, and is subject to Federal Acquisition Regulation Clause 52.227-14, Rights in Data—General, Alt. II, III and IV (DEC 2007) [Reference 27.409(a)].

No other use other than that granted to the U.S. Government, or to those acting on behalf of the U.S. Government under that Clause is authorized without the express written permission of The MITRE Corporation.

For further information, please contact The MITRE Corporation, Contracts Management Office, 7515 Colshire Drive, McLean, VA 22102-7539, (703) 983-6000.

©2019 The MITRE Corporation.
All rights reserved.

McLean, VA

Internal Revenue Service (IRS) Wage & Investment (W&I)

Independent Review of IRS Free File Program

Taxpayer Experience Testing Report September 13, 2019

This page intentionally left blank for two-sided printing.

Executive Summary

Background

The Internal Revenue Service (IRS), in accordance with the Office of Management and Budget's (OMB) directive, launched an e-government initiative to improve government-to-business and government-to-citizen electronic capabilities. The IRS Free File program ("Free File" or "the program") was one such initiative, to provide free and secure online tax return preparation and filing services to taxpayers. The IRS developed a solution in partnership with the Free File Alliance, LLC, that consists of members of the tax software industry.

Free File provides eligible low-income taxpayers with easy access through IRS.gov¹, which offers a list of all free file offerings on an IRS-hosted website. Under the agreement, Free File Alliance members offer both free online tax preparation and free e-filing services at no cost to qualifying taxpayers for federal returns.

Agency leadership engaged MITRE to conduct an independent assessment of the Free File program to ensure continued operations and integrity of the program. A component of this assessment included gathering feedback and perspectives on the taxpayer experience with the Free File program to better understand how taxpayers experience the program.

This report summarizes the findings from in-person usability testing sessions conducted July 22-26, 2019 as part of the Free File program assessment. Specifically, the IRS asked MITRE to collect information about the user experience and satisfaction finding the Free File program online and completing an electronic tax return through Free File software offers. MITRE completed 29 usability testing interviews to evaluate the taxpayer experience and provides in this document recommendations for improving the Free File program.

Methods

MITRE conducted in-person usability testing sessions with taxpayers who were identified in the Compliance Data Warehouse (CDW) as having submitted a tax return with the Free File program in Tax Year (TY) 2018. MITRE sent invitation letters to 2,500 randomly selected prior free filers in Chicago, IL², and scheduled interviews with taxpayers who responded to the invitation. In total, MITRE completed 29 usability testing sessions with Chicago taxpayers. The objectives of these interviews were to understand how taxpayers locate the Free File program options; understand how taxpayers select a software provider; capture usability issues with IRS websites related to the Free File program; capture usability issues with specific software provider platforms; and understand taxpayers' previous experiences with the Free File program.

During the sessions, participants completed fictitious scenarios to evaluate the experiences of completing three tasks: 1) locating the Free File program online, 2) selecting a Free File software offer, including with the Free File software lookup tool, and 3) completing a tax return. MITRE randomly selected three Free File software offers to test with taxpayers; each participant filed a fictitious return with one of the three selected offers. Taxpayers used fictitious information (e.g., Form W-2s, Form 1098-E, and other documentation) to complete the tasks. MITRE researchers

¹ <https://www.irs.gov/>

²The MITRE research team selected the Chicago, IL location for two reasons: 1) sufficient volume of known free filers within a geographical area; 2) familiarity with the location due to having conducted research on the redesigned 1040 Form in October, 2018, with a distinct population of taxpayers (taxpayers who filed on paper).

observed the sessions and then asked debriefing questions to establish what aspects of the Free File system (both the IRS.gov Free File pages and the specific Free File software offer web pages) caused confusion, errors, or frustration. In addition to data on the usability of the Free File system, MITRE also collected and analyzed data on taxpayer satisfaction and experience (via brief questionnaires), and taxpayers' perceptions of the Free File system components and the Free File program.

Findings

MITRE identified and reported all usability issues observed by the research team with each of the three Free File usability tasks and provided suggested solutions for addressing each of these issues individually. Drawing on the data collected from the usability tasks, analysis of qualitative data gathered during debriefings and interview questions, the satisfaction and user experience questionnaires, and metrics on taxpayer behaviors and selections during the tasks, MITRE identified the following high-level findings:

- **Taxpayers lack understanding of what the Free File program is and its relationship to the IRS.** Despite the fact that MITRE specifically recruited taxpayers recorded in CDW as having previously used Free File, many participants conflated the Free File program with other forms of filing taxes for free, including free commercial software, and were unsure whether they had used Free File or a free commercial version in the past. Some reported not having heard of Free File until the past year. Taxpayers also seemed unclear on the relationship between the IRS and Free File. A few never sought out IRS.gov and did not seem to realize that they should use IRS resources to find the program, whereas others expressed surprise that Free File offers were all provided by third-party tax software providers and not directly from the IRS.
- **Taxpayers struggled to find the Free File landing page, including through IRS.gov.** Most taxpayers approached finding Free File by starting with a search engine query, using keywords such as “IRS,” “free tax filing,” and “free file.” This suggests that the IRS needs to plan for taxpayers to enter the Free File system from search query results, rather than from the IRS home page. Some ended up on commercial software provider websites; most were able to eventually find the Free File landing page on their own, though through various routes that caused confusion. Some taxpayers meandered through pages of IRS.gov looking for Free File and expressed frustration that they could not find it.
- **Taxpayers experienced difficulties and confusion with selecting a software offering,** particularly when evaluating Earned Income Tax Credit (EITC) eligibility.
 - EITC eligibility requirements were confusing for taxpayers and a substantial proportion (about one-third) committed errors when selecting a Free File software offer using the lookup tool due to erroneously answering the EITC eligibility question. Information on IRS.gov about EITC eligibility largely did not resolve this problem.
 - Common issues taxpayers had with the lookup tool included not noticing the lookup tool, not understanding its purpose, and committing errors on EITC eligibility.
 - When taxpayers commit errors using the lookup tool, the results could include Free File software offers taxpayers may not be eligible for; taxpayers might only discover this down the road when they are midway through completing a tax return. Incorrectly

selecting “yes” for EITC eligibility in particular causes more results returned from the lookup tool than are accurate.

- **Taxpayers expressed that they were overwhelmed with choices and information.** Many taxpayers stated that there were simply too many options and too many eligibility criteria to digest and understand. This led to taxpayer frustration and to taxpayers having difficulty selecting a software offering, both on the Free File software offers page and, in the results, returned from the lookup tool.
- **Taxpayers used strategies beyond eligibility criteria to select software offers.** The most common reasons taxpayers selected a particular offer were prior experience with a tax software provider and name recognition. Some taxpayers expressed that they needed to rely on rationale beyond eligibility criteria to choose a Free File software offer because there were so many choices. This has the potential for taxpayers to commit errors and select Free File software offers for which they are not eligible, if criteria such as name recognition override the current year’s eligibility criteria.
- **Common usability issues with the selected tax preparation software programs included trouble finding where to report adjustments to income, difficulty choosing between filing statuses, and trouble navigating different systems’ flow.** Taxpayers often didn’t realize that options selected at various points in the return preparation process, such as selecting checkboxes up front to indicate what types of adjustments and deductions they had, would dictate their ability to enter those amounts in later. This was relevant for the student loan interest deduction included in the test scenario. Additionally, when filing status was not clear cut (as in the test scenario), participants had trouble getting the information they needed to determine filing status correctly; some systems did not walk taxpayers through the necessary steps. Additionally, various aspects of the flow of tax preparation systems caused confusion. Some taxpayers had trouble navigating between different components of the system. The “Quick File” option in one system caused major problems when taxpayers found that they did not have the tax knowledge to fill out their forms *a la carte*.
- **Taxpayer ratings of ease and satisfaction varied by task, software provider, and demographic characteristics.** Taxpayers rated finding Free File and selecting a Free File software offer as acceptably easy tasks, whereas filing a return was rated as more difficult. Moreover, ease of completing a return was greater with some Free File software offers than others, and the results indicate that struggling with a tax software provider is associated with a lower overall satisfaction rating on the Free File system as a whole. This suggests that taxpayer experience with a particular Free File member program could color taxpayer perceptions of the entire Free File experience. Examining patterns in the small sample in this study, there is some evidence that Free File usability is lowest for taxpayers in the upper two age terciles represented in this study (over age 35).

Recommendations

MITRE provides the following issue-level recommendations:

- **Standardize how Free File is referenced on IRS platforms and communications.** Currently, different web pages at IRS.gov have different labels and titles for Free File, such as buttons that say, “File Your Taxes for Free” versus “Free File.” Standardize all references to one label or title and use that label/title in all communications about the program. Encourage Free File members to follow suit. This should also help taxpayers access Free File from web searches, as it may influence their search terms.
 - Clarify the IRS’s relationship to the Free File program and the software offers
 - Use visual cues like third-party logos on the IRS site to signal that taxpayers will go to the software provider website
 - Improve taxpayers’ ability to find the Free File landing page both from IRS.gov web pages (e.g., the home page) and directly from internet search results
- **Take steps to increase ease of understanding eligibility requirements.** The current volume and complexity of eligibility requirements may lead to taxpayer mistakes in selecting a Free File software offer. Clearer, simplified eligibility requirements will help taxpayers focus on the important information to choose a Free File software offer.
 - Reduce the amount of information presented in individual boxes on the software offers page.
 - Consider presenting eligibility criteria on the software offers page in a new format, such as in a grid view where all criteria are presented consistently, or via tooltips.
 - Include information on eligibility criteria in the results returned by the software lookup tool.
- **Ensure that taxpayers understand that determining eligibility for a software offer is ultimately their responsibility.** Taxpayers expressed the belief that their eligibility would be ‘checked’ at some point along the way, for example, by the software lookup tool. MITRE recommends that the IRS incorporate language on the Free File pages and lookup tool to help taxpayers understand that misunderstanding or misreporting eligibility criteria can lead to their selecting a Free File software offer for which they are not eligible.
- **Eliminate or change the EITC eligibility question in the lookup tool and on the software offers page.** If the IRS stated on the Free File site that all taxpayers eligible for EITC are eligible for Free File, the question could be removed from the tool. MITRE recognizes this would be a topic for negotiation between the IRS and the Free File Alliance, LLC (FFA) because of how that could impact some companies’ appearance in the tool. If the IRS chooses to leave EITC in the lookup, MITRE recommends linking the question to the EITC eligibility tool, but ONLY after conducting usability testing on the EITC eligibility tool and addressing the results.
- **Recommend suggested solutions be shared with FFA to increase usability of members’ tax preparation software systems.** MITRE recommends that the IRS share the FFA member website suggested solutions within this report and findings identified in the taxpayer journey study with the FFA. This can help member programs increase the

likelihood of taxpayers having a positive experience with Free File by improving look and feel, communication of eligibility on member home pages, and how to best walk taxpayers through their online tax return as they fill it out. Recognize that the experience of using a particular member offer will affect how taxpayers perceive the Free File experience as a whole.

- **Conduct research on the usability taxpayer access and use of the Free File system.** MITRE recommends that the IRS and Free File members conduct iterative testing to evaluate system design and usability. MITRE recommends that this usability testing include representation of different age groups, income groups, and education groups, to ensure that the Free File system is maximally usable for all eligible taxpayers.
- **Conduct research on Free File awareness, attending to different demographic groups' awareness.** The present study was not designed to assess awareness of Free File among the taxpayer population. MITRE recommends that the IRS conduct future research to better understand whether taxpayers are aware of Free File, their understandings of what the program is, and their reasons for using or not using Free File. MITRE recommends including both previous free filers and eligible taxpayers who have not previously used Free File in this research.

Table of Contents

Table of Figures	vii
Table of Tables	viii
1 Introduction	1
1.1 Research Objectives.....	2
1.2 Scope.....	2
1.3 Study Limitations.....	3
1.4 Organization of This Document.....	5
2 Methods Overview	6
2.1 Overview of Research Process.....	6
2.2 Recruitment.....	6
2.3 Overview of Testing Scenarios.....	8
2.4 Selection of IRS Free File Member Programs for Testing	10
2.5 Interview Process.....	11
3 Study Findings and Recommendations	14
4 Usability Findings	23
4.1 Demographic Characteristics of Testing Participants.....	23
4.2 Usability Issues with Suggested Solutions	25
5 User Experience Questionnaire Findings	63
5.1 Summary Statistics.....	64
6 Debriefing Findings.....	73
6.1 Overall Experience.....	73
6.2 Previous Knowledge of IRS Free File Program	74
6.3 Previous Experience Using the IRS Free File Program.....	75
6.4 Where Taxpayers Would Go for Help.....	76
6.5 Taxpayer Reflections on Process to Complete Return	76
6.6 Taxpayer Reflections on Support from the IRS.....	78
6.7 Taxpayer Reflections on Entering Military Pay	78
7 Taxpayer Pathways and Metrics.....	80
7.1 Task 1: Free File Landing Page Findability Testing.....	81
7.2 Task 2: Lookup Tool Testing.....	88
7.3 Participants’ Free File Offer Selections Across All Tasks	90
8 Conclusion.....	94
9 References	95

IRS Free File Program Usability Testing..... C-11

Table of Figures

Figure 1. Eligibility Criteria Bullets on Free File Software Offers Page
(<https://apps.irs.gov/app/freeFile/>)..... 10

Figure 2. Screenshot of Computer Desktop Used for Testing..... 12

Figure 3. IRS Home Page (IRS.gov). 27

Figure 4. Free File Program Landing Page, Above the Fold..... 29

Figure 5. Free File Program Landing Page, Halfway Down the Page..... 29

Figure 6. Free File Landing Page..... 30

Figure 7. Free File Landing Page—Start Free File Now..... 31

Figure 8. Current 1040NOW.NET Free File Software Offer Information Box. 33

Figure 9. Free File Software Offers Page. 37

Figure 10. EITC Question in Free File Software Lookup Tool..... 39

Figure 11. EITC Pop-up Modal from the Lookup Tool..... 40

Figure 12. State Return Question From the Lookup Tool. 45

Figure 13. State Return Pop-up From the Lookup Tool..... 45

Figure 14. "Eligibility Verification" Text on Lookup Tool Page Misrepresents Purpose..... 48

Figure 15. Access to the Lookup Tool From Free File Software Offers Page. 49

Figure 16. Lookup Tool State Question 1 – Residence. 51

Figure 17. Lookup Tool State Question 2 – Filing a State Return. 51

Figure 18. Free File Usability SEQ Scoring Bands..... 64

Figure 19. Average SEQ Ratings Across Tasks. 65

Figure 20. SUS Scale for Free File Program Usability Study. 65

Figure 21. Average UMUX Score. 66

Figure 22. Average UMUX Responses. 66

Figure 23. Task 3 Average SEQ Ratings by Vendor..... 67

Figure 24. Average UMUX Scores by Vendor..... 68

Figure 25. Average SEQ Ratings Across Participant Education Level by Task. 69

Figure 26. Average UMUX Scores by Participant Education Level..... 70

Figure 27. Average SEQ Ratings Across Participant Age by Task..... 71

Figure 28. Average UMUX Scores by Participant Age..... 72

Figure 29. Previous Knowledge Quotes About Free File Program. 74

Figure 30. Task 1 Acceptable-Optimal Pathways..... 82

Figure 31. Task 1 Acceptable-Suboptimal Pathways. 82

Figure 32. Task 1 Unacceptable Pathways. 83

Figure 33. Task 2 Acceptable-Optimal Pathways..... 85

Figure 34. Task 2 Acceptable-Suboptimal Pathways. 85

Figure 35. Task 2 Unacceptable Pathways. 86

Figure 36. Free File Offer Lookup Tool Result for Correct Entry of Selection Scenario 1
Information. 92

Figure 37. Free File Offer Lookup Tool Result for Correct Entry of Selection Scenario 2
Information. 93

Figure 38. Overview of Sampling Process. A-2

Figure 39. Distribution of Age for National Free Filers and Local (Chicago) Free Filers, TY 2018..... A-3
 Figure 40. Joint Distribution of Age and AGI among National Free Filers and Local (Chicago) Free Filers, TY 2018. A-4
 Figure 41. SEQ Score Bands. A-17
 Figure 42. Grades, Adjectives, Acceptability and Net Promoter Score..... A-18
 Figure 44. IRS Invitation Letter..... C-1
 Figure 45. MITRE Invitation Letter..... C-2
 Figure 46. Screenshot of MITRE Recruitment Website..... C-3
 Figure 47. Participant Consent Form..... C-4
 Figure 48. Selection Scenario 1. C-5
 Figure 49. Selection Scenario 2. C-6
 Figure 50. Filing Scenario..... C-7
 Figure 51. Single Question Evaluation. C-8
 Figure 52. User Experience Questionnaire. C-9
 Figure 53. Honorarium Receipt. C-10

Table of Tables

Table 1. Document Organization..... 5
 Table 2. Count of Selected Free File Software Offers Used in Interviews..... 11
 Table 3. Taxpayer Lack of Awareness/Misunderstanding of Free File Program. 15
 Table 4. Taxpayers Understanding of EITC Eligibility Criteria..... 16
 Table 5. Usability Issues with Software Lookup Tool. 17
 Table 6. Taxpayers Difficulty Locating Free File Landing Page through IRS.gov..... 18
 Table 7. Overwhelming Amount of Free File Vendor Options and Information with Offers..... 19
 Table 8. Taxpayers Experience Selecting Software and Strategies for Selection. 20
 Table 9. Difficulty Reporting Adjustments to Income, Choosing Filing Status, and Navigating Systems. 21
 Table 10. Taxpayer Satisfaction and Ease of Use Ratings for the Free File System..... 22
 Table 11. Demographic Characteristics of Participants..... 24
 Table 12. Example Usability Issue Table. 25
 Table 13. Locate Free File Landing Page 1. 26
 Table 14. Locate the Free File Landing Page 2. 27
 Table 15. Locate the Free File Landing Page 3. 30
 Table 16. Locate the Free File Landing Page 4. 31
 Table 17. Select an Offer Without the Lookup Tool 1. 32
 Table 18. Select an Offer Without the Lookup Tool 2. 33
 Table 19. Select an Offer Without the Lookup Tool 3. 34
 Table 20. Select an Offer Without the Lookup Tool 4. 35
 Table 21. Select an Offer Without the Lookup Tool 5. 36
 Table 22. Select Offer With Lookup Tool 1. 37
 Table 23. Select Offer With Lookup Tool 2. 38
 Table 24. Select Offer With Lookup Tool 3. 39
 Table 25. Select Offer With Lookup Tool 4. 40
 Table 26. Select Offer With Lookup Tool 5. 41
 Table 27. Select Offer With Lookup Tool 6. 42

Table 28. Select Offer With Lookup Tool 7.....	42
Table 29. Select Offer With Lookup Tool 8.....	43
Table 30. Select Offer With Lookup Tool 9.....	44
Table 31. Select Offer With Lookup Tool 10.....	44
Table 32. Select Offer With Lookup Tool 11.....	47
Table 33. Select Offer With Lookup Tool 12.....	48
Table 34. Select Offer With Lookup Tool 13.....	49
Table 35. Select Offer With Lookup Tool 14.....	50
Table 36. Select Offer With Lookup Tool 15.....	51
Table 37. File a Return 1.....	53
Table 38. File a Return 2.....	54
Table 39. File a Return 3.....	55
Table 40. File a Return 4.....	56
Table 41. File a Return 5.....	56
Table 42. File a Return 6.....	57
Table 43. File a Return 7.....	58
Table 44. File a Return 8.....	59
Table 45. File a Return 9.....	59
Table 46. File a Return 10.....	60
Table 47. File a Return 11.....	60
Table 48. File a Return 12.....	61
Table 49. File a Return 13.....	62
Table 50. Participant Education Groups Sample Sizes.....	69
Table 51. Participant Age Groups Sample Sizes, by Age Tercile.....	71
Table 52. Overall Debriefing Comments.....	73
Table 53. Previous Knowledge of Free File Program.....	74
Table 54. Experience Using Free File Previously.....	75
Table 55. Software Used Previously by Participants.....	75
Table 56. Mentions of Where to Go for Help.....	76
Table 57. Improve Filing Process Through Free File.....	77
Table 58. How the IRS Can Help Taxpayers With Free File.....	78
Table 59. Actions With Receiving Military Pay.....	78
Table 60. Taxpayer Pathway Types from User Flow Analysis (Task 1).....	81
Table 61. Task 1 Path Rating Scale.....	83
Table 62. Top 10 Search Terms Driving Internet Traffic to Free file Landing Page (From Web Analytics Analysis).....	87
Table 63. Search Terms Used by MITRE Study Participants in Task 1.....	88
Table 64. Taxpayer Pathways Followed to Select a Vendor (Task 2).....	88
Table 65. Task 2 Path Rating Scale.....	89
Table 66. Use of Lookup Tool versus Vendor Descriptions for Scenario 1.....	89
Table 67. Errors Committed using Lookup Tool (Scenario 2).....	90
Table 68. Free File Offers Selected During the Usability Session.....	90
Table 69. Reasons for Software Offer Selections.....	91
Table 70. Characteristics of National Free Filing population, TY 2018.....	A-3
Table 71. Final Zip Codes Selected for Invitation Sample.....	A-5
Table 72. Free Filing Service Used by Screened Candidates Within Previous Two Years.....	A-6
Table 73. Candidate Response.....	A-7

Table 74. Demographic Characteristics of Respondents Screened. A-8
Table 75. General Guidelines for SUS Scoring. A-18
Table 76. Usability Issues Complete List. B-1
Table 77. Characteristics of Paper Filing Population. D-1
Table 78. Software Providers Used by Full Free File Population, Chicago Population, and Final Letter Sample, TY 2018. D-2

1 Introduction

This report details the findings from MITRE’s usability study of the Internal Revenue Service (IRS) Free File program, including Free File-related websites and three randomly selected Free File member software offers. This study is part of MITRE’s independent assessment of the Free File program to evaluate various facets of the program, including Free File Alliance (FFA) member compliance with the Memorandum of Understanding (MOU), taxpayer patterns in Free File eligibility and use, and design of Free File software providers’ systems.

The scope of this report is solely the results of the taxpayer usability testing, in which MITRE conducted 29 usability interviews with previous free filers in Chicago, IL. These testing sessions observed usability issues and collected taxpayer feedback on the experiences of locating Free File, selecting a Free File software offer, and completing a return using one of three randomly selected member offers.

The IRS, in accordance with the Office of Management and Budget’s (OMB) directive, launched an e-government initiative to improve government-to-business and government-to-citizen electronic capabilities. The IRS Free File program (“Free File” or “the program”) was one such initiative, to provide free and secure online tax return preparation and filing services to taxpayers. The IRS developed a solution in partnership with the Free File Alliance, LLC, that consists of members of the tax software industry. Free File provides eligible low-income taxpayers with easy access through IRS’s website³ to Free File offerings from commercial tax software developers, via a list of Free File software offers on an IRS-hosted website. Under the agreement, Free File Inc., members offer both free online tax preparation and free e-filing services. There is no cost to qualifying taxpayers for federal returns.

Agency leadership engaged MITRE to conduct an independent assessment of Free File to ensure continued operations and integrity of the program. A component of this assessment included gathering feedback and perspectives on the taxpayer experience with Free File to better understand how taxpayers experience the program.

The scope of the task included conducting in-person testing sessions with taxpayers who previously used Free File to better understand how taxpayers experience the program. This document reports the findings from the 29 testing sessions conducted in July 2019. This includes research objectives, overall findings, and recommendations, methodology, specific usability issues, and suggested solutions for fixing them.

³ <https://www.irs.gov/>

For the purposes of this report, we define the Free File system as including the following components. The taxpayer testing sessions touched on these components:

1. Navigating the internet to locate Free File program information and options
2. IRS.gov web pages related to the Free File program,⁴ including the Free File landing page, the Free File software offers page that lists tax software offers provided by FFA, and the Free File software lookup tool
3. Filing a federal tax return with one of three randomly selected Free File software offers

1.1 Research Objectives

The purpose of the taxpayer research study was to test the taxpayer experience with the IRS Free File program and its online components. Specifically, the research conducted for this study met the following objectives:

- Understand how taxpayers locate the IRS Free File program
- Understand how taxpayers identify and select Free File member programs to use for tax filing
- Understand taxpayer perceptions of the IRS Free File software lookup tool
- Identify potential issues with taxpayers' ability to locate and use the IRS Free File program, including issues with the following:
 - How taxpayers determine which member software offer to use
 - Which member programs taxpayers select
 - What issues taxpayers encounter when completing an online tax return using a selected member's program
 - Where taxpayers would seek information or assistance using Free File program components
- Measure taxpayer satisfaction with the IRS Free File program, including ease of completing Free File system-related tasks

1.2 Scope

This report describes the results of 29 in-person interviews conducted with taxpayers in six zip codes in Chicago, IL, who had used the Free File program in Tax Year (TY) 2018. The interviews collected four types of data to meet the research objectives:

1. Usability data, gathered by observing taxpayers locate the IRS Free File program, select a Free File software offer, and complete an online return using a Free File member's program

⁴ Pages that taxpayers may have interacted with during testing sessions included, but were not limited to: <https://www.irs.gov/filing/free-file-do-your-federal-taxes-for-free>, <https://apps.irs.gov/app/freeFile/>, and <https://apps.irs.gov/app/freeFile/jsp/wizard.jsp?>

2. Metrics on taxpayer activities in the testing session, including success rates at finding the IRS.gov Free File program web pages and selecting a Free File software offer
3. Taxpayer ratings of user experience and satisfaction using the Free File program
4. Qualitative data on taxpayer perspectives on the Free File program, Free File member offers, and previous Free File experiences

The MITRE team, in collaboration with the sponsor, decided to interview previous free filers because these taxpayers are identifiable in the Compliance Data Warehouse (CDW), allowing MITRE to contact them easily. Restricting the sample to previous free filers also ensured that participants fell within the target population of taxpayers who would seek free tax filing services, enhancing the validity of the testing results. The MITRE research team selected Chicago, IL for two reasons: 1) sufficient volume of known free filers within a geographical area; and 2) familiarity with the location due to having conducted research on the redesigned 1040 Form in October 2018, with a population of taxpayers who filed on paper.

1.3 Study Limitations

This study has several limitations that may affect the external validity, meaning the extent to which the results of this study can be generalized beyond the context of the study setting.

- **Artificial testing situation.** When completing most of the testing activities, including filling out a tax return, taxpayers did not use their real, personally identifying information. Although this was necessary to protect privacy and confidentiality, it resulted in an artificial testing situation. This had two potential impacts on the interpretation of the study's results:
 - Artificial scenarios may have been difficult to understand for taxpayers, introducing a layer of cognitive burden that differed from a real-life tax reporting situation. To mitigate this limitation, MITRE researchers pre-tested the scenarios to make sure they were not too burdensome or unclear to the point of hindering the usability test. MITRE interviewers were trained to be attentive to signs of burden or fatigue and end the interview if participants were no longer providing quality data.
 - The artificial testing situation required participants to report tax data elements that may not have been relevant to their real-life situation (e.g., student loan interest deduction). This potential lack of knowledge could have been a confounding factor and could have caused errors. To mitigate this limitation and the challenge it posed for external validity, MITRE conducted an analysis of Free File program users reporting behaviors from TY 2017 and TY 2018 to tailor the scenarios to reflect “typical” reporting.
- **Characteristics of the interview sample may not perfectly mirror Free File program users nationally.** Demographic characteristics of prior free filers vary by geographic location and urbanicity. MITRE selected the Chicago, IL area based on sufficient volume of free filers and convenience of the location. However, Chicago free filers tend to be slightly younger and a greater proportion filed as single compared to free filers nationally (see Section 2.2). Additionally, MITRE was unable to control which taxpayers had the interest and availability to contact MITRE to participate in an interview. The resulting demographic characteristics of the interviewed sample therefore do not exactly mirror the characteristics of the Free File program user population nationally, simply because some

taxpayers were more likely to call MITRE wanting to participate than others. As such, caution should be used when generalizing from the sample of taxpayers interviewed here to the full taxpayer population.

- **Time constraints.** This study was completed in six weeks to support the broader assessment timeline. This time constraint cut back on the time available to MITRE researchers to pre-test and refine the testing protocol. It also necessitated that MITRE visit an interview site previously known to the team from a prior study to reduce the time spent planning logistics.
- **Influence of language used in recruitment and interview materials.** To clearly communicate the purpose of the study and its legitimacy as sanctioned by the IRS, recruitment and interview materials included references to the IRS Free File program specifically. This may have influenced taxpayers' behavior in the usability testing interviews, particularly when they were tasked with locating where they would file their federal return for free. MITRE captured all search terms from the usability sessions to assess the extent to which they mirrored language used by MITRE research materials.
- **Cannot generalize findings to new Free File taxpayers.** This study only included prior Free File program users; therefore, the findings cannot necessarily be used to assess how new users might experience the Free File program.
- **Cannot validate prior Free File eligibility of participants.** MITRE researchers had two data points to attempt to verify prior Free File use and eligibility: the Free File indicator available in CDW and potential participants' own reports of prior Free File use during eligibility screening. However, some records from CDW indicate that taxpayers identified as having used Free File also had ineligible (high) Adjusted Gross Income (AGI), suggesting that these taxpayers may not have actually been eligible for the program. MITRE cannot confirm or deny these taxpayers' previous eligibility and doing so is outside the scope of this study.
- **MITRE's results reflect the state of the web pages and member software systems on the testing dates.** MITRE's in-person testing was done July 22-26, 2019. Changes to the IRS.gov pages or member sites done before or after those dates are not in scope of this study.

1.4 Organization of This Document

This document is organized into the following sections, shown in Table 1.

Table 1. Document Organization.

Section	Contents
1. Introduction	Describes the research objectives and scope of this study. Defines this document’s purpose, scope, and organization.
2. Methods Overview	Provides a high-level overview of the methodological approach to this study.
3. Study Findings and Recommendations	Provides a summary of the high-level findings with corresponding evidence generated from this study and recommendations for the IRS.
4. Usability Findings	Communicates the usability issues identified in the taxpayer testing sessions.
5. User Experience Questionnaire Findings	Communicates the responses on the user satisfaction and experience questionnaire.
6. Debriefing Findings	Communicates themes MITRE identified from the interview debriefing questions on taxpayer perceptions.
7. Taxpayers Pathways and Metrics	Communicates the users flows and pathways taxpayers followed to locate Free File and metrics regarding taxpayer behaviors while completing the usability tasks, including errors committed and offer selections.
8. Conclusion	Describes MITRE’s high-level conclusions based on the study findings.
9. References	Provides works cited throughout the text.
Detailed Methods Appendix	Provides detailed accounting of the study methodology, including sample design and selection, interview methodology and procedures, and analytical approach.
Usability Issues Master List Appendix	Compiles a full list of all identified usability issues into a single table for easy reference.
Other Appendices	Attaches key documents, such as recruitment materials, the scenarios, and other interview materials. Also includes detailed tables of free filer characteristics used in the development of the sampling strategy.

2 Methods Overview

This section provides an overview of the approach taken through the various phases of the research process. It also provides a closer look at the scenarios and corresponding fictitious tax information the team developed in order for the taxpayer participants to complete the tasks in the usability sessions. The population of interest was prior Free File program users.

- Sampled taxpayers received letters from the IRS and MITRE about the study, inviting them to contact MITRE to participate.
- Interviewers collected data on usability, taxpayer perceptions of the Free File program, prior Free File experiences, as well as taxpayer satisfaction and taxpayer ratings on the ease of completing Free File-related tasks.

2.1 Overview of Research Process

The goals of the IRS Free File usability test were to identify taxpayer issues with:

- Locating the IRS Free File program website using commonly available search engines
- Identifying Free File software offers for which they may be eligible, including use of the Free File software lookup tool
- Filing a return using a Free File software offer selected at random by MITRE in advance of the testing session

For this study, taxpayers participated in an in-person session in which they completed the three tasks listed above, answered debriefing questions about their experiences completing the tasks and their prior Free File experiences, and completed two brief questionnaires measuring the ease of completing the tasks and overall taxpayer satisfaction with the Free File system. MITRE conducted 29 in-person interviews from July 22-26, 2019. Taxpayers used the Free File web pages and Free File member systems as they existed on those dates.

MITRE randomly selected three Free File program members' software offers to test during the usability sessions. These Free File software offers were selected to represent the spectrum of complexity of eligibility criteria used by the FFA members providing Free File software offers. See section 2.4 for a full description of how MITRE selected three Free File software offers to test.

2.2 Recruitment

The goal of this study was to gather usability information from a sample of prior IRS Free File program users that reside in a metropolitan region with sufficient free filers to result in 25 to 30 study participants. Given the schedule limitation, the team initiated its sampling strategy by leveraging taxpayer data from the CDW within the zip code clusters used in MITRE's usability test to support the Form 1040 redesign independent assessment completed in May 2019 [1]. MITRE examined the volume of TY 2017 and TY 2018 free filers located in the Chicago, IL, Portland, OR, Dallas TX, and Pittsburg, PA regions, used for the previous Form 1040 redesign assessment, to determine whether any of these regions would be an appropriate location for the Free File taxpayer testing as well. Note that the populations sampled in the Form 1040 redesign

study and this Free File study are entirely distinct—prior free filers, are, by definition, electronic tax filers, whereas the Form 1040 assessment sampled prior paper filers. Thus, there is minimal risk of overlap in the two target populations.

The total universe of free filers in TY 2018 was 2,343,235.⁵ After an initial exploration of the volume of free filers in multiple metropolitan areas nationally, MITRE identified Chicago, IL as the best candidate location for the taxpayer interviews. Within the Chicago, IL cluster, the team identified 4,106 taxpayers who were identified in CDW as having used Free File in TY 2018. The zip codes include in this cluster are 60657, 60640, 60618, 60613, 60625, and 60660. From this pool of 4,106, MITRE randomly sampled 2,500 taxpayers to receive invitation letters. The following steps were taken to identify taxpayers for testing:

1. Data were cleaned to remove duplicate Taxpayer Identification Numbers (TINs), TINs with missing zip codes, TINs with international zip codes, TINs missing a software vendor code, TINs with rejected returns, and taxpayers under 18 years of age.
2. Randomly sampled 2,500 returns from the six Chicago zip codes.
3. IRS sent recruitment letters to the 2,500 individuals to notify recipients that MITRE will be conducting a study to better understand how taxpayers interact with the IRS Free File program and that they will be receiving an invitation letter from MITRE.
4. IRS sent the MITRE invitation letter to participants. This letter explained the purpose of the study; how to contact MITRE to participate; compensation that taxpayers will receive for participating; and how to verify that this study is legitimate. Both letters are in Appendix C.

MITRE had 2,500 invitation letters mailed and received responses from 141 potential participants. Overall, 5.64 percent of taxpayers contacted MITRE to express interest in participating in the study, either via phone call or via the online form hosted at www.mitre.org. Additionally, MITRE created a waitlist for participant interviews for each site in case a minimum necessary number of interviews could not be conducted due to respondents' failure to appear. Two participants failed to appear to their scheduled interview, and one participant cancelled approximately 24 hours in advance of their scheduled interview. MITRE called two candidates from the waitlist participants. Twenty-nine total interviews were deemed "completed," meaning that the participants were eligible, and testing took place.

The vast majority (92 percent) of respondents filed as single, and the largest age range was 31-55 years of age (53 percent) followed by 18-39 (28 percent). Forty-two percent reported a household income between \$15,001 and \$35,000 and the most common educational level was a bachelor's degree (53 percent) followed by having a master's degree (28 percent). Note that participant recruitment ultimately depended upon the taxpayers themselves contacting MITRE after receiving an invitation letter; therefore, MITRE was not able to dictate the characteristics of the taxpayers who participated beyond the sample plan described in this section.

⁵ These data were drawn from the CDW (ETARAS_MEF1544 table), with ENGLISH_FREE_FILE_RET_IND=1, accepted_rtn_ind=1, and software_id_number not null. The data were cleaned to remove duplicate taxpayer identification numbers, records with international zip codes (zip=0), records with missing zip code, and taxpayers under age 18.

Letter recipients called MITRE or visited a MITRE web page to give their contact information and express interest in participating. MITRE spoke with interested letter recipients on the phone to verify eligibility and ask basic questions. During the screening phone call, respondents were deemed ineligible if they: had not received the invitation letter, do not live in one of the six zip codes, or reported not having used the IRS Free File program in the past two years. If a taxpayer indicated they did file a tax return for free within the past two years, but were uncertain if their return was filed through IRS Free File or a free filing product offered by a commercial tax software provider, they were considered eligible for this study, provided they satisfied the other screening criteria. Those who met the screening criteria were asked additional questions to capture demographic information.

Participants were asked:

- Within the last two tax years (2017 and 2018), have you filed your federal tax return through the IRS Free File program?
- Would you say that you are the adult in your household who is most familiar with the preparation and filing of your federal income tax returns?
- What was your filing status for tax year 2018?
- What is your age range⁶?
- Which is your range of household income?
- What is the highest degree or level of school you have completed?
- Did you or your spouse receive military pay in 2018?

2.3 Overview of Testing Scenarios

In preparation for the usability interviews, the MITRE team developed three fictitious scenarios. Two scenarios were used to support tasks where taxpayers were asked to select a Free File software offer for which a fictitious person was eligible (selection scenarios 1 and 2). In the third scenario taxpayers were asked to complete a tax return using a Free File software offer chosen by MITRE (filing scenario). To design the selection scenarios, MITRE examined eligibility criteria for different Free File software offers and developed taxpayer characteristics that would return different sets of possible Free File software offers. To design the filing scenario, the team had two goals: 1) to introduce enough complexity into the scenario so that taxpayers would have to interact with multiple components of the tax preparation software, including filing status, dependents, and adjustments to income, while still keeping the scenario simple enough to complete in approximately 30 minutes, and 2) to ensure that scenarios represented feasible free filer filing characteristics. Using CDW data, the team identified which fields on previous returns were commonly populated by individuals filing through Free File. In particular, MITRE's review of the free filer data available in CDW shows (see Appendix A for detailed descriptive statistics):

⁶ When screened, participants were asked to select from a set of age ranges. Specific ages were requested for participants who participated in the study.

- 71 percent of taxpayers who filed through the IRS Free File program in TY 2018 reported a filing status of single; the second most common filing status was head of household (17 percent)
- Mean AGI for free filers in TY 2018 was \$23,247
- Thirty-five percent of taxpayers using the IRS Free File program in TY 2018 claimed any non-zero amount for Earned Income Tax Credit (EITC), with a mean EITC distribution value of \$566
- Of the taxpayers using the IRS Free File program in TY 2018, 1.6% itemized deductions

Based on these demographics, the MITRE team developed three testing scenarios for participants to perform. All scenarios used a fictitious name, address, and other taxpayer information. Any resemblance to actual persons, living or dead, is purely coincidental. A summary of each scenario is provided below. See Appendix A for the complete set of scenarios used during the usability study.

- **Selection Scenario 1.** Participants used this scenario to identify and select a Free File software offer using the IRS Free File program web page (which may have included using the software lookup tool). The scenario contains details about a single taxpayer, age 52, who resides in Massachusetts, has one dependent, and 2018 AGI of \$49,000. *This scenario was designed to return eligibility results that do not include the large company software providers, which together represent approximately 70 percent of Free File returns filed in TY 2018⁷.*
- **Selection Scenario 2.** Participants also used this scenario to identify and select a Free File software offer using the IRS Free File program web page (which may have included using the software lookup tool). The scenario contains details about a single taxpayer, age 43, who resides in Texas, has no dependents, and 2018 AGI of \$33,000. *This scenario was designed to return eligibility results that do not include options to file a state return for free.*
- **Filing Scenario.** Participants used this scenario to complete an online federal tax return using a Free File software offering selected at random by MITRE. The scenario contains details about a single taxpayer with one dependent and wage income from one Form W-2, and student loan interest paid as reported on Form 1098-E. This taxpayer is also eligible for the EITC.

Selection scenarios 1 and 2 were required to complete the tasks related to the Free File software lookup tool. To control for order effect, MITRE alternated the order that participants received selection scenarios 1 and 2. All participants completed the same filing scenario.

⁷ Based on data from CDW.

2.4 Selection of IRS Free File Member Programs for Testing

The scope of this study was to conduct 25–30 in-person usability testing sessions with prior free filers. Because of this relatively low sample size, MITRE determined that testing three member tax preparation software systems was feasible. Each participant had time to complete a tax return with one system. MITRE devised a method for selecting three member systems at random that accounts for the share of free filers in TY 2018 that used certain Free File software offers, and the complexity of eligibility criteria.

Specifically, MITRE’s selection method operationalized:

- Size—in terms of percentage of free filers served (see Appendix D, Table 78 for the percentage of taxpayers using each member offer in TY 2018)
- Complexity—operationalized as the number of bullet points used to describe eligibility for the service on the IRS site. In July 2019, the number of bullet points for a given Free File software offer ranged from two to six. Examples of how these bullets are displayed on the Free File software offers web page are shown in Figure 1.⁸

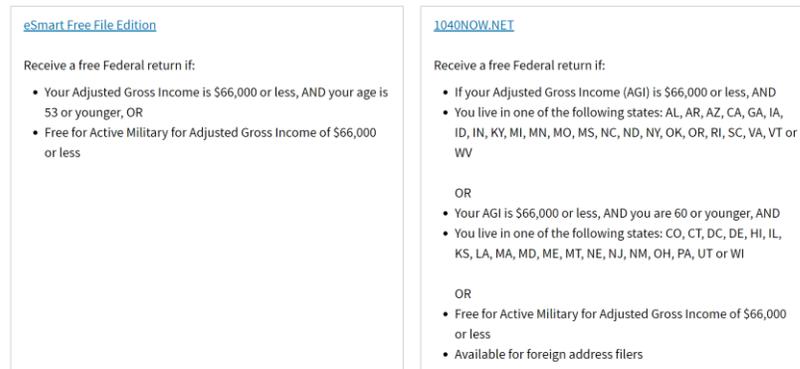


Figure 1. Eligibility Criteria Bullets on Free File Software Offers Page (<https://apps.irs.gov/app/freeFile/>).

In order to choose three Free File software offers, MITRE split all Free File software offers into the categories, and randomly selected one within each category. Selection was done on July 3, 2019, and thus represents the state of the Free File software offers page on that date.

1. Category 1: Top two Free File software providers by percentage served. Rationale: These providers dominate the market, and MITRE received information from the sponsor that these companies have their own usability testing operations, which suggests that there may be fewer usability problems for taxpayers using these suppliers.
2. Category 2: Not the top two Free File software providers by percentage served AND has fewer than five eligibility bullets.

⁸ Eligibility criteria boxes represent the state of the Free File software offers page on August 25, 2019.

2. Category 3: Not the top two Free File software providers by percentage served AND has five or more description bullets.

Random selection was done using a random number generator in Microsoft Excel. The selected Free File software offers were Member 10, Member 11, and Member 3. Table 2 shows the tested software offers and the number of interviews completed using each offer.

Table 2. Count of Selected Free File Software Offers Used in Interviews.

Software Offer	Count
Member 3	11
Member 11	9
Member 10	9

2.5 Interview Process

Interview sessions were in-person and lasted no more than 90 minutes. For each session, two MITRE staff were present—a facilitator and a notetaker. Each session had the following format:

1. Introduction and consent form
2. Task 1: Free Search Engine Testing
3. Task 1: Debrief (Single Ease Question [SEQ] and follow-up questions)
4. Task 2: Free File software lookup tool Testing
5. Task 2: Debrief (SEQ and follow-up questions)
6. Task 3: Filing with Select Vendor
7. Task 3: Debrief (SEQ and follow-up questions)
8. Usability Metric for User Experience (UMUX) Questionnaire
9. Final Debriefing Questions
10. Honorarium and interview closeout

2.5.1 Introduction and Consent

During the introduction, the facilitator informed the participant about the study’s purpose and format. In order to solicit unfiltered perceptions, participants were also told that their information would be kept confidential, that there were no right or wrong answers, MITRE had no commercial interest in the IRS Free File program, and that MITRE wanted their candid feedback. Participants were also informed that, with their consent, an audio recording of the session would be created in addition to recording of the participants online activity with Morae usability software developed by TechSmith Corporation. Next, participants read and signed a consent form that informed them of their rights as a participant.

2.5.2 Task 1 Search Engine Testing and Debriefing

To complete the first task, participants were provided with a computer that had access to the internet. The computer’s desktop screen contained shortcuts to Chrome, Firefox, and Internet Explorer browsers. Figure 2 provides a screen capture of the desktop view. Participants were asked to use the computer to locate the program that allows them to file a federal return for free.⁹ MITRE researchers allowed participants to continue as far as selecting a Free File software offer, if they were successful at locating the IRS.gov Free File landing page (<https://www.irs.gov/filing/free-file-do-your-federal-taxes-for-free>) independently with no intervention from the researcher. If participants arrived elsewhere (e.g., a commercial tax software provider’s site) or were unable to find Free File, the researcher eventually stepped in and directed the participant to IRS.gov to look there. Thus, some participants selected a Free File software offer that they themselves would be eligible for based on their actual characteristics, whereas others did not complete the task.

At the conclusion of the task, participants were issued a SEQ to rate the ease of completing the task of navigating the internet to file a federal return for free. The researcher then asked debriefing questions to better understand the participants’ processes and thoughts on the task.



Figure 2. Screenshot of Computer Desktop Used for Testing.

2.5.3 Task 2 Free File Software Lookup Tool Testing and Debriefing

The participants were issued the first scenario (selection scenario 1 or 2) and asked to use the scenario to identify and select a Free File software offering, starting from the IRS Free File program landing page (<https://www.irs.gov/filing/free-file-do-your-federal-taxes-for-free>). If the participant did not elect to use the Free File software lookup tool to complete the task, they were

⁹ The language used to introduce this task in the protocol was, “For your first activity, imagine that you have learned that there is a program available through the IRS that allows you to file your federal tax return for free. Our goal is to understand how you would go about locating this free program.” Although the term “IRS Free File program” was used in the introduction to the session (explaining the purpose of the research), the MITRE team avoided reusing these terms while introducing the tasks in order to reduce influencing the participants’ search terms.

asked to repeat the task using the lookup tool after completing it without the tool. This allowed MITRE researchers to both observe what participants would do on their own, and to also test the lookup tool. Participants were then issued the alternate selection scenario and asked to identify and select a Free File software offering by using the lookup tool.

At the conclusion of the task, participants were issued the SEQ to rate the ease of using the software lookup tool and asked debriefing questions about their experience identifying and selecting a Free File software offering.

2.5.4 Task 3 Filing with Selected Vendor and Debriefing

The participants were issued the filing scenario and asked to use one of the three selected Free File software offers to complete an online federal tax return. Participants were asked to complete the return up to, but not including, submission of completed return.

At the conclusion of the task, participants completed a final SEQ and answered debriefing questions about their experience completing an online federal tax return using the selected software offering.

2.5.5 Final Questionnaire and Honorarium

Participants completed a four-question user experience questionnaire (UMUX-Lite) and answered more general questions about their prior experience with the IRS Free File program and their suggestions to make the program easier for taxpayers. Participants then received a \$100 honorarium and were thanked for participation.

During the session, the notetaker observed the participant and recorded points at which the participant appeared to be confused, anything the participant verbalized, and certain pre-determined behaviors of interest. The notetaker used a pre-prepared notes template for each portion of the interview. This template enabled notetakers to capture observation notes as well as participant responses to the debriefing questions.

3 Study Findings and Recommendations

This section provides a summary of MITRE’s findings and recommendations derived from all data collected in the taxpayer testing sessions. Specifically, MITRE draws on: 1) the usability findings describing issues that the team identified in the in-person testing sessions; 2) qualitative data gathered during debriefing questions in the interview; 3) metrics on taxpayer behaviors for specific items related to locating and using the IRS Free File Program, as collected in the testing sessions; 4) findings of the satisfaction and user experience ratings collected via the SEQs and the UMUX-Lite questionnaires.

In this findings-recommendations format, MITRE uses the following naming conventions to organize the results:

- **Findings:** Information derived from the findings collected in the interviews that is relevant to the scope of the assessment, synthesized to draw conclusions from the evidence.
- **Recommendations:** Concrete actions that the IRS or software providers can take to improve the Free File system or better support taxpayers.

Table 3. Taxpayer Lack of Awareness/Misunderstanding of Free File Program.

Taxpayers lack awareness that Free File exists or misunderstand the program	
Findings	Recommendations
<p>Taxpayers demonstrated a lack of knowledge in the testing sessions and during recruitment screening about what the Free File program is and whether they used it previously (versus a free commercial product). Taxpayers also indicated during the interviews that they expected the IRS to directly provide free tax filing software rather than being taken to an external website. Evidence for these findings:</p> <p>Usability Issues</p> <ul style="list-style-type: none"> • Seven taxpayers expressed surprise that Free File software providers are commercial companies, not directly offered through the IRS (<i>Select Offer without Lookup Tool 4</i>). • Taxpayers mistook finding an e-file provider for finding a Free File software offer (<i>Locate Free File 4</i>). <p>Qualitative/Debriefing Support</p> <ul style="list-style-type: none"> • Four taxpayers conflated free versions of FFA member software offerings with Free File during debriefing interviews. • Five taxpayers reported not having heard about Free File before the prior year. • Three taxpayers suggested the IRS advertise Free File more. <p>Eligibility Screening</p> <ul style="list-style-type: none"> • Of 36 taxpayers deemed eligible to participate in the study, 28 percent expressed uncertainty as to whether they used Free File or a free version of commercial software <p>Taxpayer Pathways/Metrics</p> <ul style="list-style-type: none"> • Four taxpayers ended their Free File search on a commercial tax software provider website and never sought IRS.gov, suggesting that they did not realize that Free File offers should be accessed via IRS.gov. • MITRE’s study design (e.g., recruitment letters and interview procedures) may have raised awareness among participants about Free File and the IRS’ involvement. The majority of search keywords used to find Free File in the interviews involved some combination of “IRS” and “free.” Keywords with this combination tended to lead taxpayers successfully to the Free File landing page. 	<p>MITRE recommends conducting research on eligible taxpayers’ awareness of the Free File program, focusing on taxpayers who prepare their own taxes. The findings here suggest that many taxpayers do not know about Free File, conflate it with free commercial offerings, or assume it is a service offered directly by the IRS rather than through commercial partners. However, these results may be biased by the fact that MITRE’s recruitment materials referenced Free File; research that systematically evaluates taxpayer awareness is needed.</p> <p>MITRE recommends adding language to the Free File software offers page to clarify the relationship between the IRS and the companies who provide the Free File software offers.</p> <p>MITRE recommends clarifying language used on IRS.gov to reflect mention of the Free File program wherever possible (e.g., instead of a link reading “File Taxes for Free,” specify “File Federal Return with Free File program”).</p> <p>MITRE recommends using consistent program names in all communications to taxpayers about the Free File program and repeating these program names on IRS.gov web pages. MITRE suggests homing in on the phrase “IRS Free File” as a phrase that communicates the IRS’s involvement in the program and led to taxpayers successfully finding the Free File landing page in the usability testing sessions.</p> <p>MITRE recommends on the Free File landing page <i>and</i> on the Free File software offerings page, including a plain-language statement saying that the IRS acknowledges the software providers as providing legitimate Free File software offers. Describe this in a way that assure the site visitor that the links below are legitimate.</p> <p>MITRE recommends that the IRS share the FFA member website suggested solutions and recommendations within this report with the FFA.</p>

Table 4. Taxpayers Understanding of EITC Eligibility Criteria.

Taxpayers do not understand EITC eligibility criteria	
Findings	Recommendations
<p>Taxpayers struggled to answer the EITC eligibility question using the software lookup tool. When in doubt, some taxpayers opted to select that they were eligible for EITC, which resulted in software offer results that they were <i>not</i> eligible for. This could cause problems for taxpayers once they start to complete a return and discover themselves to be ineligible. Taxpayers did not seem to understand that incorrectly completing the tool could result in the consequence of selecting an offer for which they were not eligible.</p> <p>The EITC modal on the software lookup tool and EITC assistant did not help resolve the issue for many taxpayers. Multiple participants read the EITC modal in the lookup tool and believed they understood the information yet selected the incorrect answer on the lookup tool question. All of the errors committed on the software lookup tool were driven by the EITC eligibility question.</p> <p>Usability Issues</p> <ul style="list-style-type: none"> • Eight taxpayers selected “yes” on the EITC question in the lookup tool despite being unsure of answer. (<i>Select Offer with Lookup Tool 2</i>) • Five taxpayers believed that the lookup tool would verify their responses, especially on EITC eligibility. (<i>Select Offer with Lookup Tool 1</i>) • Six taxpayers misunderstood the information in the EITC modal popup (<i>Select Offer with Lookup Tool 4, 5, 6, 9</i>) • Two taxpayers were confused after using EITC assistant tool. (<i>Select Offer with Lookup Tool 8</i>) • Three taxpayers had preconceived notions regarding eligibility criteria and committed errors as a result. (<i>Select Offer with Lookup Tool 6, 7</i>) • Two did not know how to answer the EITC question and wanted to leave it blank or leave the lookup tool. (<i>Select Offer with Lookup Tool 3</i>) <p>Taxpayer Pathways/Metrics</p> <ul style="list-style-type: none"> • 29 percent of taxpayers committed an error on the software lookup tool; 100 percent of these errors were due to incorrect response on the EITC eligibility question. 	<p>MITRE recommends making changes to the software lookup tool to clarify that the tool does not verify taxpayer responses, particularly on EITC eligibility. This could be done by including a statement in the tool description that says, “Please enter your information accurately. The tool does not verify your responses.” Or, “The tool does not confirm you qualify for certain credits but makes suggestions for software offers based on the information you enter. It does not guarantee that the Free File software offers suggested meet your specific needs.”</p> <p>MITRE recommends reworking the software lookup tool’s EITC eligibility question. Consider breaking out EITC eligibility into a series of related questions (e.g., about income, anticipated filing status, and number of dependents) to determine EITC eligibility, rather than having taxpayers evaluate their own eligibility.</p> <p>If the IRS stated on the Free File site that all taxpayers eligible for EITC are eligible for Free File, the question could be removed from the tool. MITRE recognizes this would be a topic for negotiation between the IRS and FFA because of how that could impact some companies’ appearance in the tool.</p> <p>If the IRS decides to continue to require taxpayers to evaluate their own eligibility, MITRE recommends linking the question to the EITC eligibility tool, but ONLY after conducting usability testing on the EITC eligibility tool and addressing the results.</p> <p>MITRE recommends making EITC eligibility a non-required response on the lookup tool or introducing a “don’t know” option.</p>

Table 5. Usability Issues with Software Lookup Tool.

Usability issues with the Software Lookup Tool	
Findings	Recommendations
<p>The testing revealed usability issues and misunderstandings about the purpose of the tool that affected taxpayers’ ability to use the tool and answer the questions accurately. Most critically, some taxpayers did not understand what the tool was for, and believed it was confirming eligibility for Free File in general, rather than helping down select to a list of software offers for which they were eligible. Misunderstandings of the tool could lead to taxpayers committing errors and not realizing the consequences of those errors, such as using a tax software for which they are not eligible. Not noticing or not understanding the tool resulted in taxpayers who would otherwise appreciate help selecting a software offer <i>not</i> using the tool for its intended purpose.</p> <p>Usability Issues</p> <ul style="list-style-type: none"> • Five taxpayers believed that the lookup tool would verify their responses to questions on the tool. (<i>Select Offer with Lookup Tool 1</i>) • Four taxpayers expressed the belief that the lookup tool’s purpose was to verify their eligibility for Free File. (<i>Select Offer with Lookup Tool 11</i>) • Six taxpayers misunderstood the information in the EITC modal popup and answered the question incorrectly as a result. (<i>Select Offer with Lookup Tool 4, 5, 6, 9</i>) • Six taxpayers struggled to select no state at the state return drop down. (<i>Select Offer with Lookup Tool 10</i>) • Four taxpayers did not notice the lookup tool button. (<i>Select Offer with Lookup Tool 12</i>) <p>Debriefing/Qualitative Support</p> <ul style="list-style-type: none"> • Some taxpayers who did not use the lookup tool expressed a desire during debriefing for something that offered the same functionality as the lookup tool, suggesting that they did not notice it or understand what it was. “I would like to have it (IRS site) ask what state I live in and it provide appropriate results. Can ask three questions to reduce the number of options: Is your income less than – and click the right income level. What state do you live in? And is your age less than 56?” <p>Taxpayer Pathways/Metrics</p> <ul style="list-style-type: none"> • Seven of 17 taxpayers that opted to use the lookup tool without interviewer prompting committed errors or were unable to complete the task of selecting a Free File software offer. • Thirty-six percent of taxpayers opted not to use the lookup tool or did not notice it. 	<p>For the software lookup tool placement: MITRE recommends moving the software lookup tool box higher on the software offers page and rewording the explanation text to draw users’ attention and make the purpose clearer.</p> <p>For the software lookup tool label and description: MITRE recommends relabeling the software lookup tool button and header text to clarify its purpose. Relabel the button “Find a Free File software offer” and remove the text on the lookup tool page that reads “Verify Eligibility.”</p> <p>MITRE recommends including a statement in the tool description that says, “Please enter your information accurately. The tool does not verify your responses.” Or, “The tool does not confirm you qualify for certain credits but makes suggestions for software offers based on the information you enter. It does not guarantee that the Free File software offers suggested meet your specific needs.”</p> <p><i>For alternatives and more details, see the suggested solutions for the issues Select Offer with Lookup Tool 1 and Select Offer with Lookup Tool 11.</i></p> <p>For the software lookup tool state questions: MITRE recommends that after this statement, “If you need to prepare and e-file a free state return, please select your state, otherwise click continue.” include an additional statement on a new line saying, “[Names of states] do not have a tax on wages, so they do not appear on the response options. [New line.] If your state does have an income tax and does not appear in the response options, your state is not eligible for free filing. You may still be eligible to file your <i>federal</i> returns through Free File in this case.”</p> <p><i>For more details and alternative solutions, see the suggested solutions for issue Select Offer with Lookup Tool 10.</i></p>

Table 6. Taxpayers Difficulty Locating Free File Landing Page through IRS.gov.

Taxpayers have difficulty locating Free File landing page through IRS.gov channels	
Findings	Recommendations
<p>Taxpayers demonstrated difficulty navigating through IRS.gov to find the Free File landing page. However, most taxpayers did eventually find the Free File landing page. An equal number of participants experienced sub-optimal and optimal routes when starting from IRS.gov. Almost all taxpayers started the search for Free File from a search engine query, suggesting that the IRS should expect that taxpayers will enter the Free File system on IRS.gov from search results or locations other than IRS.gov’s home page. Evidence for these findings:</p> <p>Usability Issues</p> <ul style="list-style-type: none"> • Three taxpayers navigated to various IRS pages while attempting to find Free File. They thought that Free File was hard to find, were not sure how they arrived at Free File once they did, or never found it on their own at all. (<i>Locate Free File 1</i>) • One taxpayer went to multiple pages on the IRS website including the Free Fillable Forms, Find a Tax Professional, and the Forms and Instructions pages. This taxpayer did not find the Free File page on their own. (<i>Locate Free File 1</i>) • One taxpayer made it to the Free File landing page but then had trouble proceeding to the list of Free File software offers. The taxpayer veered away from the Free File landing page and navigated to the Filing for Individuals page. (<i>Locate Free File 2</i>) • One taxpayer navigated to the Authorized e-file Provider page. This taxpayer initially found the Free File landing page but then navigated to the page with authorized e-file providers. (<i>Locate Free File 4</i>) <p>Taxpayer Pathways/Metrics</p> <ul style="list-style-type: none"> • Twenty-four participants were able to find the Free File landing page. • Of the 24 participants that ultimately found the Free File landing page independently, 10 followed suboptimal paths, meaning that they were frustrated or confused along the way and visited other, unnecessary pages in the course of their search. • Twenty-six taxpayers started their search for Free File with an internet search engine query (e.g., “Free tax filing”). <ul style="list-style-type: none"> ○ The search terms that most frequently led to the Free File landing page included both “IRS” and “Free File.” 	<p>MITRE recommends clarifying language used on IRS.gov to mention of the Free File program wherever possible (e.g., instead of a link reading “File Taxes for Free,” specify “Do Your Federal Taxes for Free with Free File”).</p> <p>MITRE recommends visually prioritizing the button or link to the Free File program on the IRS homepage by moving it higher on the list.</p> <p>MITRE recommends that the IRS take steps to accommodate the fact that most taxpayers will enter the Free File system via an internet browser search, rather than through IRS.gov directly. Advertising that uses the phrase “IRS Free File” may prime taxpayers to search on that phrase, leading to the Free File landing page. MITRE recommends promoting a single program name like “IRS Free File” to help taxpayers remember this phrase, use it for internet searches, and scan for it on IRS.gov.</p> <p>Standardize the terms used across IRS.gov and any communications about the Free File program. Avoid mixing terms and headers (e.g., using “File Taxes for Free” on one web page and “Free File” on another).</p>

Table 7. Overwhelming Amount of Free File Vendor Options and Information with Offers.

Overwhelming number of Free File Software offers, and information provided with the offers	
Findings	Recommendations
<p>Taxpayers were overwhelmed by the Free File software options and by the information provided along with options on IRS.gov Free File-related pages (e.g., Free File landing page and Free File software offers page). They were overwhelmed by the amount of information they saw when they reached the Free File software offers page, including the paragraphs above the Free File software lookup tool box and the Free File software offers list below the lookup tool box. Taxpayers also found that the lookup tool returned too many options. Taxpayers found it difficult to select an offer due to the number of choices and amount of information presented to them. Evidence for these findings:</p> <p>Usability Issues</p> <ul style="list-style-type: none"> • Five taxpayers were overwhelmed by the amount of information on the Free File software offers page, particularly the Free File software offers. (<i>Select Offer without Lookup Tool 2</i>) • Three taxpayers perceived too many options returned from the lookup tool and had trouble choosing an offer. (<i>Select Offer with Lookup Tool 13</i>) • Five taxpayers did not understand if they needed to meet all or only some of the eligibility criteria on the Free File software offers list page in order to qualify. They did not understand if the criteria were “and” or “or” statements. This confusion resulted in taxpayers not knowing which Free File software offers they were eligible for. Some understood Free File software offers as being ONLY for military or EITC. (<i>Select Offer without Lookup Tool 1</i>) <p>Qualitative/Debriefing Support</p> <ul style="list-style-type: none"> • Five participants felt the biggest difficulty was that there were too many options to choose from on the IRS website <ul style="list-style-type: none"> ○ “There are too many choices. If there are ten there and four qualify, then it’s like eenie meenie miney mo.” 	<p>MITRE recommends adding language to the Free File software offers page to clarify the relationship between the IRS and the companies who provide the Free File software offers.</p> <p>MITRE recommends offering visual relief to break up the visual monotony of a litany of text boxes. Visuals like the logos of the offerings, inserted into each box or next to the appropriate Free File software offer name, can help taxpayers quickly differentiate between offerings and remember software providers they wish to scroll back to or revisit. Logos also help clarify that the offerings are legitimate but are not IRS or government affiliates, which addresses taxpayers’ confusion that Free File software is provided directly by the IRS.</p> <p>MITRE recommends clearly separating between each of the groups by criteria. Group all of the “and” criteria together, and clearly separate all of the “or” criteria.</p> <p>MITRE recommends creating a table that uses plain language and compares the eligibility criteria of each offer, rather than presenting many individual boxes on the software offers page. Present information consistently across the offerings’ descriptions. Alternatively, MITRE recommends including a tooltip with each of the resulting offers from the lookup tool that when clicked, allows taxpayers to see the eligibility criteria associated with each offer. This would give taxpayers the option to revisit the offers’ eligibility criteria without putting too much information on the results page and without requiring taxpayers to leave the page.</p>

Table 8. Taxpayers Experience Selecting Software and Strategies for Selection.

Taxpayers’ experience selecting a software offer: Strategies used to select offers	
Findings	Recommendations
<p>The study collected a wealth of information about how taxpayers navigate the process of choosing a Free File software offer. Interestingly, the majority of taxpayers reported reasons <i>other than</i> eligibility criteria for selecting Free File software offers, in part because the eligibility criteria were long and complex. Taxpayers rely on familiarity with company names, particularly the large software providers, and previous experience with tax software. When in doubt, taxpayers drew on heuristic devices to help themselves establish the legitimacy of software providers, such as keywords in software providers’ names. In part, these strategies were necessitated by the sense that there were too many options and it was difficult to distinguish between them. Some taxpayers mistook commercial providers with similar keywords as legitimate IRS Free File program selections.</p> <p>Usability Issues</p> <ul style="list-style-type: none"> • Taxpayers were overwhelmed by the number of options, both on the software offers page and in the lookup tool results. (<i>Select Offer without Lookup Tool 2 and Select Offer with Lookup Tool 13</i>) • Taxpayers expressed a desire to see the eligibility requirements repeated on the lookup tool results list, to help them choose from the list of Free File software offers. <p>Qualitative/Debriefing Support</p> <ul style="list-style-type: none"> • The majority of taxpayers cited reasons other than eligibility criteria for choosing a Free File software offer. Prior experience and name recognition were the top two reasons, with a total of 45 mentions. • Eligibility criteria were mentioned as the reason for selection 13 times. <p>Taxpayer Pathways/Metrics</p> <ul style="list-style-type: none"> • Nine taxpayers navigated to a commercial website as part of the process while they were searching for Free File. Four of the nine ultimately stayed on a commercial page, not realizing that they had <i>not</i> selected a Free File offer. 	<p>MITRE recommends that the IRS take steps on its Free File web pages to help make eligibility clearer and less overwhelming to taxpayers, in order to maximize taxpayers’ ability to select an offer based on <i>eligibility</i>, not criteria such as name recognition, keywords used in names, or picking at random.</p> <p>To help taxpayers focus on eligibility criteria:</p> <p>MITRE recommends creating a table that uses plain language and compares the eligibility criteria of each offer in a grid format. Present information consistently across the offerings’ descriptions.</p> <p>MITRE recommends including a tooltip with each of the resulting offers from the lookup tool that when clicked, allows taxpayers to see the eligibility criteria associated with each offer. This would give taxpayers the option to revisit the offers’ eligibility criteria without putting too much information on the results page and without requiring taxpayers to leave the page.</p> <p>MITRE recommends incorporating the term “IRS Free File” wherever possible to help distinguish the IRS-associated partnership program from commercial sites that mirror the language and look and feel of Free File programs.</p>

Table 9. Difficulty Reporting Adjustments to Income, Choosing Filing Status, and Navigating Systems.

Difficulty reporting adjustments to income, choosing filing status, and navigating systems	
Findings	Recommendations
<p>General usability issues across multiple software providers included finding where to enter student loan interest information, selecting a filing status, and navigating through the filing systems. Taxpayers were not sure where to enter student loan information and often found it where they were not expecting. Taxpayers had a hard time deciding between selecting head of household or single. They did not understand the flow, or sequence of pages and information, of various aspects of the tax preparation systems. Evidence for these findings:</p> <p>Usability Issues</p> <ul style="list-style-type: none"> • Seven taxpayers were not sure where to enter their student loan information from Form 1098-E while filing a return using two out of the three Free File software offers. (<i>File a Return 1</i>) • Six taxpayers were uncertain or confused about either selecting head of household or single as their filing status. Taxpayers expected more information within the system to help them make the correct choice. Instead, they had to turn to an external source for more information. (<i>File a Return 2, File a Return 12</i>) <ul style="list-style-type: none"> ○ If they chose head of household, some taxpayers expected to see additional questions or prompts to confirm their selection but did not receive them. (<i>File a Return 2</i>) ○ System prompts asking taxpayers if they wanted to change their filing status were confusing and undermined taxpayer confidence (<i>File a Return 12</i>) • Three taxpayers did not understand the path or flow of information presented to them while filing. They lost track of where they were in the filing process, had trouble navigating menus, or did not see the pages they were expecting to see. (<i>File a Return 11</i>) • Three taxpayers were confused about what to do once they chose the quick file option. They were not familiar enough with tax preparation to enter each of the relevant forms they had for filing. (<i>File a Return 3</i>) 	<p>For adjustments to income: MITRE recommends including an education expenses section with a checkbox for student loan payments on the page where taxpayers are selecting the items of basic information such as income and dependents that apply to them. Checking the box for student loan payment should trigger the presentation of a student loan interest payment deduction page when taxpayers later enter their information for deductions.</p> <p>MITRE recommends making sure navigation is usable and descriptive to ensure users can go back and find where to enter student loan information if they miss it on their first pass.</p> <p>For choosing a filing status: MITRE recommends providing step-by-step prompts to help taxpayers make the correct filing status selection, particularly between single and head of household.</p> <p>MITRE recommends that in the filing status prompt alert, explain in more detail why a suggestion was made (i.e., explain what qualifies someone for head of household), and affirm that the participant does not have to change their selection.</p> <p>Alternately, MITRE recommends that when a taxpayer uses the filing wizard to determine their status, do not give them any prompts to make changes to their filing status unless they later make selections or enter information that contradicts what they have entered into the filing wizard.</p> <p>For flow of information: MITRE recommends using symbols and color saturation in areas such as the side navigation menu to indicate where in the process the taxpayer is and the status of the section. For example, use check marks to indicate that the taxpayer has completed a section and an empty circle to show incomplete sections, and use color or color saturation differences to highlight where in the menu the taxpayer currently is.</p>

Table 10. Taxpayer Satisfaction and Ease of Use Ratings for the Free File System.

Taxpayer satisfaction and ease of use ratings for the Free File system	
Findings	Recommendations
<p>The study used two questionnaires to collect self-report metrics on participants’ perceived ease of use of the three usability tasks, and overall perceived satisfaction regarding the Free File system. The findings show that overall, taxpayers rated the usability of the Free File system a “B.” The filing task was the most difficult for participants, which is not surprising given that completing a tax return is a more complex task than browsing the internet or navigating IRS.gov. Usability scores varied by Free File software offer. There was some evidence that usability scores varied by age and education level, though these results should be interpreted with caution given the small sample size.</p> <p>Questionnaire Scores/Analysis</p> <ul style="list-style-type: none"> • Participants rated task 3 as harder than tasks 1 and 2; in line with task 3 being inherently more complex than tasks 1 and 2. • Participants’ ratings of the Free File system overall varied by which Free File software offer they used to file a return, suggesting that the software experience colored taxpayers’ perceptions of the entire experience, including IRS site interactions. • Patterns in usability ratings by education were unclear: <ul style="list-style-type: none"> ○ High school-equivalency group had lowest per-task ease for Tasks 1 and 2 (SEQ) but highest overall usability (UMUX) • Youngest age tercile (20-35 years) reported the best usability across entire experience, but there was not a conclusive age group trend. 	<p>MITRE recommends performing further research to explore these findings, including usability testing and iterative design processes. Iterative usability testing should be conducted with various demographic groups, using larger sample sizes than those in this study and thus gleaning more reliable results. Usability testing that includes new filers is recommended.</p> <p>Vendor usability was associated with overall usability ratings of the Free File system as a whole. To increase taxpayer satisfaction with Free File, the IRS can encourage or require Free File software providers to ensure their Free File offerings are usable by conducting testing or adhering to best practices. The IRS can also communicate more clearly to taxpayers that Free File software offers are non-IRS and encourage taxpayers to explore multiple options. This could increase the likelihood that taxpayers will return to the Free File program if they have a bad experience with a software offer, rather than assume that the entire program is equally difficult to use.</p>

4 Usability Findings

In this section, MITRE describes the usability issues identified during the taxpayer testing sessions. Taxpayers performed three main tasks during the testing sessions: locate the Free File landing page, select a Free File software offer using fictitious information, and file a return using fictitious information.

The focus of this section is on the elements of web design, wording, or organization that caused taxpayers to commit errors, express frustration, or be unable to complete any of the tasks. Suggested solutions are provided to address usability issues on an *a la carte* basis.

MITRE identified 37 distinct usability issues. Some major issues included:

- Difficulty navigating from IRS.gov to the Free File landing page
- Misunderstanding EITC eligibility while using the lookup tool
- Difficulty entering adjustments to income, particularly student loan interest, while filing

4.1 Demographic Characteristics of Testing Participants

Table 11 shows the demographic breakdown of all taxpayers that completed the interview. The data in Table 11 were reported by the participants during phone screenings or interview sessions, not derived from tax return data in CDW. At a glance, the vast majority of participants filed as single (90 percent). Median age was 46 years (interquartile range 34-54 years). Compared with free filers nationally,¹⁰ the final interview sample had a higher percentage of single filers and skewed older than free filers nationally (see Table 77 for national free filer characteristics). Of the interview sample, 45 percent reported a household income between \$15,001 and \$35,000 and the most common educational level was a bachelor's degree (44 percent) followed by having a master's degree (31 percent). Note that participant recruitment ultimately depended upon the taxpayers themselves contacting MITRE after receiving an invitation letter; therefore, MITRE was not able to dictate the characteristics of the taxpayers who participated beyond the recruitment plan discussed in Section 2.2.

¹⁰ In TY 2018, the full population of U.S. free filers had median age 32 years, mean age 37.9 years, and 71 percent filed as single.

Table 11. Demographic Characteristics of Participants.

	Participant Count	Percent of Total
Total Number of Participants	29	
Filing Status		
Single	26	90%
Married Filing Joint	0	0%
Married Filing Separate	0	0%
Head of Household	3	10%
Widow/Widower	0	0%
Age (Quartiles)		
20-33	8	28%
34-45	7	24%
46-53	7	24%
54-85	7	24%
Household Income		
Less than \$15,000	6	21%
Between \$15,001 and \$35,000	13	45%
Between \$35,001 and \$50,000	6	21%
Between \$50,001 and \$75,000	3	10%
Between \$75,001 and \$90,000	1	3%
More than \$90,000 a year	0	0%
Unknown	0	0%
Highest Level of Education		
No schooling completed	0	0%
Some school but did not complete high school	0	0%
Received high school diploma, GED or alternative	5	17%
Associate's degree	1	3%
Bachelor's degree	13	45%
Master's degree	9	31%
Professional degree beyond bachelor's degree	0	0%
Doctorate degree	1	3%
Unknown	0	0%
Military Pay		
Participant and/or spouse received military pay	0	0%
Zip Code		
60613	2	7%
60618	4	14%
60625	4	14%
60640	11	38%
60660	3	10%
60657	5	17%

4.2 Usability Issues with Suggested Solutions

This section describes issues, problems, points of confusion, and causes of errors and misreporting that came up during the usability scenarios/testing that MITRE interviewers administered to participants. Participants’ opinions—if not related to a cause of errors, problems, or frustration while performing the task—are not included in this section.

Also, in this section are issue-level suggested solutions for fixing specific usability issues. Note that these suggestions are meant to be *a la carte*, as some may conflict with others. MITRE provided suggested solutions to each taxpayer issue in Task 3 – File a Return Using a Pre-assigned Vendor. These solutions pertain to specific Free File software offers. The IRS will need to determine what works best for them in the full context of the IRS Free File program, including whether to share suggested solutions with the Free File software providers MITRE selected randomly to test.

All usability issues were given an ID for easy referencing that is comprised of the task and a number (e.g., “Locate Free File 1,” “Select Offer without Lookup Tool 1,” “Select Offer with Lookup Tool 1,” “File a Return 1”).

For more information on the usability issues analytical approach see Section A4.1 Usability Data. For a full list of all usability issues with no accompanying narrative text, see Appendix B.

4.2.1 Reporting Usability Issues: Presentation of Issues Example

The MITRE team used summary tables (Table 12) to present each of the usability issues. Following each table is a full description of the issue and suggestions to resolve that issue.

Table 12. Example Usability Issue Table.

Task	Website	Page/Section	Issue	Severity	Count
Example task	Example website	Example page/section of website	Example issue description	Low, medium, high	# of participants

4.2.2 Reporting Usability Issues: Severity Ratings

The MITRE team classifies usability issues by severity rating. These ratings allow a quick reference to gauge how serious an issue was—was it a showstopper for some taxpayers, or merely a point of confusion? Did errors result for some taxpayers who encountered this problem? Note that severity ratings do not necessarily tie to the frequency of the issues among the participants and are treated as distinct concepts [2].¹¹

1. **High severity issues.** Issues that caused users to commit major errors or stopped the taxpayer from completing the task at hand. For example, entering an incorrect amount that causes cascading errors throughout the tax return and to the final refund amount.

¹¹ Severity is not tied to frequency because regardless of how many people experience a high severity issue, it is problematic if anything about the website design causes taxpayers to be unable to complete the task or complete it without any major errors.

2. **Medium severity issues.** Issues that caused major frustration that the participant was able to eventually resolve on his/her own, or issues that caused minor errors. For example, not ticking a required checkbox but otherwise recording other amounts correctly.
3. **Low severity issues.** Issues that caused some frustration or caused the user to express dissatisfaction with the experience of completing the form, but the responses were correct in the end.

4.2.3 Taxpayer Usability Issues While Performing Task 1 – Locating the Free File Landing Page

In this task, the interviewers instructed taxpayers to imagine that they learned there was a program available through the IRS that allowed them to file their federal tax return for free and to use an internet browser of their choice to locate that program. Below are the issues taxpayers encountered while performing this task.

4.2.3.1 Locate Free File Landing Page 1

Table 13. Locate Free File Landing Page 1.

Task	Website	Page/Section	Issue	Severity	Count
Locate Free File Landing Page	IRS.gov	IRS Homepage	Taxpayers had trouble navigating from the IRS homepage to Free File page	High	3

Description of the Issue

Once they were on the IRS homepage, taxpayers had difficulty finding the Free File landing page, and one taxpayer was not able to find the page without assistance. Taxpayers navigated to various IRS pages while attempting to find Free File. They thought that Free File was hard to find, were not sure how they arrived at Free File once they did, or never found it on their.

One taxpayer got tied up in the Interactive Tax Assistant. This taxpayer eventually found the Free File page but was not sure how they got there, saying, “This is very confusing, I’m not sure how I got here.”

Another taxpayer went to multiple pages on the IRS website including the free fillable forms, find a tax professional, and the forms and instructions pages. This taxpayer did not find the Free File page on their own.

Though it took them several tries to find it, another taxpayer found the link to the Free File page in the righthand blue box under the File drop-down menu. This taxpayer said, "it was in the middle, Free File was hiding."

This issue is related to Locate Free File 2.

Suggested Solutions

On the IRS homepage, change the label “File Your Taxes for Free” to “Do Your Federal Taxes for Free with Free File.” This change may help taxpayers find the Free File page as it would

both include the term “Free File” and relate better to the page that opens when you click the “File Your Taxes for Free” button. The task-oriented language better aligns with how the user conceptualizes their goals on the page.

Visually prioritize the button or link to the Free File program by moving it higher on the list. Other approaches could be a different shape or larger size of button, or a button that is visually called out with color. A unique and more relevant icon could also be used; the current folder icon is shared with “View Your Account,” and while it relates linguistically to the concept of filing, it does not explicitly relate to the ability to do tax returns for free.

Arrange the linking elements on the page in order of priority.



Figure 3. IRS Home Page (IRS.gov).

4.2.3.2 Locate Free File Landing Page 2

Table 14. Locate the Free File Landing Page 2.

Task	Website	Page/Section	Issue	Severity	Count
Locate Free File Landing Page	IRS.gov	Free File Landing Page	Taxpayer had difficulty navigating Free File landing page (on IRS.gov)	Medium	1

Description of the Issue

A taxpayer made it to the Free File landing page but then had trouble proceeding to the list of Free File software offers. The taxpayer veered away from the Free File landing page. They navigated from the Free File landing page to the filing for individuals page by clicking "individuals" on the top-level menu. The taxpayer read the “what you need to know” section then selected the Form 1040 link, and then selected the current year link. At this point, the interviewer intervened to redirect the taxpayer and help move the task forward. As Figure 4 and Figure 5 (laptop views) illustrate, the button to move to the offerings page is located below the fold on

page loading and is thus easy to overlook. The offerings page button is also visually identical (text asides) to the “start fillable forms now” button, which means the user is not guided toward free e-filing. Taxpayers who are new to e-filing or unaware of the Free File option may go straight to the fillable forms option. The text describing the income level distinction between the two options is not visually striking and site visitors may gloss over it.

This issue is related to Locate Free File 1.

Suggested Solutions

Bring the Free File offerings button higher up the page so that it is visible without the user scrolling down. Removing the alert box at the top of the content area may achieve this.

The content in the alert box seems less important than the filing options. Remove the alert box so that the site visitor’s gaze is drawn toward the filing options rather than the alert.

Show the income below/above cutoff descriptions side by side rather than on top of each other to contrast them more clearly as distinct options. The current layout may be interpreted at a glance as being a list rather than contrasting options.

Keep link and button text task-oriented. This means that the “Start Free File Now” button would be easier to understand if it read something akin to “Find Software to E-File for Free.” Taxpayers who do not know much about the Free File program may be confused by Free File presented as a task.

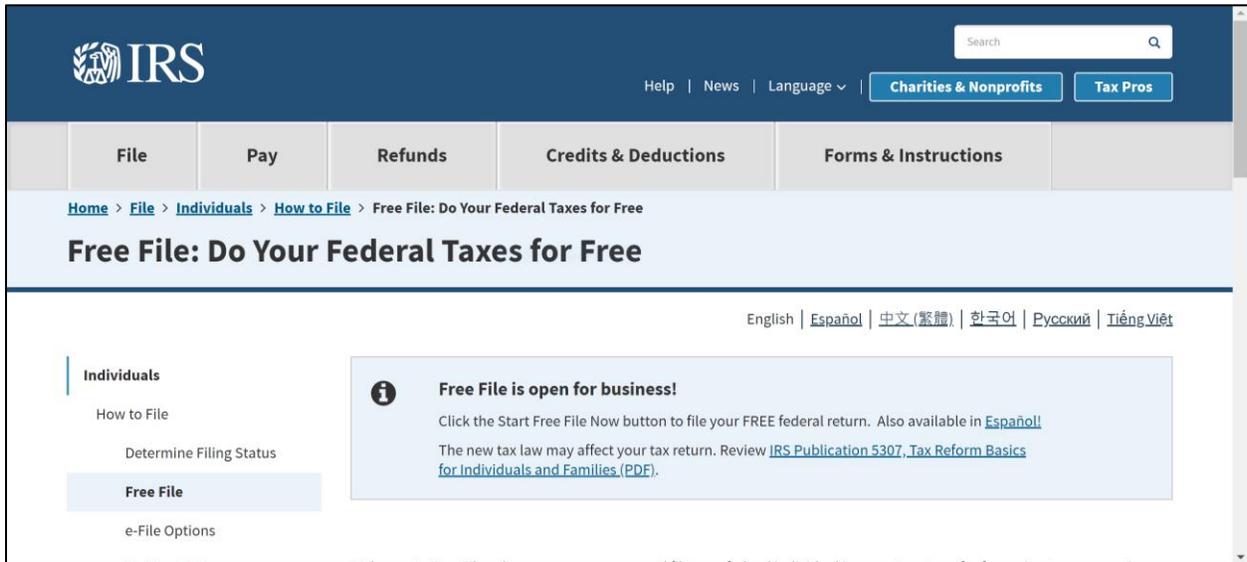


Figure 4. Free File Program Landing Page, Above the Fold.

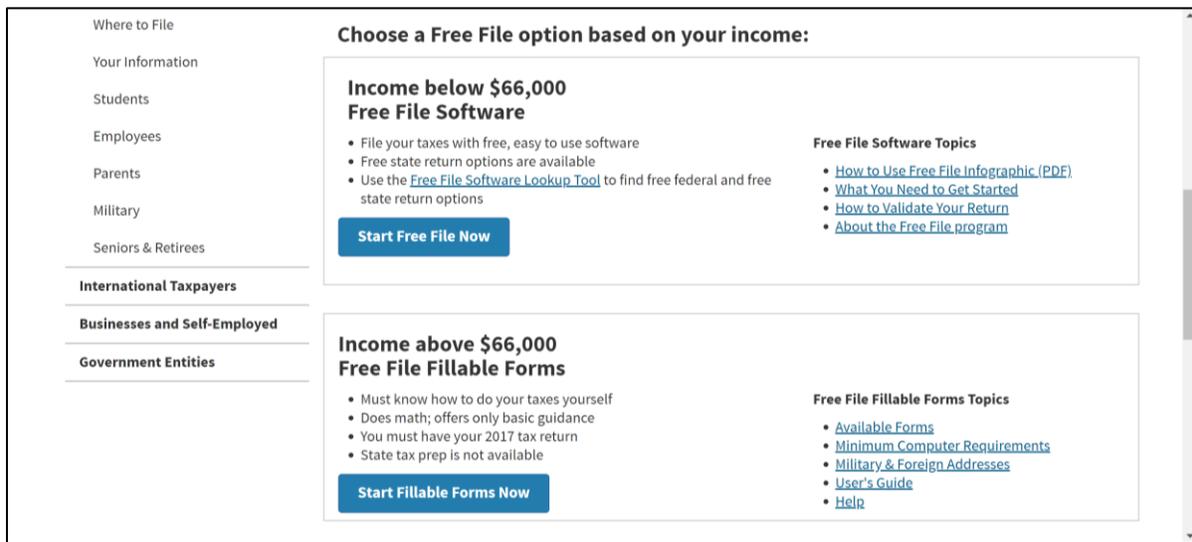


Figure 5. Free File Program Landing Page, Halfway Down the Page.

4.2.3.3 Locate Free File Landing Page 3

Table 15. Locate the Free File Landing Page 3.

Task	Website	Page/Section	Issue	Severity	Count
Locate Free File Landing Page	IRS.gov	Free File Landing Page	Taxpayer did not notice the “Start Free File Now” button	Medium	1

Description of the Issue

A taxpayer did not like that they needed to scroll before getting where they need to go (the “Start Free File Now” button). Scrolling caused the taxpayers to initially miss the button.

This taxpayer said, “IRS is very wordy, and I wish the Free File banner was more displayed. I wasn’t sure this was the button. The banner that was up top was not the navigation button- looked like a button to me but I had to go further down the page. I design web pages, so I have some experience.... People don’t have patience anymore. Scrolling down is like a task. Put it front and center and make it user friendly.”

Figure 6 shows the current Free File landing page (<https://www.irs.gov/filing/free-file-do-your-federal-taxes-for-free>). Taxpayers must scroll down to see the rest of the page and the “Start Free File Now” button shown in Figure 7.



Figure 6. Free File Landing Page.

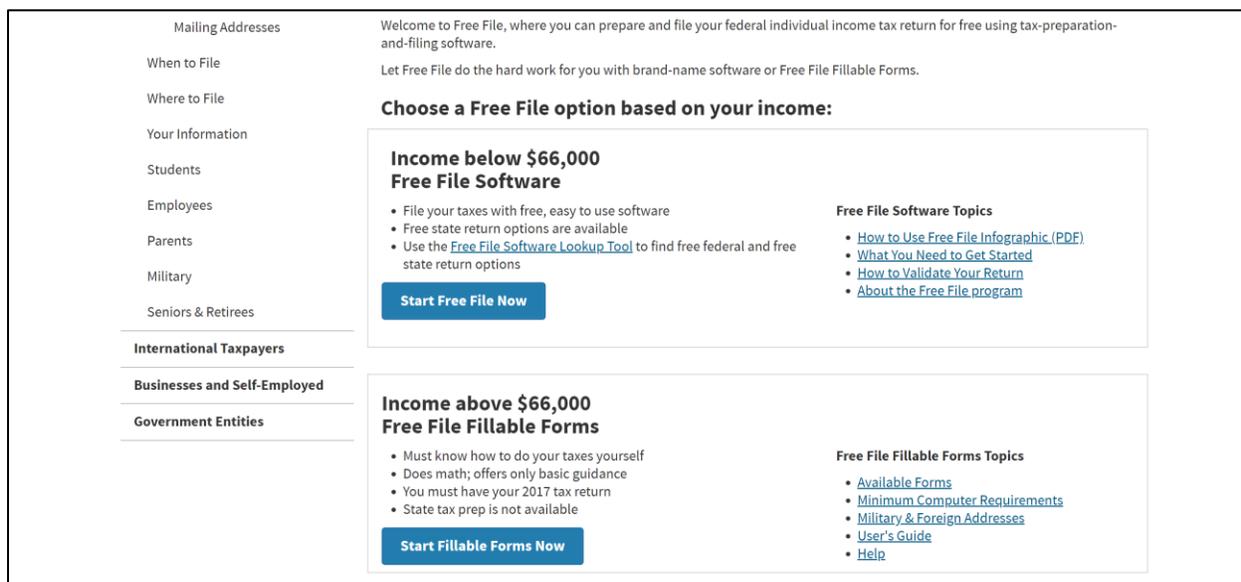


Figure 7. Free File Landing Page—Start Free File Now.

Suggested Solutions

Solution suggestions are similar to those in *Locate Free File 2*. Remove the blue information box in order to move up the “Start Free File Now” button and make it visible on the page without having to scroll down. Provide the two income level options (Free File and fillable forms) as options users can scan side by side, which will also reduce the amount of scrolling required.

4.2.3.4 Locate Free File Landing Page 4

Table 16. Locate the Free File Landing Page 4.

Task	Website	Page/Section	Issue	Severity	Count
Locate Free File Landing Page	IRS.gov	Free File Landing Page	Taxpayer confused between finding a Free File provider and an e-file provider	Low	1

Description of the Issue

A taxpayer was supposed to find a Free File software offer but ended up on the authorized e-file provider page. This taxpayer initially found the Free File landing page but then navigated to the page with authorized e-file providers. Upon seeing the list of individual people’s names, the taxpayer returned to the Free File landing page and found the “Start Free File Now” button.

Suggested Solution

None—The taxpayer navigated away from the Free File landing page without explanation but returned on their own after exploring other pages. They were able to return to the Free File landing page without issue. See recommendations for related issue “*Locate Free File 1.*”

4.2.4 Taxpayer Usability Issues While Performing Task 2a – Selecting a Free File Software Offer (Without the Lookup Tool)

In this task, the interviewers instructed taxpayers to use a fictitious scenario to select a Free File software offer starting from IRS.gov. Taxpayers did not receive any specific instruction to use the lookup tool, but they were free to use it on their own if they chose to do so.

4.2.4.1 Select Offer Without Lookup Tool 1

Table 17. Select an Offer Without the Lookup Tool 1.

Task	Website	Page/Section	Issue	Severity	Count
Select an Offer without the Lookup Tool	IRS.gov	Free File Software Offers	Taxpayers did not understand whether it was necessary to meet all eligibility criteria ("and" or "or")	High	5

Description of the Issue

Taxpayers did not understand if they needed to meet the all eligibility criteria on the Free File software offers list page in order to qualify, or only one or some of the requirements. They did not understand if the criteria were “and” or “or” statements. This confusion resulted in taxpayers not knowing which Free File software offers they were eligible for.

One taxpayer said, “Does she have to fit all of these [bullet points], or just some of these? I tend to think you wouldn’t have to be, but I don’t know. It says ‘if,’ so I don’t think all of them have to apply, but I really don’t know.”

Another taxpayer was specifically confused by the military criterion for one of the Free File software offers. They said, “Meets first two bullets, but then the third talks about military—so does this mean it’s just good for military or military and everything else as well...Seems like all the bullet points read that way.”

Suggested Solution

Structure all of the Free File software offers boxes like the box for 1040NOW.NET in Figure 8 where there is a clear separation between each of the groups of criteria. All of the “and” criteria are grouped together and all of the “or” criteria are clearly separated.

1040NOW.NET

Receive a free Federal return if:

- If your Adjusted Gross Income (AGI) is \$66,000 or less, AND
- You live in one of the following states: AL, AR, AZ, CA, GA, IA, ID, IN, KY, MI, MN, MO, MS, NC, ND, NY, OK, OR, RI, SC, VA, VT or WV

OR

- Your AGI is \$66,000 or less, AND you are 60 or younger, AND
- You live in one of the following states: CO, CT, DC, DE, HI, IL, KS, LA, MA, MD, ME, MT, NE, NJ, NM, OH, PA, UT or WI

OR

- Free for Active Military for Adjusted Gross Income of \$66,000 or less
- Available for foreign address filers

Figure 8. Current 1040NOW.NET Free File Software Offer Information Box.

4.2.4.2 Select Offer Without Lookup Tool 2

Table 18. Select an Offer Without the Lookup Tool 2.

Task	Website	Page/Section	Issue	Severity	Count
Select an Offer without the Lookup Tool	IRS.gov	Free File Software Offers	Taxpayers perceived too many options and were overwhelmed by information on the Free File software offers page	Medium	5

Description of the Issue

Taxpayers were overwhelmed by the amount of information on the Free File software offers page (<https://apps.irs.gov/app/freeFile/>), especially the Free File software offers list.

One taxpayer said, “Too many options. When they list states or excluded states, I would prefer to just skip it ... [I] would probably select the first one listed because it would take too long to explore all of them.”

Additionally, the amount of information on this page did not facilitate taxpayers selecting a Free File software offer. Participants struggled to compare the eligibility criteria across the offers. While looking through the Free File software offers boxes, another taxpayer said, “It says your income is 66K, this other one says 35K. It’s complicated. You have to check your income and age. This one applies to what looks like 30 states. Others don’t mention state. To me this is a headache...”

One taxpayer specifically chose to use the lookup tool because they did not understand all of the information below the “Free File software lookup tool” box.

Suggested Solutions

Create a table that uses plain language and compares the eligibility criteria of each offer.

Present information consistently across the offering descriptions. In each description, give information for the same fields in the same order. If a field does not apply, such as when a software provider does not limit by state or does not offer free filing for state returns, note that it does not apply and explain why. For example, by saying “[Field]: N/A. [Vendor] does not offer free e-filing for state returns.” Consistent presentation will help the taxpayer quickly and easily compare information between Free File software offers, as well as feel more confident in their filing journey. Explanations for unexpected information helps the user progress smoothly through their task at hand without worrying they have missed or mistaken something and thus performing extra checking actions. This kind of taxpayer confidence-building also works toward ensuring the user has as smooth an experience as possible and is more likely to return to e-filing in the future, rather than be scared away by a confusing or intimidating experience.

Use plain language to describe all eligibility requirements. Use plain language in any other content the user needs to gain information and complete their task. Aim to write at a common low reading level (e.g., 8th grade reading level) to ensure that all eligible taxpayers can effectively access the Free File program regardless of background.

Offer visual relief to break up the visual monotony of a litany of text boxes. Visuals like logos of the offerings, inserted into each box or next to the appropriate Free File software offer name, can help taxpayers quickly differentiate between offerings and remember software providers they wish to scroll back to or revisit. Logos also help clarify that the offerings are not IRS or government affiliates, which addresses the point of confusion in *Select Offer without Lookup Tool 4*.

Make sure Free File software offer names on both the IRS site and the software provider site itself match in order to ensure users understand the connection between the Free File program and the software provider site.

4.2.4.3 Select Offer Without Lookup Tool 3

Table 19. Select an Offer Without the Lookup Tool 3.

Task	Website	Page/Section	Issue	Severity	Count
Select an Offer without the Lookup Tool	IRS.gov	Free File Software Offers	Taxpayers were confused by inconsistent references to states regarding eligibility on the Free File software offers page	Medium	5

Description of the Issue

Taxpayers do not understand why some Free File software offers list states and others do not. They also do not understand why some states such as Texas are not listed anywhere. One taxpayer would stop entirely if they did not see their state listed. Other taxpayers were confused and did not understand why the state they were looking for was not listed.

Suggested Solutions

Include clear, understandable information that explains the differences. Include a statement that explains that not all states require filing a state tax return. Include a statement that explains that a free state tax return may not be available for all states that require filing a state tax return.

Present this information about state eligibilities both in the about information at the top of the page and in each offering description where state does not apply. Present it consistently across the offering descriptions.

This issue is related to Select Offer Without Lookup Tool 2.

4.2.4.4 Select Offer Without Lookup Tool 4

Table 20. Select an Offer Without the Lookup Tool 4.

Task	Website	Page/Section	Issue	Severity	Count
Select an Offer without the Lookup Tool	IRS.gov	Free File Software Offers	Taxpayers expected to see an IRS.gov-related software offer	Low	7

Description of the Issue

Taxpayers expected to see an offer that was directly associated with the IRS and were confused when they did not see one. They assumed that Free File software was provided directly by the IRS and not by tax preparer software providers.

Some taxpayers commented on the amount of Free File software offers available and that they were looking for one from the IRS. One taxpayer said, “There are so many listed here my goodness. Why do they have to have so many vendors? You would think there would just be one for the IRS here. I want to know I am dealing directly with the IRS. I want something that looks familiar to me.”

Some taxpayers were looking for more explicit language that would let them know the Free File software offers would not be provided by the IRS itself and the offers listed were fine to use or legitimate. One taxpayer said, “I wish it could have said something like ‘all of these programs are the programs, and that IRS itself is not the option, that it is okay to use these second party groups to file.’”

Suggested Solutions

On the Free File landing page *and* on the offerings page, include a plain-language statement saying that the IRS acknowledges the software providers in question as providing legitimate Free File software offerings. Describe this in a way that assure the site visitor that the links below are legitimate.

Clearly state that the links will go to external sites/software provider pages.

Consider including an “open in new window” icon beside each offering link: . This differentiates them from links leading to other IRS websites.

Include software provider logos to increase the look of legitimacy.

Ensuring taxpayers have a clear understanding of the Free File program and its boundaries also mitigates this issue.

4.2.4.5 Select Offer Without Lookup Tool 5

Table 21. Select an Offer Without the Lookup Tool 5.

Task	Website	Page/Section	Issue	Severity	Count
Select an Offer without the Lookup Tool	IRS.gov	Free File Software Offers	Taxpayers misunderstood the order of Free File software offers displayed	Low	2

Description of the Issue

Taxpayers expressed the belief that the order of Free File software offers is by some criteria other than random. They were not sure how to assess and interpret the order of the options.

One taxpayer believed the most popular options were placed at the top. Another taxpayer pointed out that some of the options were household names while others are not but that nothing indicated whether or not the options were the same quality. This taxpayer said, “I guess you could assume they are all equally valid...There is nothing on the results page that tells you that you can use any of them and get the same result, it’s legitimate and ok.”

Suggested Solutions

On the “Free File software offers” page (<https://apps.irs.gov/app/freeFile/> and shown in Figure 9), immediately above the boxes with the Free File software offers, include a statement like the following: “Below you will find the Free File software offers listed. The order of the offers is random and changes each time the page is closed and opened again.”

Alternatively, the statement could say that the ordering does not indicate any quality difference between Free File software offers or any preference on behalf of the IRS and direct the user to choose the offering that best fits their individual needs. The arrow in Figure 9 shows where this statement could be placed.

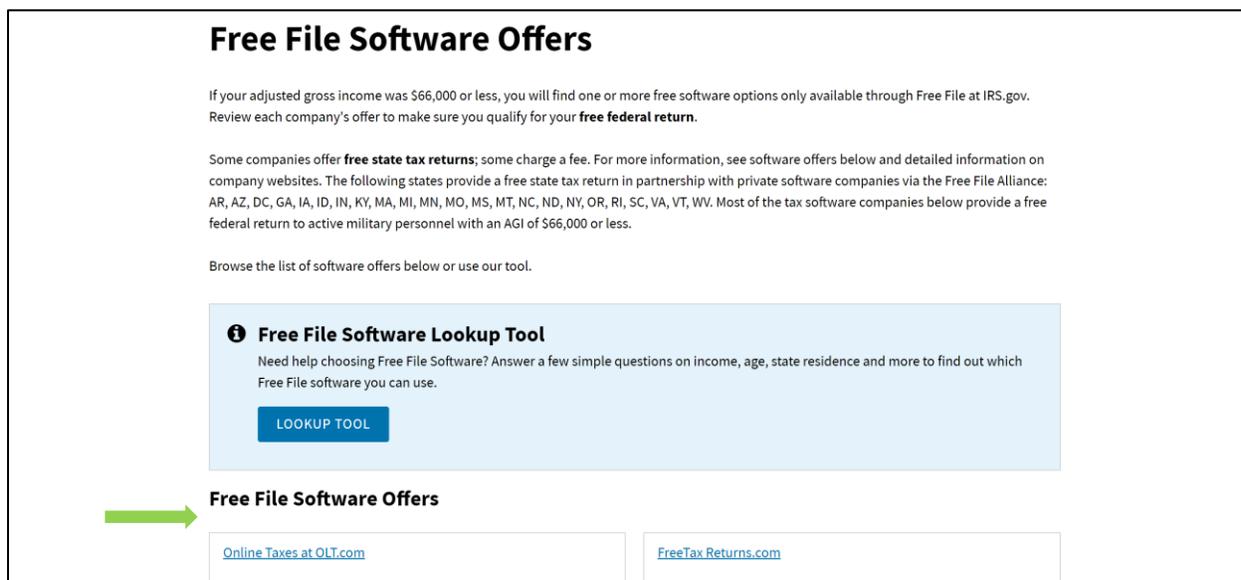


Figure 9. Free File Software Offers Page.

4.2.5 Taxpayer Usability Issues while Performing Task 2b – Selecting a Free File Software Offer (With the Lookup Tool)

In this task, the interviewers instructed taxpayers to use a fictitious scenario to select a Free File software offer using the Free File software lookup tool.

4.2.5.1 Select Offer With Lookup Tool 1

Table 22. Select Offer With Lookup Tool 1.

Task	Website	Page/Section	Issue	Severity	Count
Select an Offer with the Lookup Tool	IRS.gov	Lookup Tool	Taxpayers assumed the lookup tool checks veracity of responses	High	5

Description of the Issue

Taxpayers assumed the lookup tool would perform a check of the veracity of their responses to the tool’s questions. They expected that the IRS tool would check their answers for accuracy. One taxpayer said, “I’m assuming that since I was routed through IRS.gov, the way I came into it specifically, that yeah I qualify [for the EITC], especially since I answered the questions correctly.... The IRS has a responsibility to make sure that certain items are correct.”

Multiple taxpayers selected “yes” for being eligible for the EITC because they expected the website would verify their selections later. Taxpayers also chose “yes” to the EITC question because they did not want to miss an opportunity for a credit, and they believed the lookup tool, or another system would check their answers later. They did not think there were negative consequences to incorrect affirmative answers, only the potential negative consequence of

missing out on opportunities of the incorrectly answered in the negative. When asked by the interviewer why they selected “yes” for the EITC, one taxpayer responded, “I figured if it was a credit, they would check my info. If I said no, I thought I might miss out on an opportunity to see if I’m eligible.” Another echoed this sentiment, stating (regarding EITC), “There will be some kind of check and balance that will let me know I don’t make it... at some point it will check my work.”

This thinking resulted in taxpayers quickly making incorrect selections in the tool, particularly for the question about EITC eligibility.

This issue is related to Select Offer with Lookup Tool 2.

Suggested Solutions

Include a statement in the tool description that says “Please enter your information accurately. The tool does not verify your responses.” Or “The tool does not confirm you qualify for certain credits but makes suggestions for software offers based on the information you enter. It does not guarantee that the Free File software offers suggested meet your specific needs.”

Ensure that explanatory information, like the EITC pop-up modal, are easy to understand and support decision making. Some participants had difficulty understanding the EITC modal eligibility information and answered incorrectly after reading it.

Alternatively, instead of asking about EITC eligibility, instead ask the taxpayer for information that determines EITC eligibility, like income (already asked), anticipated filing status, and number of children. This adds just one item to the tool’s questions. These questions are easier for taxpayers to correctly and quickly answer.

On the tool results page, explicitly state that these recommendations are based on the user’s responses in the tool, and that the tool did not check their responses for accuracy.

This issue is related to Select an Offer with Lookup Tool 11.

4.2.5.2 Select Offer With Lookup Tool 2

Table 23. Select Offer With Lookup Tool 2.

Task	Website	Page/Section	Issue	Severity	Count
Select an Offer with the Lookup Tool	IRS.gov	Lookup Tool	Taxpayers selected "yes" to the EITC question when unsure of their answer	High	8

Description of the Issue

When taxpayers were not sure about the correct response to EITC eligibility question in the lookup tool, they tended to select "yes." They erred on the side of wanting to maintain eligibility if possible and did not want to be discounted for opportunities. One taxpayer said, “I did it just in case.”

Another taxpayer chose “yes” because they expected another check on their eligibility to occur later. They said, “I figure if I say yes, and I’m not, maybe they’ll tell me.”

Some taxpayers decided to choose “yes” based on their own EITC understanding or based on their own eligibility.

Suggested Solutions

Clarifying the purpose of the lookup tool and the fact that it does not check whether or not taxpayers’ responses are correct will help mitigate this problem.

See suggested solutions for *Select an Offer with the Lookup Tool 1* and *Select an Offer with the Lookup Tool 11*.

Alternatively, consider removing the EITC question from the lookup tool entirely and including instead a series of questions that determine EITC eligibility for the taxpayer, as described in the suggestions for *Select an Offer with the Lookup Tool 1*.

Make sure that the lookup tool and all associated descriptions and directions use plain language.

4.2.5.3 Select Offer With Lookup Tool 3

Table 24. Select Offer With Lookup Tool 3.

Task	Website	Page/Section	Issue	Severity	Count
Select an Offer with the Lookup Tool	IRS.gov	Lookup Tool	Taxpayers did not know how to answer the EITC question and wanted to leave it blank or leave the Lookup Tool	High	2

When taxpayers arrived at the Earned Income Tax Credit question in the lookup tool (Figure 10), they expressed general confusion. One taxpayer did not know how to answer the question, ended up not finishing the lookup tool and did not select a Free File software offer. Another taxpayer wasn’t sure how to answer, decided to guess, and selected “yes.”

Are you eligible for the [Earned Income Tax Credit](#)?*

Yes

No

Figure 10. EITC Question in Free File Software Lookup Tool.

Possible Solutions

Remove the requirement that taxpayers must select a yes or no response to the EITC eligibility question on the lookup tool. Accordingly, if a response is not provided, suggest Free File software offers that match both EITC eligible and ineligible in the suggested Free File software offer results. Visually separate these offerings, describe why they are separated, and enable the taxpayer to understand at this point whether they are eligible for the EITC or not.

Consider replacing the single EITC eligibility question with multiple questions that determine EITC eligibility when taken together—filing status, AGI, wage income, and number of dependents.

Make sure that the lookup tool and all associated descriptions, directions, and explanatory information use plain language.

These suggestions overlap with several in *Select Offer with Lookup Tool 1* and *Select Offer with Lookup Tool 2*.

4.2.5.4 Select Offer With Lookup Tool 4

Table 25. Select Offer With Lookup Tool 4.

Task	Website	Page/Section	Issue	Severity	Count
Select an Offer with the Lookup Tool	IRS.gov	Lookup Tool	Taxpayers did not understand information in EITC modal pop-up, specifically misreading filing status requirements	High	3

Description of the Issue

Taxpayers misread the text in the EITC modal and believed the EITC is for married people only. One taxpayer said, “He is not married so he wouldn’t be eligible.”

Referring to the EITC modal, another taxpayer said, “It says for married but doesn’t say anything for single.”

After reading the EITC modal, one taxpayer said, “Looks like he doesn’t qualify cause you gotta be married. That’s really unfair to single parents.”

The modal does not explicitly mention any other filing statuses besides married filing jointly. The language in the modal leads taxpayers to believe that only married taxpayers are eligible for the EITC.

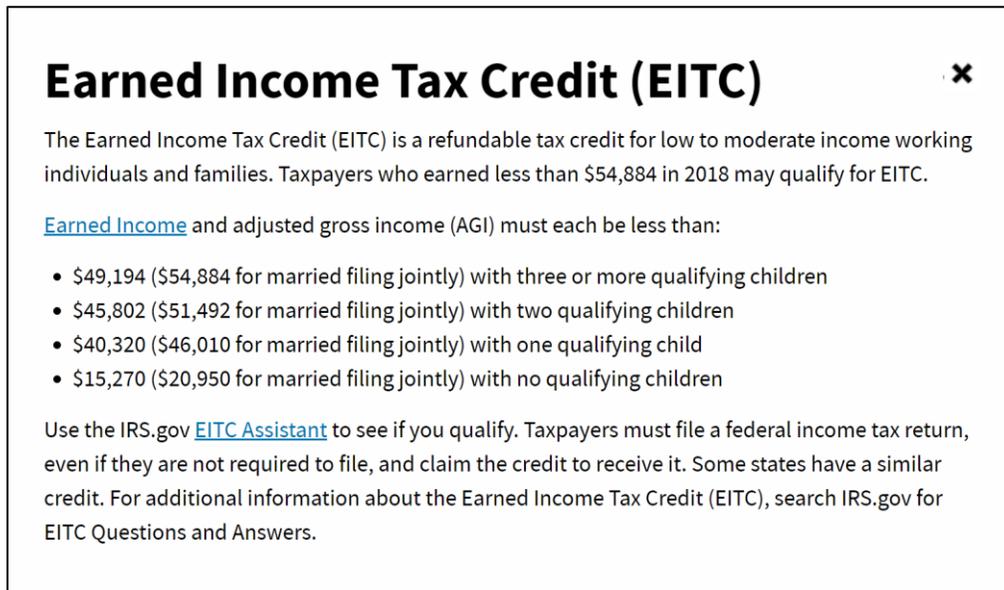


Figure 11. EITC Pop-up Modal from the Lookup Tool.

Suggested Solutions

Split the EITC modal into two sections—one with information for married filing jointly and one for all other filing statuses. Additionally, list out the other filing statuses.

Alternatively, list the requirements with the dependent information up front and the two AGI cut-offs as distinct bullet points beneath each. This is suggested because users will read the beginning of the bullet points first and may not finish reading the points; and because it is generally easier and faster to accurately recall how many children one has than one’s earned income or AGI. Therefore, organizing around number of children enables the taxpayer to move faster through the dependency flow. For example:

“Look below to find the cutoff for earned income and adjusted gross income (AGI) for each situation. If you are **below the cutoff for your filing situation**, you qualify for the EITC.

- If you have *no qualifying children*
 - If you **are married and filing jointly**: less than [amount]
 - If you **are NOT** married and filing jointly: less than [amount]”
- If you have *one qualifying child*
 - If you **are married and filing jointly**: less than [amount]
 - If you **are NOT** married and filing jointly: less than [amount]
- If you have *two qualifying children*
 - If you **are married and filing jointly**: less than [amount]
 - If you **are NOT** married and filing jointly: less than [amount]
- If you have *three or more qualifying children*
 - If you **are married and filing jointly**: less than [amount]
 - If you **are NOT** married and filing jointly: less than [amount]

4.2.5.5 Select Offer With Lookup Tool 5

Table 26. Select Offer With Lookup Tool 5.

Task	Website	Page/Section	Issue	Severity	Count
Select an Offer with the Lookup Tool	IRS.gov	Lookup Tool	In general, taxpayers do not understand information in EITC modal	High	3

Description of the Issue

Taxpayers read the text in the EITC modal yet inexplicably selected the incorrect answer for their scenario. One taxpayer believed they found the information they needed in the modal and said, “So basically, it tells you all the things you need to know if you qualify for earned income credit if you click on the bar for earned income credit.” This taxpayer still selected the incorrect answer.

Suggested Solutions

Do not assume that taxpayers are familiar with AGI, EITC, and how they are applicable to them. Use plain language to describe what they are and why they might matter to the taxpayer. Avoid extraneous information.

Organize information clearly and use visual separation as appropriate. Do not “hide” important information in dense blocks of text. As much as possible, limit bullet points to one line long and do not nest clauses within a single bullet point.

Consider replacing the modal with a short wizard that walks the taxpayer through a few questions and then answers whether or not they are eligible for the EITC. If the EITC assistant is used here, modify it so that the user does not have to leave the page to walk through the assistant. See other suggestions in *Select Offer with Lookup Tool 1, 2, 3, 4, and 6*.

4.2.5.6 Select Offer With Lookup Tool 6

Table 27. Select Offer With Lookup Tool 6.

Task	Website	Page/Section	Issue	Severity	Count
Select an Offer with the Lookup Tool	IRS.gov	Lookup Tool	Taxpayers did not understand the relationship between having dependents and qualifying for EITC	High	2

Description of the Issue

Taxpayers had a preconceived notion that people with dependents automatically qualify for the EITC. Two taxpayers expressed this belief and committed an error and incorrectly selected yes on the lookup tool EITC question. One of the two committed this error despite reading the EITC modal in the lookup tool.

Suggested Solutions

Reverse the order of the bullet points on the EITC modal to start with no qualifying dependents. Bold or capitalize the word “no” to highlight the fact that taxpayers with no dependents can qualify as well. See the suggested solution for *Select Offer with Lookup Tool 4* for an example of how this could look.

Break out the statement “Taxpayers who earned less than \$54,884...” into its own space and give it visual emphasis, e.g., by bolding it. Follow it with the detail, “Income limits depend on filing status and number of dependents. See below.”

Suggestions in other EITC-related issues *Select Offer with Lookup Tool 1, 2, 3, 4, and 5* apply as well, such as limiting the content per bullet point, structuring head bullet points to begin with number of dependents and replacing the EITC modal with a wizard.

4.2.5.7 Select Offer With Lookup Tool 7

Table 28. Select Offer With Lookup Tool 7.

Task	Website	Page/Section	Issue	Severity	Count
Select an Offer with the Lookup Tool	IRS.gov	Lookup Tool	Taxpayer assumed incorrect criteria for EITC eligibility and did not seek additional information to confirm assumption	High	1

Description of the Issue

The taxpayer assumed incorrect criteria for EITC eligibility and did not seek additional information from sources such as the lookup tool EITC modal to confirm their assumption. This

resulted in the taxpayer committing an error for EITC in the lookup tool. The taxpayer explained their decision to select yes for EITC eligibility: “It was just... your income, and if you have dependents or not, you would know that about yourself.”

Suggested Solutions

Replace the single EITC question, which requires taxpayers to either understand EITC eligibility or read and understand the text in the EITC modal, with a series of questions that are designed to determine EITC eligibility (e.g., ask number of dependents, wage income, and filing status). This would remove taxpayers’ risk of believing they understand EITC eligibility when they do not, and thus responding inaccurately.

Include a customer service or help function in the lookup tool page that does not require the user to leave the page, e.g., an FAQ section that can expand/hide or a chatbox to ask questions of a customer service representative or an automated customer service bot.

Move some of the modal information into the lookup tool page itself and reword it more simply so users can make decisions more efficiently and accurately.

4.2.5.8 Select Offer With Lookup Tool 8

Table 29. Select Offer With Lookup Tool 8.

Task	Website	Page/Section	Issue	Severity	Count
Select an Offer with the Lookup Tool	IRS.gov	Lookup Tool	Taxpayers were still confused about EITC after using the EITC assistant	High	2

Description of the Issue

Taxpayers attempted to get more information about the EITC by using the EITC assistant (<https://www.irs.gov/credits-deductions/individuals/earned-income-tax-credit/use-the-eitc-assistant>). Despite using this tool, they were still confused about EITC. Expressing their confusion, one taxpayer said, “The EITC tool was really frustrating. I got confused because it said something about married or widow that was confusing, and the result gave me widower [which did not apply to me].”

Suggested Solution

Providing solutions to improve the functionality of the EITC assistant is outside the scope of this assessment. However, MITRE recommends clarifying the language in the EITC modal, replacing the modal with an in-page wizard, or replacing the EITC eligibility question in order to lessen taxpayers’ need to exit the lookup tool and visit the EITC Assistant.

See Select Offer with Lookup Tool 1, 2, 3, 4, 5, and 6 for related suggested solutions.

4.2.5.9 Select Offer With Lookup Tool 9

Table 30. Select Offer With Lookup Tool 9.

Task	Website	Page/Section	Issue	Severity	Count
Select an Offer with the Lookup Tool	IRS.gov	Lookup Tool	Taxpayer did not understand income limits information in the EITC modal in the lookup tool	High	1

Description of the Issue

The taxpayer only reads the beginning portion of the information provided in the EITC modal (see Figure 11) in the lookup tool that states the income limit is \$54,000. The taxpayer does not continue reading past this point, selects yes for EITC eligibility and says, “because it’s less than 54K.”

This selection was incorrect given the fictitious scenario the taxpayer was using.

Suggested Solutions

Replace the EITC eligibility question with questions that together assess EITC eligibility (income, qualifying dependents, filing status) but are individually easier to answer for taxpayers not well-versed in tax terminology.

Re-arrange the contents of the EITC modal so that it is easier to read and understand at a glance. Visually separate different pieces of information and do not combine multiple pieces of important information into a single bullet point. Consider structuring the EITC modal content around number of qualifying dependents.

Replace the EITC modal with a short, on-page wizard that walks the user through determining their EITC eligibility.

See related suggestions in Select Offer with Lookup Tool 1, 2, 3, 4, 5, and 6.

4.2.5.10 Select Offer With Lookup Tool 10

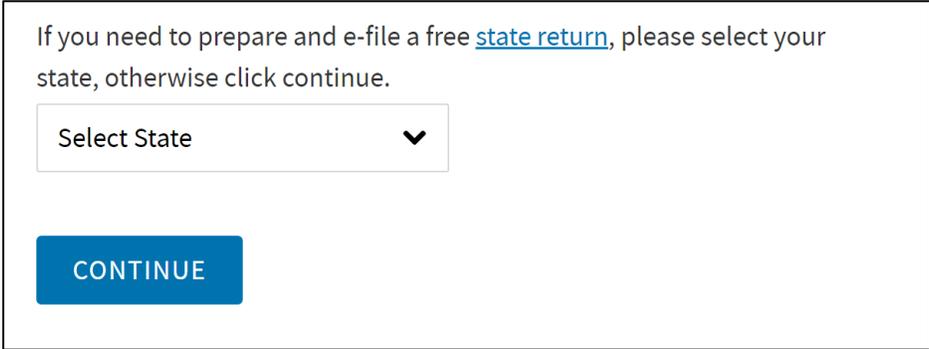
Table 31. Select Offer With Lookup Tool 10.

Task	Website	Page/Section	Issue	Severity	Count
Select an Offer with the Lookup Tool	IRS.gov	Lookup Tool	Taxpayers were confused by missing states or selecting no state at the "state return" drop-down box	Medium	6

Description of the Issue

Taxpayers did not understand why all states were not shown in the state return drop-down box (Figure 12). Some taxpayers did not know how to select no state. Several taxpayers were confused by this but did not commit an error as a result.

One taxpayer selected the tooltip on state return question, but the state return popup box did not clarify the issue for the taxpayer (Figure 13). Another taxpayer thought the missing state might have been a computer blip, so they left the lookup tool page and looked for a Free File software offer from the list on the Free File software offers page.

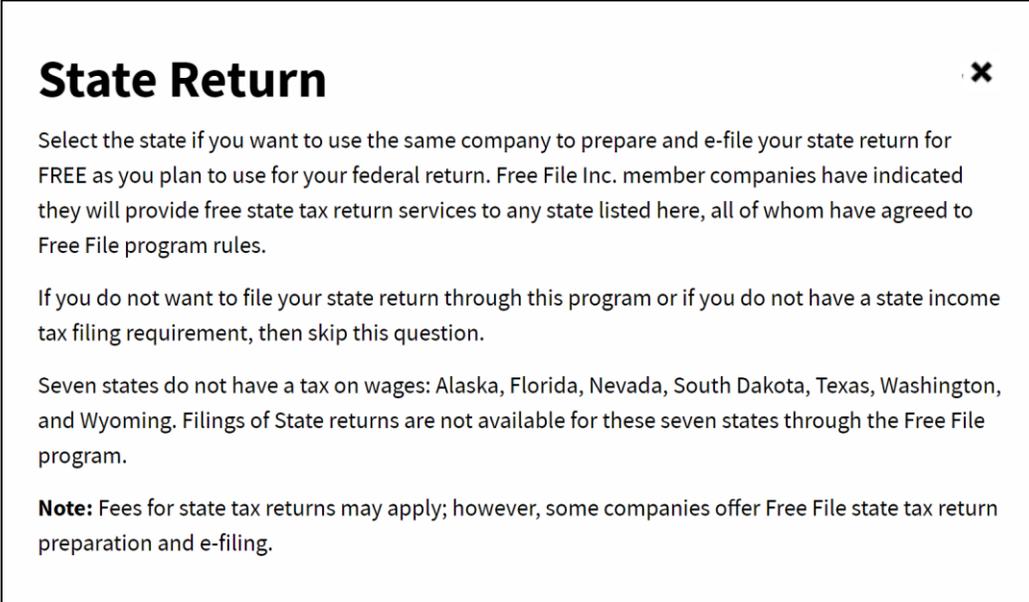


If you need to prepare and e-file a free [state return](#), please select your state, otherwise click continue.

Select State ▼

CONTINUE

Figure 12. State Return Question From the Lookup Tool.



State Return ✕

Select the state if you want to use the same company to prepare and e-file your state return for FREE as you plan to use for your federal return. Free File Inc. member companies have indicated they will provide free state tax return services to any state listed here, all of whom have agreed to Free File program rules.

If you do not want to file your state return through this program or if you do not have a state income tax filing requirement, then skip this question.

Seven states do not have a tax on wages: Alaska, Florida, Nevada, South Dakota, Texas, Washington, and Wyoming. Filings of State returns are not available for these seven states through the Free File program.

Note: Fees for state tax returns may apply; however, some companies offer Free File state tax return preparation and e-filing.

Figure 13. State Return Pop-up From the Lookup Tool.

Suggested Solutions

After the statement, “If you need to prepare and e-file a free state return, please select your state, otherwise click continue.” include an additional statement on a new line saying, “[Names of states] do not have a tax on wages, so they do not appear on the response options. [New line.] If your state does have an income tax and does not appear in the response options, your state is not eligible for free filing. You may still be eligible to file your *federal* returns through Free File in this case.”

Use plain language in the state and residence information modals and explicitly address common points of confusion. “Tax on wages” is inconsistent with “file your state tax return.” “Select the state, [etc.]... that you will include on your federal income tax return” from the residence modal

does not guide the taxpayer on what to do in cases of residing in multiple states, territories, etc. in the same tax year.

Describe “residence” as “primary residence from Jan/year to Dec/year” in the residence question for increased clarity, accuracy, and efficiency.

A series of alternative solutions are as follows:

Include a “no state needed” option on the menu and revise the sentence to say, “If you need to prepare and e-file a free state return, please select your state, otherwise select ‘no state needed’ and click continue.”

Another option is to include all states in the response drop down, and when a user selects a state that is not eligible for Free File, show an alert above, below, or next to the question area that says:

- “This state is not eligible for Free File because it does not have a tax on wages. You do not need to file a state return for [state name]. You may still be eligible to file your federal return for free through Free File.”

Or says:

- “This state is not eligible for Free File. [State name] does have a tax on wages and you may need to file a state return for [state name] through another avenue. You may still be eligible to file your federal return for free through Free File.”

This solution would greatly decrease user confusion and frustration. The question should still have a “Do not wish to prepare and e-file a state return” response and should not be required.

Another option is to remove the state return question and use the taxpayer’s response on their state residence. This solution is suggested with the assumption that taxpayers typically only need to file state returns in the state of their residence, and with the observation that participants tended to look for a Free File software offer that supported state return filing when one was available. For this option, if the state residence is not Free File-eligible because it does not have a tax on wages, the lookup tool would return a statement along with the options that would say:

- “[State name] is not eligible for Free File because it does not have a tax on wages. You do not need to file a state return for [state name]. You are still eligible to e-file your federal return for free through Free File using the Free File software offers named below.”

And if the state does have an income tax but is not eligible for Free File, the statement would say:

- “[State name] is not eligible for Free File. [State name] does have a tax on wages and you may need to file a state return for [state name] through another avenue. You are still eligible to e-file your federal return for free through Free File using the Free File software offers named below.”

This solution would greatly decrease user confusion and frustration and cut down on the questions the taxpayer needs to answer using the tool. It still gives them the opportunity to choose a federal return-only offering.

4.2.5.11 Select Offer With Lookup Tool 11

Table 32. Select Offer With Lookup Tool 11.

Task	Website	Page/Section	Issue	Severity	Count
Select an Offer with the Lookup Tool	IRS.gov	Lookup Tool	Taxpayers were confused about the purpose of the lookup tool	Medium	4

Description of the Issue

Taxpayers were not sure about the purpose of the lookup tool. The lookup tool button label and the supporting text do not clearly convey the purpose of the tool, which causes taxpayers to be confused about its functionality and to ascribe characteristics to the tool that it doesn't have. For example, taxpayers believed that the lookup tool would verify their eligibility for Free File, rather than help them select a Free File software offer they are eligible for based on their self-reports. One taxpayer explained that she believed the lookup tool was a "qualification" tool, "not a lookup tool; lookup tool makes me think I am already qualified... not trying to get qualified."

Suggested Solutions

Change the button label text to task-oriented language such as, "Select Free File program for your tax return.

Remove text that reads "Eligibility Verification" at the top of the lookup tool page (<https://apps.irs.gov/app/freeFile/jsp/wizard.jsp?>). This contradicts the concept of selecting a Free File software offer and reinforces the idea that the lookup tool verifies whether a taxpayer is eligible for Free File. (See Figure 14.)

Include a new sentence immediately after the title on the lookup tool page (<https://apps.irs.gov/app/freeFile/jsp/wizard.jsp>). This title should say "The purpose of the Free File software lookup tool is to help you find a Free File software offer that you are eligible for. Try to answer questions correctly to the best of your ability; the tool does not check if your answers to eligibility questions are correct, and your answers impact the offers you are eligible for."

On the tool results page, the blue links appear in the same style as the rest of the IRS.gov site, making it seem like the user will be navigating within IRS.gov. Include logos to show the credibility of these non-IRS providers and to communicate that the user will be navigated away from the page. Have the offering open in a new browser window or new browser tab.

On the tool results page, provide links back to other IRS.gov pages (e.g. fillable forms, IRS.gov home, browse all Free File offerings). Update the IRS Online Design Guide style so that users may access key pages of IRS.gov.



Free File Software Lookup Tool

Complete the answers to determine what Free File software is available for you. If you cannot answer the questions, you may want to view the complete [Free File Software Offers](#) and services provided.

All fields with * are required.

Eligibility Verification

Figure 14. "Eligibility Verification" Text on Lookup Tool Page Misrepresents Purpose.

4.2.5.12 Select Offer With Lookup Tool 12

Table 33. Select Offer With Lookup Tool 12

Task	Website	Page/Section	Issue	Severity	Count
Select an Offer with the Lookup Tool	IRS.gov	Lookup Tool	Taxpayers did not notice the lookup tool button	Low	4

Description of the Issue

Taxpayers (many of whom expressed satisfaction with the lookup tool after using it later in the session) did not notice the tool on their own. They often overlooked the lookup tool box and quickly scrolled to the Free File software offers list. See Figure 15 for the lookup tool box; and Table 33 for task issue severity.

Even taxpayers who had been to the Free File landing page before the session commented that they had never noticed the lookup tool on previous page visits.

Prior to the interviewer directing them to the lookup tool, one taxpayer described a set of functions they had hoped for, which were similar to the functions of the tool. This taxpayer said, “I would like to have it [IRS site] ask what state I live in and it provide appropriate results. Can ask three questions to reduce the number of options: Is your income less than – and click the right income level. What state do you live in? And is your age less than 56?”

The visual display of the lookup tool resembles an alert box, which means that when site visitors arrive on the page and skim its contents, they are less likely to interpret it as a tool they can use and more likely to read the title, decide they don’t understand what it does, and move down the page.

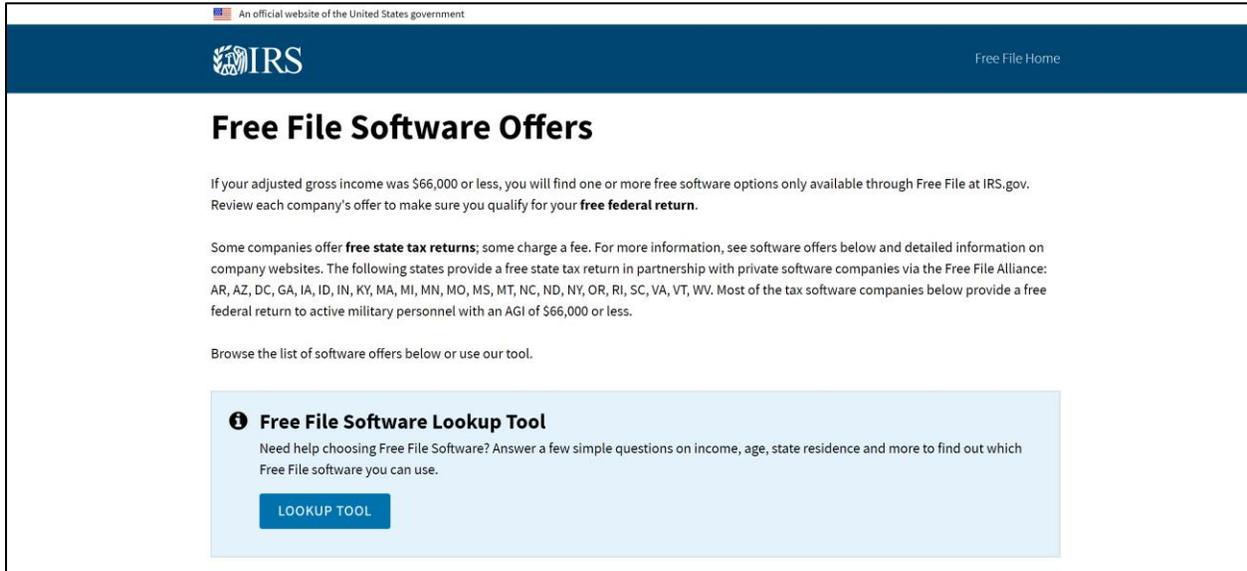


Figure 15. Access to the Lookup Tool From Free File Software Offers Page.

Suggested Solutions

Move the lookup tool button to the top of the page, under the page header. Relabel the blue button to “Select a Free File Software Offer” to use task-oriented language and clarify its purpose. Use “website,” “web,” “online,” or “e-filing” rather than “software,” since users may not understand what is meant here by software and since many of the offers are for online filing. Change the header text “Free File Software Lookup Tool” to “Need helping choosing a Free File online offer?” to more clearly highlight its functionality.

Change the visual display of the lookup tool box to resemble an alert less, perhaps by removing the “info” icon. Keep it separated from the general descriptive Free File information.

Alternately, place a walk-through in the lookup tool box space on this page that walks the user through answering eligibility criteria and then highlights the eligible Free File software offers on the page. This minimizes mouse clicks and keeps all interactions centrally located to one area.

4.2.5.13 Select Offer With Lookup Tool 13

Table 34. Select Offer With Lookup Tool 13.

Task	Website	Page/Section	Issue	Severity	Count
Select an Offer with the Lookup Tool	IRS.gov	Lookup Tool	Taxpayers perceived too many options returned from the lookup tool	Low	3

Description of the Issue

Taxpayers were overwhelmed by the number of choices returned from the lookup tool and had trouble choosing an offer. They did not understand why there were so many options and expressed that it would be difficult to make a choice.

Several taxpayers incorrectly selected yes for EITC eligibility, which resulted in additional results being returned from the tool. It is important to note that taxpayers who do actually qualify for EITC and correctly use the lookup tool will receive a large number of results from the tool as well. They may find the amount of offers available to them overwhelming and may find it difficult to select a software offer.

This issue is related to Select Offer with Lookup Tool 14.

Suggested Solutions

Include a tooltip with each of the resulting offers that when clicked, allows taxpayers to see the eligibility criteria associated with each offer. This would give taxpayers the option to revisit the offers’ eligibility criteria without putting too much information on the results page and without requiring taxpayers to leave the page.

Additionally, include the logo for each of the results to help taxpayers become more comfortable with the legitimacy of all the results.

Add an option to the tool results page, e.g., a button, to return to the lookup tool. If possible, it should return the user to the lookup tool with their information still populated in the fields.

Make the text at the top of the tool results page larger, simpler, and clearer to direct users to browse the offerings available on the providers’ websites.

Explain clearly what the difference is between the federal only and federal and state Free File software offer results and explain why a taxpayer might choose one over the other. Recommend what kind of things the user should consider in choosing a Free File software offer that fits their needs best.

4.2.5.14 Select Offer With Lookup Tool 14

Table 35. Select Offer With Lookup Tool 14.

Task	Website	Page/Section	Issue	Severity	Count
Select an Offer with the Lookup Tool	IRS.gov	Lookup Tool	Taxpayers expected to see eligibility criteria returned with lookup results	Low	3

Description of the Issue

Taxpayers did not know how to select a Free File software offer returned from lookup tool without being able to review the eligibility criteria in the same format as is shown on the Free File software offers page. Taxpayers expressed that either they would not know what to do on the results page or that they needed to do additional research on the offers.

This issue is related to Select Offer with Lookup Tool 13.

Suggested Solutions

The suggestion from *Select Offer with Lookup Tool 13* applies here: Include a tooltip with each of the resulting offers that when clicked, allows taxpayers to see the eligibility criteria associated with each offer. This would give taxpayers the option to revisit the offers’ eligibility criteria

without putting too much information on the results page and without requiring taxpayers to leave the page.

Additionally, include the logo for each of the results to help taxpayers become more comfortable with the legitimacy of all the results.

Add an option to the tool results page (e.g., a button) to return to the lookup tool. If possible, it should return the user to the lookup tool with their information still populated in the fields.

Make the text at the top of the tool results page larger, simpler, and clearer to direct users to browse the offerings available on the providers’ websites.

Explain clearly what the difference is between the federal only and federal and state Free File software offer results and explain why a taxpayer might choose one over the other. Recommend what kind of things the user should consider in choosing a Free File software offer that fits their needs best.

4.2.5.15 Select Offer With Lookup Tool 15

Table 36. Select Offer With Lookup Tool 15.

Task	Website	Page/Section	Issue	Severity	Count
Select an Offer with the Lookup Tool	IRS.gov	Lookup Tool	Taxpayer was confused by the two questions regarding states in the lookup tool	Low	1

Description of the Issue

One taxpayer did not understand why the lookup tool had two questions (Figure 16 and Figure 17) about states and did not understand the difference between them.

What is your [residence](#) for filing your 2018 income tax return?*

Select Residence ▼

Figure 16. Lookup Tool State Question 1 – Residence.

If you need to prepare and e-file a free [state return](#), please select your state, otherwise click continue.

Select State ▼

Figure 17. Lookup Tool State Question 2 – Filing a State Return.

This is further complicated by the fact that not all states show up in the second state question, which is specifically about preparing and e-filing a free state return. For more information on this topic, see *Select Offer with Lookup Tool 10*.

Suggested Solutions

Suggestions from *Select Offer with Lookup Tool 10* apply here:

After this statement—“If you need to prepare and e-file a free state return, please select your state, otherwise click continue.”—include an additional statement on a new line saying, “[Names of states] do not have a tax on wages, so they do not appear on the response options. [New line.] If your state does have an income tax and does not appear in the response options, your state is not eligible for free filing. You may still be eligible to file your federal returns through Free File in this case.”

Use plain language in the state and residence information modals and explicitly address common points of confusion. “Tax on wages” is inconsistent with “file your state tax return.” “Select the state, [etc.]... that you will include on your federal income tax return” from the residence modal does not guide the taxpayer on what to do in cases of residing in multiple states, territories, etc. in the same tax year.

Describe “residence” as “primary residence from Jan/year to Dec/year” in the residence question for increased clarity, accuracy, and efficiency.

A series of alternative solutions are as follows:

Include a no state needed option on the menu and revise the sentence to say, “If you need to prepare and e-file a free state return, please select your state, otherwise select ‘no state needed’ and click continue.

Another option is to include all states in the response drop down, and when a user selects a state that is not eligible for Free File, show an alert above, below, or next to the question area that says:

- “This state is not eligible for Free File because it does not have a tax on wages. You do not need to file a state return for [state name]. You may still be eligible to file your federal return for free through Free File.”

Or says:

- “This state is not eligible for Free File. [State name] does have a tax on wages and you may need to file a state return for [state name] through another avenue. You may still be eligible to file your federal return for free through Free File.”

This solution would greatly decrease user confusion and frustration. The question should still have a “Do not wish to prepare and e-file a state return” response and should not be required.

Another option is to remove the state return question and use the taxpayer’s response on their state residence. This solution is suggested with the assumption that taxpayers typically only need to file state returns in the state of their residence, and with the observation that participants tended to look for a Free File software offer that supported state return filing when one was available. For this option, if the state residence is not Free File-eligible because it does not have a tax on wages, the lookup tool would return a statement along with the options that would say:

- “[State name] is not eligible for Free File because it does not have a tax on wages. You do not need to file a state return for [state name]. You are still eligible to e-file your federal return for free through Free File using the Free File software offers named below.”

And if the state does have an income tax but is not eligible for Free File, the statement would say:

- “[State name] is not eligible for Free File. [State name] does have a tax on wages and you may need to file a state return for [state name] through another avenue. You are still eligible to e-file your federal return for free through Free File using the Free File software offers named below.”

This solution would greatly decrease user confusion and frustration and cut down on the questions the taxpayer needs to answer using the tool. It still gives them the opportunity to choose a federal return-only Free File software offer.

4.2.6 Taxpayer Usability Issues with Task 3 – Filing a Return Using a Pre-assigned Free File Software

In this task, the interviewers instructed taxpayers to use a given set of fictitious information to complete a federal income tax return using a pre-assigned Free File Software.

4.2.6.1 File a Return 1

Table 37. File a Return 1.

Task	Website	Page/Section	Issue	Severity	Count
Filing a Return	Member 3, Member 11	Student Loan Interest	Taxpayers were uncertain about where to enter student loan interest information	High	7

Description of Issue

Taxpayers were not sure where to enter their student loan information from the Form 1098-E while filing a return using Member 3 and Member 11. Specifically, some taxpayers were looking for a place to enter it while they were entering information from the Form W-2 or while entering income information. The place to enter student loan interest information was not where they expected it to be. One taxpayer said, “I was looking for student loan info in the wrong place in income but it’s on the deductions and credits page under education.”

On the page for entering Form W-2 information, for example, another taxpayer said, “Where’s the stuff for the student loan interest? Did I miss it? There’s no place to put the student loan interest unless I’m missing it.”

When given the option to select the forms they had for filing, some taxpayers did not select 1098-E from the list of documents, which prevented them from receiving any prompt from the system to enter student loan interest.

This uncertainty resulted in some taxpayers neglecting to enter any student loan information. Therefore, they incorrectly completed the return.

Suggested Solutions

Include an education expenses section with a checkbox for student loan payments on the page where taxpayers are selecting the items of basic information such as income and dependents that apply to them. Checking the box for student loan payment should trigger the presentation of a

Student loan interest payment deduction page when taxpayers later enter their information for deductions.

Make sure navigation is usable and descriptive to ensure users can go back and find where to enter student loan information if they miss it on their first pass.

Alternatively, provide overview pages for income, deductions, and credits that list all the common items and forms and allow taxpayers to select and enter information for them.

4.2.6.2 File a Return 2

Table 38. File a Return 2.

Task	Website	Page/Section	Issue	Severity	Count
Filing a Return	Member 3, Member 11	Select a Filing Status	Taxpayers were uncertain about selecting a filing status of either head of household or single	High	5

Description of the Issue

Taxpayers were uncertain or confused about selecting either head of household or single as their filing status. Some taxpayers assumed that since their marital status was single and they had one dependent in the scenario that they should file as head of household, which was not correct.

Taxpayers expected more information within the system to help them make the correct choice. Instead, they had to turn to an external source for more information. One taxpayer said, “The head of household alert provided a list of things without much guidance to discern if it applies. I had to do a separate Google search to learn more.”

If they choose head of household, some taxpayers expected to see questions or prompts to confirm their selection. One taxpayer who chose head of household said, “I thought it would ask some clarifying questions to make sure I was actually supposed to be filing as head of household, I don’t know why it didn’t ask me follow up questions. Maybe it did verify, and I didn’t realize it?” The Member 3 system does not provide any clarifying questions to confirm head of household qualifications.

The Member 11 system did not provide a step to verify that the taxpayer paid over half of their household expenses and is therefore qualified as head of household. This characteristic is what defined the taxpayer as a single rather than head of household filer in the test scenario.

This uncertainty led some taxpayers to make the incorrect selection of the head of household filing status.

This issue is related to File a Return 12.

Suggested Solutions

Provide step-by-step prompts to help taxpayers make the correct filing status selection, particularly between single and head of household.

4.2.6.3 File a Return 3

Table 39. File a Return 3.

Task	Website	Page/Section	Issue	Severity	Count
Filing a Return	Member 11	Quick File	Taxpayers were confused about what to do once they chose the quick file option	High	3

Description of the Issue

After completing basic information, taxpayers could choose between the options “Quick File” or “continue” for filing a federal return. With quick file, taxpayers would have to enter in the names of their forms on the next page. With continue, taxpayers would be taken to what Member 11 called a “more traditional style of entry.”

Some of the taxpayers who chose quick file became confused about what to do next once they chose quick file. On the quick file page, taxpayers are supposed to type in the forms they have and then proceed to the next pages to enter the information from the forms. They were immediately stuck and did not know what to do.

One taxpayer expected the quick file option to be simple since they believed the scenario information was simple. They said, “I would click on the quick file. It’s pretty clear cut. She’s not self-employed or anything. I would just go to quick file to see what I needed to do.”

This same taxpayer did not like that they were supposed to enter the forms they needed. This taxpayer said, “I actually don’t like this, it’s asking me what forms I need and I’m not sure, I’m going to go back and go with the other option.” This taxpayer backed out of quick file and was taken to where they selected “guide me.”

Another taxpayer expected there to already be information provided in the system. They said, “I thought since all the info was there, she was a citizen, I don’t have to go through every tiny detail. I was sure she did taxes last year so I figured her info was there.”

This taxpayer attempted to work through quick file but spent a lot of time going through pages that were not relevant to their scenario. This taxpayer eventually made it to the completed return page without entering any income information from their Form W-2.

Suggested Solution

Change the name of quick file to something that lets taxpayers know the option requires a fairly high level of familiarity with their forms and tax situation. The name “quick file” leads taxpayers to believe that it is an easier option than choosing to continue for the “more traditional style of entry.” It also may lead users to think that it involves some sort of file upload or employer identification number (EIN) document look-up, which it does not.

4.2.6.4 File a Return 4

Table 40. File a Return 4.

Task	Website	Page/Section	Issue	Severity	Count
Filing a Return	Member 10, Member 11	Create an Account	Taxpayers faced difficulty creating an account password	High	4

Description of the Issue

Taxpayers had a difficult time creating a new account password that met all password requirements (e.g., length, use of special characters, etc.).

Taxpayers did not find the password requirement information clear enough or they did not notice it. One taxpayer said, “They should have been more explicit in setting up the password (uppercase, lowercase, using symbols), so I knock off a point for that.”

Another taxpayer who did not notice the password requirements until they created an ineligible password said, “I don’t like that it didn’t tell you what’s required in the password until after you have entered it. I don’t like the way the password stuff is set up here. I want see the requirements before I type it in.”

All taxpayers but one participant eventually was able to overcome this challenge and proceed through the task; however, one taxpayer became visibly and vocally frustrated while trying to set up a password and was unable to continue on their own. A researcher had to intervene to assist the taxpayer through the password setup.

Suggested Solutions

Show password requirements in bold and brightly colored text before, during, and after taxpayers are entering a new password. Use an icon as well as different text colors to indicate whether the entered password meets requirements or not. Update this feedback in real time as the password is entered into the field.

Let users see what they have typed into the password field (a show/hide function may work well here).

It is recommended to show a real-time strength meter to encourage taxpayers to create strong passwords.

Follow user experience best practices in designing password interactions.

4.2.6.5 File a Return 5

Table 41. File a Return 5.

Task	Website	Page/Section	Issue	Severity	Count
Filing a Return	Member 11	Health Insurance	Taxpayers were confused by the wording of the health insurance question	Medium	3

Description of the Issue

Taxpayers incorrectly selected no when they arrived at the question asking if they had health insurance or were eligible for an exemption. This happened because participants were confused by the wording of the question. The question stated, “Did you or your family have health insurance or qualify for a health insurance coverage exemption at any time in 2018?”

Taxpayers were confused by the either/or nature of the question. One taxpayer said, “With health insurance I was tripped up by that question, if they had broken it into two questions, I would’ve understood better.”

One taxpayer was specifically confused by the word “exemption” in the question. This taxpayer said, “When asked about health insurance, I answered ‘no’ because I saw the word exemption in there. It should just say, ‘Did you or your family have employer sponsored health insurance?’ I find the question they have here a little confusing. It seems like they made it harder than it should be.”

Despite their initial confusion, once they received an alert or error, taxpayers went back to correct their answer to yes. However, clarifying the question may lead taxpayers to answer correctly the first time.

Suggested Solutions

Use plain language and do not assume that users have in-depth knowledge about tax filing matters. For example, provide an explanation of what an exemption is and how one knows if they qualify, or rephrase the question to be understandable to users with a lower level knowledge of taxes. Clarify that having health insurance from the marketplace is different than having it through an employer; “the marketplace” is not every-day terminology and appears confusing.

Separate the health insurance item into two separate questions that appear one at a time. On the first screen present taxpayers with the question, “Did you or your family have health insurance in 2018?” If the response is yes, proceed to the next item. If the response is no, present taxpayers with the next question, “Did you or your family qualify for a health insurance coverage exemption in 2018?”

4.2.6.6 File a Return 6

Table 42. File a Return 6.

Task	Website	Page/Section	Issue	Severity	Count
Filing a Return	Member 3	Dependent Information	Taxpayers were confused by the question asking how many months the dependent lived with them in the U.S.	Medium	2

Description of the Issue

Taxpayers were confused by the question asking how many months their fictional scenario dependent had lived with them. One taxpayer incorrectly entered 0 and proceeded. The participant did not explain why they made this selection. Another taxpayer skipped the field entirely. They were particularly confused by the “in the U.S.” portion of the question and confused by the icon and modal in the field for the number of months. This taxpayer explained their confusion saying, “I’ve never had to file a dependent, so this is all new to me”.

Suggested Solutions

Split this question up to walk the taxpayer through simple questions one at a time. For example:

- “Did your dependent live with you all 12 months of the year?”
 - Yes: “Did you and your dependent live together outside of the U.S. at any point during the filing year?”
 - Yes: “How many months did you and your dependent live together outside of the U.S. during the filing year?”
 - No: No further questions needed.
 - No: “How many months did your dependent live with you?”
 - “Did you and your dependent live together outside of the U.S. at any point during the filing year?”
 - Yes: “How many months did you and your dependent live together outside of the U.S. during the filing year?”
 - No: No further questions needed.

To accommodate newer or less-experienced filers, include options (including being directed to relevant IRS informational pages) on what the benefits are of claiming a dependent, and what the parameters are around it. A modal could be used for this, or a help function where the taxpayer can type in questions.

4.2.6.7 File a Return 7

Table 43. File a Return 7.

Task	Website	Page/Section	Issue	Severity	Count
Filing a Return	Member 3	Create an Account	Taxpayers faced difficulty creating an account username	Medium	3

Description of the Issue

Taxpayers faced difficulty creating an account username because they did not notice the requirements for a username. Taxpayers also became frustrated when they created a username that already existed. They then received errors saying either the username did not meet the requirements, or the name was already taken when they attempted to create a new username. One taxpayer tried several times to create a username that was not already taken and commented that they were not sure what the username requirements were.

All taxpayers were eventually able to overcome this challenge and proceed through the task; however, it did cause frustration. One taxpayer said, “I was hung up on password and username. That was horrible.”

Suggested Solutions

Show username requirements in bold and brightly colored text before, during, and after taxpayers are entering a new username. Use an icon as well as different text colors to indicate whether the entered username meets requirements or not, and whether it is available or already taken. Update this feedback in real time as the username is entered into the field.

Follow user experience best practices in designing username/password interactions.

These solutions are related to those suggested in File a Return 4.

4.2.6.8 File a Return 8

Table 44. File a Return 8.

Task	Website	Page/Section	Issue	Severity	Count
Filing a Return	Member 11	Use of Information Agreement	Taxpayers attempted to enter the scenario taxpayer’s birthday instead of the current date	Medium	4

Description of the Issue

On the use of information agreement page, taxpayers attempted to enter the fictitious scenario taxpayer’s (Christine Coleman’s) birthday after entering her name when the system was actually asking for the current date. Taxpayers became confused when the system would not let them select a year other than 2019. The field descriptor only said “date,” which caused taxpayers to be confused about what date they were supposed to enter. Taxpayers realized their error, corrected them, and continued with the task.

Suggested Solution

Change “Date” to “Current Date” or “Today’s Date” to specify the date taxpayers are supposed to enter.

4.2.6.9 File a Return 9

Table 45. File a Return 9.

Task	Website	Page/Section	Issue	Severity	Count
Filing a Return	Member 11	Enter information from Form W-2	Taxpayers incorrectly rounded Medicare tax withheld to the nearest dollar	Low	3

Description of the Issue

When entering information from the Form W-2, taxpayers incorrectly rounded the Medicare tax withheld to the nearest dollar (from \$4.62 to \$5.00). Once they finished entering information from the Form W-2, the system gave them an alert saying their Medicare withholding seemed to be too high. Taxpayers returned to the previous page and corrected the Medicare tax to the exact amount.

Suggested Solutions

In the instructions for Form W-2 information, include a statement telling taxpayers to enter the exact amounts found on the Form W-2. Put a short specific instruction at every dollar-amount entry field telling the user to enter the exact amount.

Tell the user in real-time if they have entered invalid information into any field through visually highlighting the field, using an alert icon and different colored text, and providing a small statement on the nature of the issue, e.g., “must be whole numbers.”

4.2.6.10 File a Return 10

Table 46. File a Return 10.

Task	Website	Page/Section	Issue	Severity	Count
Filing a Return	Member 3	Form W-2 Quick Entry	Taxpayers had difficulty selecting items in the Quick Entry W-2	Low	3

Description of the Issue

Taxpayers face difficulty and become frustrated selecting items (e.g., employer zip code and employer state) in the Form W-2 quick entry. Items such as employer zip code and employer state were not responsive to taxpayers' clicks.

One taxpayer said, “I find the click ability of this page not super ideal, getting the mouse on things I don’t want it to go on, I’m not able to tab through.”

Suggested Solutions

Make the targets (items to click on) larger so that they are easier to select and click on (according to Fitts’s Law [3]). Allow the user to move between fields using the tab key on the keyboard. Following usability best practices, design the form so that users are able to focus on and edit every field with a keyboard only to allow for both power users and keyboard-dependent users [4].

4.2.6.11 File a Return 11

Table 47. File a Return 11.

Task	Website	Page/Section	Issue	Severity	Count
Filing a Return	Member 10, Member 11	Overall	Taxpayers were confused by the path or flow of information presented while filing	Low	3

Description of the Issue

Taxpayers did not always understand the path or flow of information presented to them while filing. They lost track of where they were in the filing process or did not see the pages they were expecting to see.

One taxpayer said, “I feel like I click one thing and it gives me something and then I go back and click the same thing and it give me something different. I don’t understand the path sometimes.”

One taxpayer became confused about where they were while on the payments and estimates page. This taxpayer said, “I don’t know where I am right now, something with estimated payments. I don’t need to do any of these…” The taxpayer went back to payments and estimates page and said, “I’m just confused about where I am.”

Another taxpayer attempted to return to the sales tax page to reenter receipt information but was taken to the standard deduction page instead. When the interviewer asked if they were expecting to see the standard deduction page, the taxpayer said, “No, I thought I would go back to sales tax but I guess it must have autocorrected itself since it seems to have gone to a standard deduction. So, I am assuming it corrected itself. And if it doesn’t want to know, I don’t have to tell it.”

Suggested Solutions

In the side navigation menu, use symbols and color saturation to indicate where in the process the taxpayer is and the status of the section. For example, use check marks to indicate that the taxpayer has completed a section and an empty circle to show incomplete sections, and use color or color saturation differences to highlight where in the menu the taxpayer currently is.

Include a help function to aid users in finding specific sections. For example, a help function could be an area where the taxpayer types in what topic they are searching for (Form W-2, student loan interest, credits) and in turn receives a link or instructions to get to that part of the process.

Conform to usability heuristics to ensure that system status is visible, that users know where they are in the workflow at all times, and that users are able to revisit and move forward seamlessly with the system autosaving their process as they navigate forms.

4.2.6.12 File a Return 12

Table 48. File a Return 12.

Task	Website	Page/Section	Issue	Severity	Count
Filing a Return	Member 11	Overall	Taxpayer questioned their filing status selection after choosing to file as single	Low	1

Description of the Issue

One taxpayer used the Member 11 system’s filing wizard to determine that their filing status should be single. The taxpayer later entered dependent information. After, the system gave them a prompt asking if they wanted to change their filing status to head of household. This prompt made the taxpayer lose confidence in the accuracy of the filing wizard and their selection of single. The taxpayer said, “Seeing the message made me question if I used the wizard correctly, otherwise the system wouldn’t have asked the question.”

The taxpayer clicked the “Click here to see if you qualify” link provided and verified filing status should be single.

This issue is related to File a Return 2.

Suggested Solution

In the prompt alert, explain in more detail why the suggestion was made (i.e., explain what qualifies someone for head of household), and affirm that the participant does not have to change their selection. Keep the qualification walk-through option.

Yellow and red are culturally associated with mistakes and danger in online interfaces in Western culture. Change the color of the alert so it is not yellow or red, since these colors lead the user to immediately think they have made a mistake that must be corrected.

Alternately, when a taxpayer uses the filing wizard to determine their status, do not give them any prompts to make changes to their filing status unless they later make selections or enter information that contradicts what they have entered into the filing wizard. For example, if a taxpayer indicates that their marital status is single, they have a dependent, and they do not pay for more than half of household expenses, do not later give them a prompt asking if they want to file as head of household. The filing wizard already determined they do not qualify due to paying for less than half of their household expenses.

4.2.6.13 File a Return 13

Table 49. File a Return 13.

Task	Website	Page/Section	Issue	Severity	Count
Filing a Return	Member 3	Basic Info – Life Events & Child/Dependent Care	Taxpayer confused the check box for having dependent care expenses with the check box for having a dependent	Low	1

Description of the Issue

On the Basic Info–Life Events page, a taxpayer misread the children/dependents and child/dependent care expenses checkboxes and erroneously checked that they had child/dependent care expenses. This selection created challenges for the taxpayer later on the child/dependent care expenses page.

When the taxpayer arrived at the child/dependent care question later, the taxpayer read “Did you have dependent care expenses” and said, “I had dependents, and clicked yes.” The taxpayer became confused on the next child/dependent care page, realized they made a mistake, and attempted to back out of the section. However, the taxpayer had difficulty backing out and entered zero for dependent care expenses paid to get out of the section. Taxpayer returned to choose the correct answer “no.”

Suggested Solutions

Include the words “paid for” before “child/dependent care expenses” so that the taxpayer does not mistakenly conflate the two items as they skim the list. For consistency, include the words “paid for” before every expense item on the list (child/dependent care expenses, adoption expenses); it is already included for alimony expenses.

Ensure that system navigation is improved according to the suggested solutions for *File a Return 11* in order to enable the user to efficiently correct mistakes and then return to their latest stage in the filing process.

5 User Experience Questionnaire Findings

This section presents MITRE’s findings from user experience questionnaire data collected throughout the taxpayer testing sessions. The two questionnaires captured perceived usability and ease of use for discrete segments of the session (per task) as well as over the entire session experience. MITRE analyzed the questionnaire responses overall, as well as disaggregated by Free File member software offer used and by age and education level. Overall findings include:

- Overall, usability scores indicate that the Free File system is acceptably usable, with an average system rating of a “B.” Participants more often agreed with the statement that the Free File system meets their requirements than the system is easy to use.
- On average, participants found Tasks 1 and 2 to be easier than Task 3.
- Ease of use and overall usability ratings varied by Free File member software used.
- Patterns by education level were unclear; less-educated participants rated ease of use for Tasks 1 and 2 lower than more-educated participants, but rated overall usability of the system higher than more educated participants.
- Participants in the lowest age tercile (20-35 years) reported greater ease of use and satisfaction than older participants.

Participants rated their satisfaction and overall experience with the Free File process by responding to usability questionnaires. After completing *each* task, participants responded to a SEQ regarding that task. After completing *all* tasks, users answered the UMUX about their entire Free File experience during the session.

The SEQ is a single-item questionnaire that measures user perception of ease related to *specific tasks*. It is asked directly after the relevant task and is administered on a seven-point response scale, where one is “very difficult” and seven is “very easy.” SEQ scores are interpreted against an industry-accepted scale of below-average, average, and above-average SEQ response ranges (see Sections 9A.3.3 and A.4.5).

Item: “Overall, how easy or difficult was the task to complete?”

The UMUX is a four-item questionnaire that looks at an entire experience; it is not task-specific. Its four questions for measuring usability are targeted at the International Organization for Standardization (ISO) 9241 definition of usability¹². The following items are included in the UMUX questionnaire:

- “[This system’s] capabilities meet my requirements.”
- “Using [this system] is a frustrating experience.”

¹² ISO 9241-11:2018 defines usability as “the extent to which a system, product or service can be used by specified users to achieve specified goals with effectiveness, efficiency and satisfaction in a specified context of use.”

- “[This system] is easy to use.”
- “I have to spend too much time correcting things with [this system].”

There are two positive and two negative items, all administered on a seven-point response scale, where one is “strongly disagree” and seven is “strongly agree.” Free File software system was defined as “this system” in the UMUX questionnaire. The UMUX responses are converted to scores and compared to an industry-accepted acceptability and grading comparison system. See Sections A.3.3 and A.4.5 for more detail.

5.1 Summary Statistics

In this section, SEQ and UMUX scores are discussed together for each topic of comparison. In charts, SEQ and UMUX responses and scores are overlaid on response and score bands created by previous industry and academia work: below-average range, average range, and above-average SEQ range bands; and not-acceptable range, marginally acceptable range, and acceptable UMUX range bands. Section A.4.5 describes these bands in further detail. Due to the small sample size, MITRE did not conduct tests of statistical significance with these results; therefore, these results should not be interpreted as representative of the full free filer population.

5.1.1 Overall Usability

The SEQ responses collected were evaluated against the typical SEQ response bands. These bands are based on SEQ data from industry usability studies on a variety of interfaces, in which tests over 400 tasks and 10,000 users produced average scores of about 5.3 to 5.6 [5]. In this study, 5.3 to 5.6 is treated as the average response band, with ratings under 5.3 and over 5.6 treated as below- and above-average ranges, respectively (see Figure 18). Section A.4.5.1 provides more detail on the SEQ scoring.

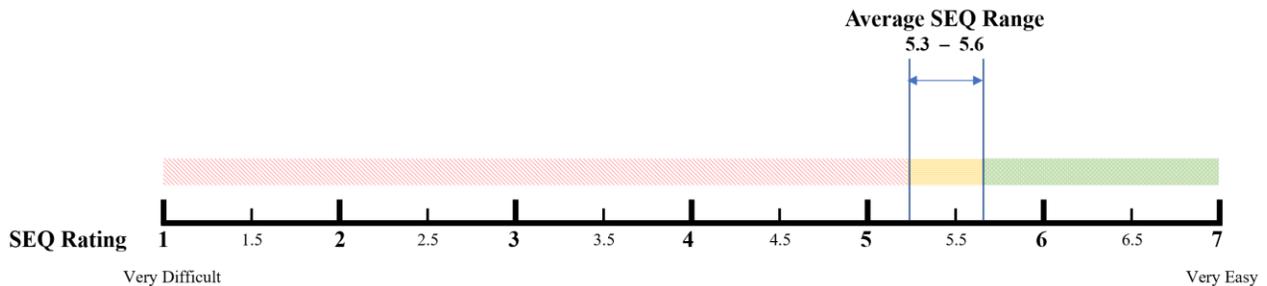


Figure 18. Free File Usability SEQ Scoring Bands.

Figure 20 shows the average SEQ scores for all participants are 5.97, 6.0, and 5.10 for Task 1, Task 2, and Task 3, respectively. Task 1 required participants to locate the IRS Free File program using an internet browser, Task 2 required participants to use information provided within a fictitious scenario to identify and select an eligible Free File program offering, and Task 3 required participants to complete a fictitious tax return using one of three Free File program offers randomly assigned by MITRE.

Considering usability throughout the entire Free File experience, MITRE found that as a whole, participants perceived Tasks 1 and 2 as acceptably “easy” (~6) and rated Task 3 lower, giving it an average rating of 5.1. Counter to expectations based on these ratings, MITRE observed more usability issues with Tasks 1 and 2 (detailed in Section 4.2) than with Task 3.

Task 3 was more complicated than the other tasks and going through the e-filing process is inherently different from web navigation and web content comprehension. For this reason, ratings for Task 3 cannot be compared meaningfully to ratings for Tasks 1 and 2. Additionally, participants voiced general negative feelings about filing taxes and commented that it was more difficult filing using information that was not their own. Section 1.3 discusses the shortcomings of using artificial tax scenario data.

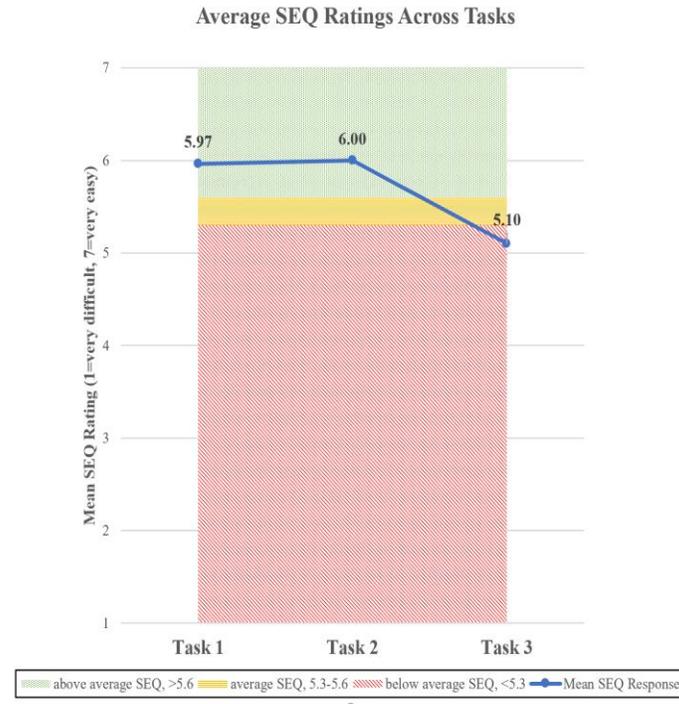


Figure 19. Average SEQ Ratings Across Tasks.

The UMUX responses collected were converted into scores with values 0-100 using Finstad’s process [6]. The processed UMUX scores are then treated like System Usability Scale (SUS) scores and rated against a scale using the descriptors in Figure 20. See Section A.4.5.2 for more detail on the UMUX scoring process.

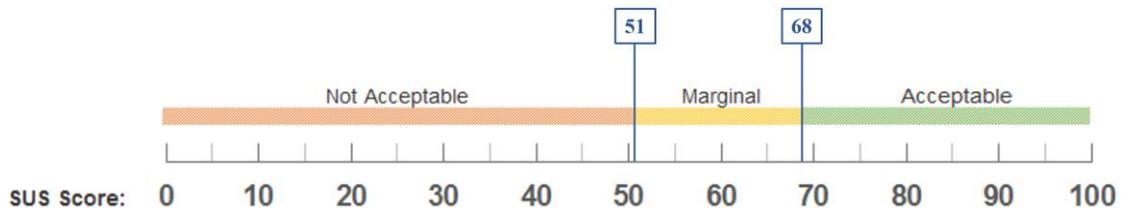


Figure 20. SUS Scale for Free File Program Usability Study.

Figure 21 shows the average UMUX scores for all participants is 77.2, meaning users rated the entire experience of all tasks combined at about a “B” grade. This is well within the acceptable usability range. Figure 22 shows the mean rating response for each question. On average, participants agreed more strongly that the system “meets my requirements” than that it was “easy to use,” suggesting that users may not expect ease when they file returns. There is also room for

improvement in making the experience less “frustrating” and cutting down on “too much time correcting mistakes.”

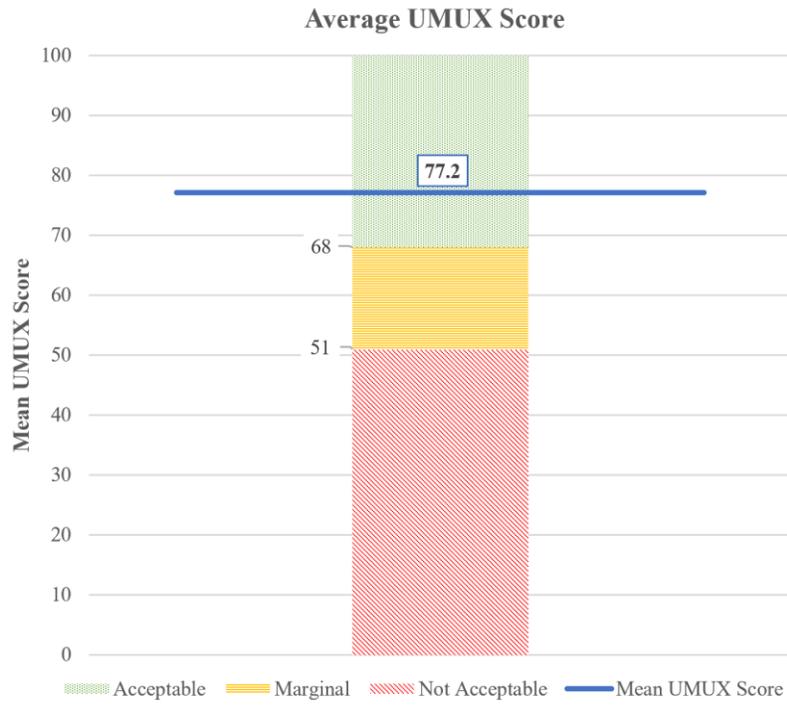


Figure 21. Average UMUX Score.

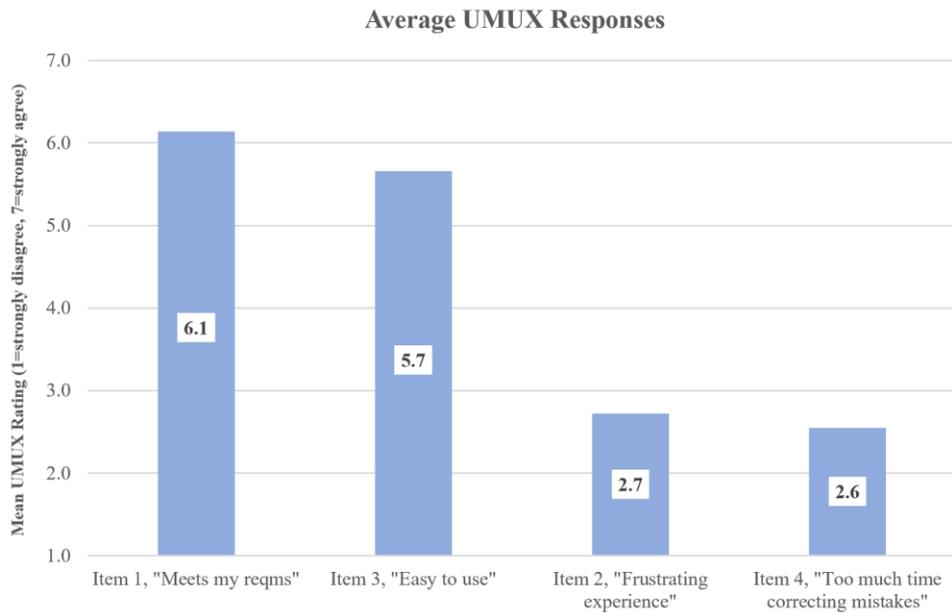


Figure 22. Average UMUX Responses.

Eight of the 29 participants were uncertain if they had used the Free File program in one of the prior two years, or a free commercial service (See Section A.2.4). This implies unfamiliarity with the Free File Program prior to arriving to sessions. As they learned more about Free File’s free options through completing tasks, they seemed surprised and pleased about many aspects of the opportunities available to them (though they also expressed disappointment that they had not known about the opportunities earlier). Several remarked that they would use what they learned in the session when they filed next. These positive impressions may have played a part in positive responses about the entire Free File experience.

5.1.2 Usability by Vendor Offering

Figure 23 provides the average participant SEQ rating for Task 3, which required participants to complete a tax return using a Free File Offering assigned by MITRE. Member 10 received a relatively high average SEQ rating of 5.8. Member 3 (5.2) and Member 11 (4.3) were rated below average for ease of use.

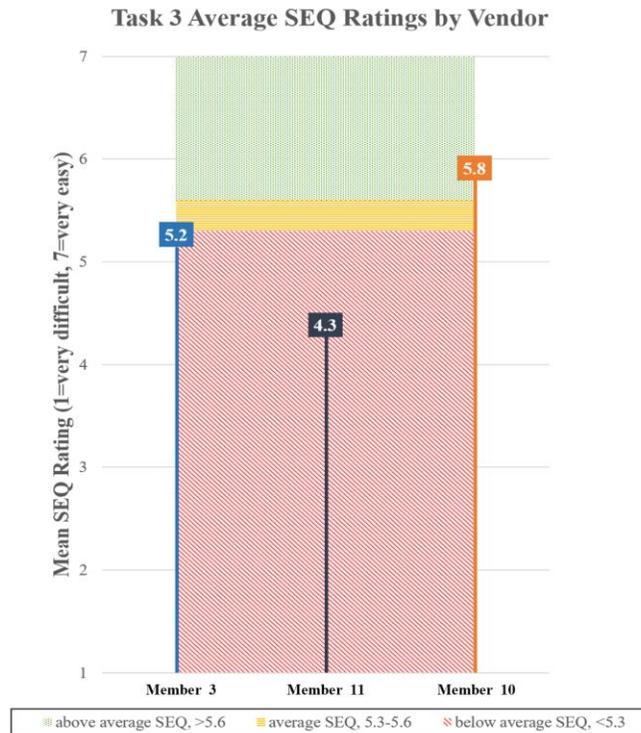


Figure 23. Task 3 Average SEQ Ratings by Vendor.

The UMUX responses provided in Figure 24 show a similar pattern. Member 10 and Member 3 received “acceptable” scores of 90.3 and 74.2, respectively. Member 11 received a “marginal” score of 67.6. The shared pattern suggests that the usability of the Free File software offers made a strong enough impression to impact the overall Free File taxpayer experience.

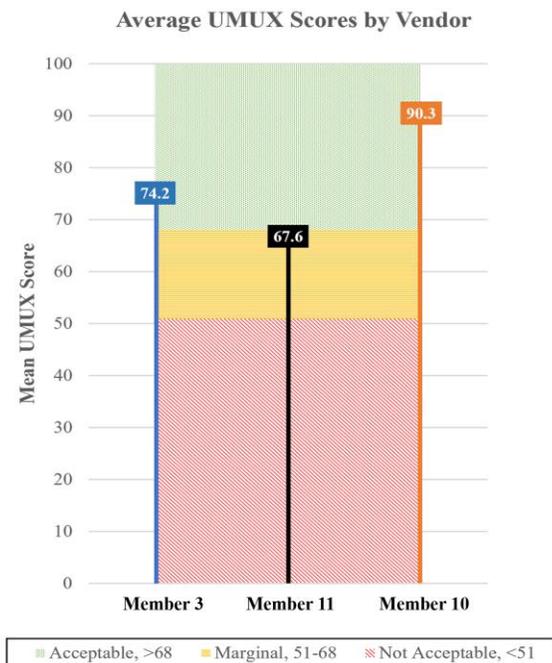


Figure 24. Average UMUX Scores by Vendor.

Commonly observed usability issues were not knowing where to enter student loan information, difficulty picking filing status, and confusion about flow of use (e.g., navigating to review information or correct mistakes). These issues occurred with Member 3 and Member 11, not with Member 10, and may have caused the lower overall scores associated with these systems. Other common issues of where to enter health insurance information, understanding the “quick file” option, and addressing unclear error messages during Form W-2 entry were only with Member 11.

Fourteen participants reported having used Member 10 before while three participants said they had previously used Member 3, and only one reported having used Member 11 in the past (Section 6.3). Familiarity can contribute to the experience of usability, so software provider familiarity may have had an effect in this study.

The IRS Free File program is not used in a vacuum; relevant software, as well as contexts of prior technology use and other aspects of the user’s life, may impact the user experience and public opinion of the program.

5.1.3 Usability Comparisons by Participant Education

Table 50 shows the size of each group. The “lower than bachelor’s” group contains participants who had earned a high school diploma, GED, or equivalent, and participants who earned an associate’s degree. The “higher than bachelor’s” group includes participants who had earned a master’s degree and those with a doctorate degree.

Table 50. Participant Education Groups Sample Sizes.

	Lower than Bachelor's	Bachelor's Degree	Higher than Bachelor's
Number of participants	6	13	10

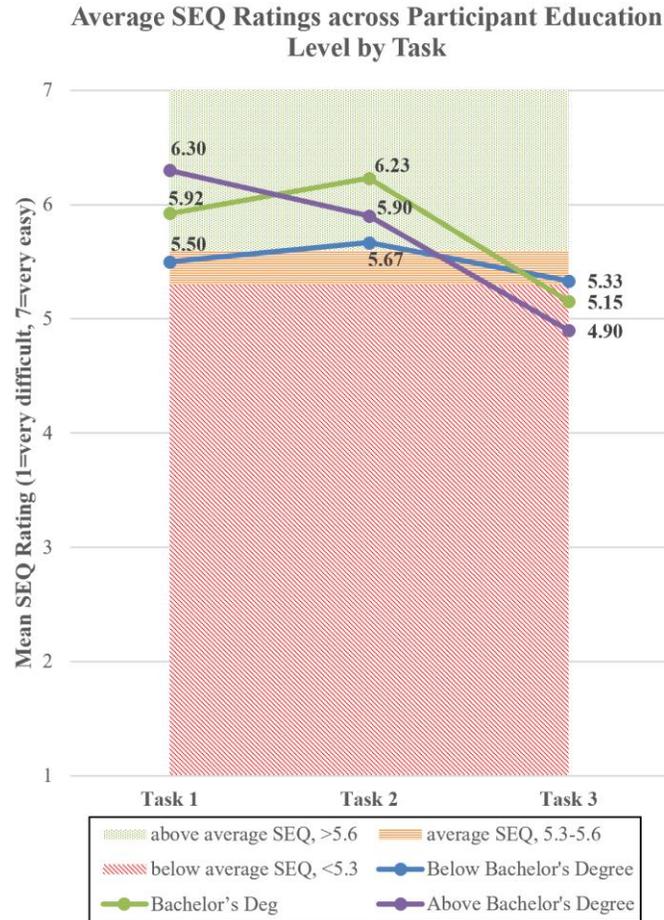


Figure 25. Average SEQ Ratings Across Participant Education Level by Task.

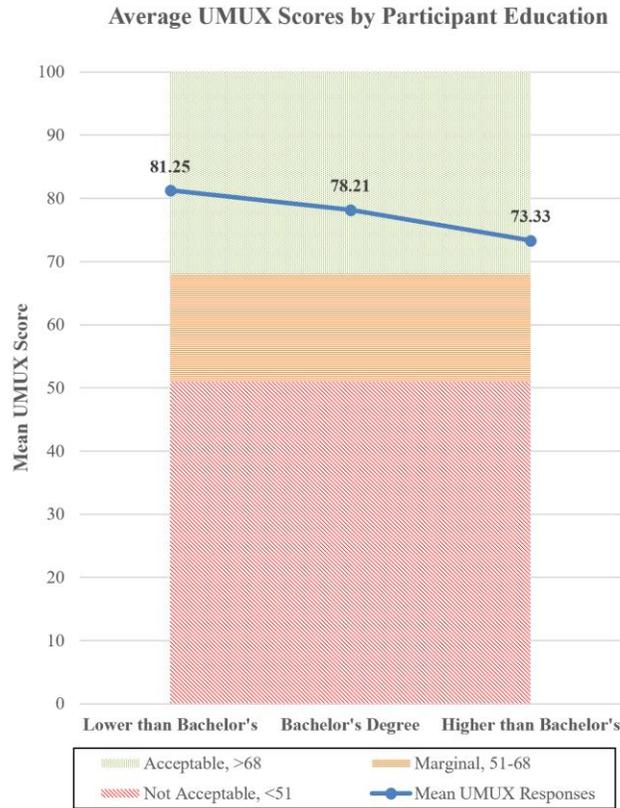


Figure 26. Average UMUX Scores by Participant Education Level.

Participants in all education levels thought Task 3 was more difficult than Tasks 1 and 2, as shown in Figure 25. Users with below a bachelor’s degree reported lower ease on Tasks 1 and 2 than the other participant groups, and were the only group to rate Task 1 ease of use in the “average” response band rather than the “above average” band. Task 3 ease of use diverged much more sharply from Task 1 and 2 ease for participants in the bachelor’s and above bachelor’s group than it did for users in the below bachelor’s group. For the IRS web pages (e.g., Tasks 1 and 2, program discovery and Free File software offer selection), these patterns suggest an opportunity to focus usability resources on improving the experiences of taxpayers with education below a bachelor’s degree. This group may have unique characteristics that affect their internet and technology usage and impact their access to the Free File program.

However, UMUX scores (overall experience) presented in Figure 26 landed in the acceptable range for all education groups. The below bachelor’s group actually rated their overall experience highest at an “A”; all other groups gave a “B.” MITRE cannot explain the disparity between SEQ and UMUX results, but results could have been affected by differently sized groups (six below bachelor’s, 13 bachelor’s, 10 above bachelor’s). There could have been an impact from the difference between rating to reflect on a specific task versus thinking back over a whole experience. Lastly, different participant expectations going in about the ease or difficulty of filing taxes and tax-related activities could have had an effect, i.e., a person who expects taxes to be painful and difficult may rate a middling user experience higher than would a person who expects taxes to be easy.

More research is needed to explore these findings, including further usability testing and iterative design processes to improve usability. Given the differences between software provider portion SEQ responses and IRS portion SEQ responses, the IRS should encourage Free File partners to dedicate resources to improving the usability of their Free File offerings.

5.1.4 Usability Comparisons by Participant Age

Participants were grouped into age terciles. Table 51 shows the size of each sample.

Table 51. Participant Age Groups Sample Sizes, by Age Tercile.

	20-35 years	36-51 years	52-85 years
Number of participants	10	10	9

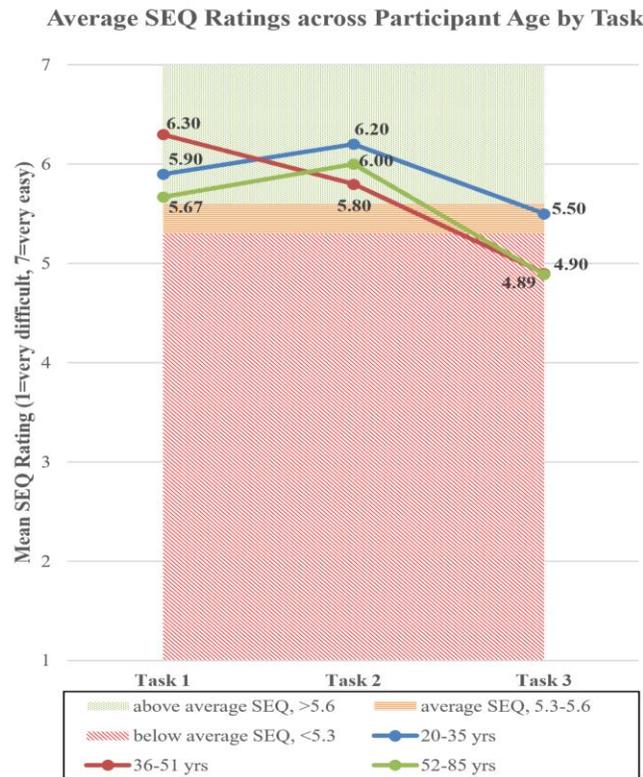


Figure 27. Average SEQ Ratings Across Participant Age by Task.

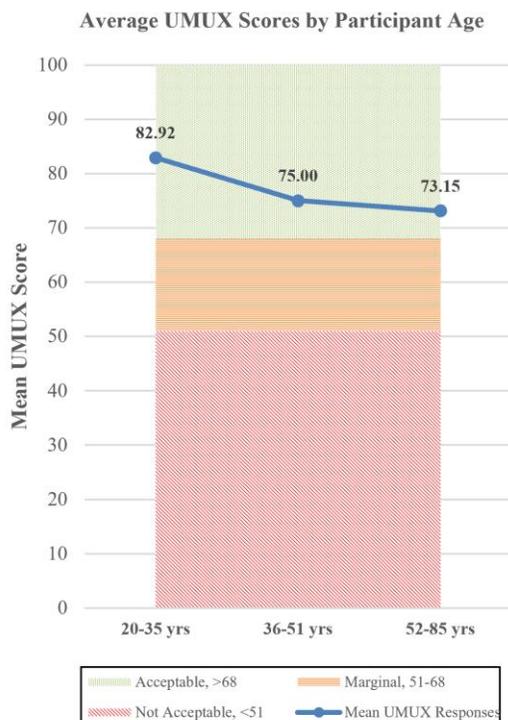


Figure 28. Average UMUX Scores by Participant Age.

All age groups reported above-average ease of use for Tasks 1 and 2, and lower ease for Task 3 (see Figure 27). The youngest group rated Task 3 ease within the “average” band, while all other participants thoughts Task 3 had “below average” ease. Figure 28 shows that the youngest user group also rated their overall experience the highest, giving it an “A,” while the other groups deemed overall experience a “B.” No clear age-usability trend emerges, but there is some evidence that the youngest group found the system more usable than other participants did. These findings suggest focusing further usability efforts on the middle and older age groups.

MITRE recommends performing further research to explore these findings, including usability testing and iterative design processes. Again, considering the usability differences between the Free File software offer task (Task 3) and Tasks 1 and 2, MITRE suggests that Free File partners are encouraged to improve the usability of their Free File offerings.

6 Debriefing Findings

This section presents the analysis of taxpayer responses to open-ended questions following the completion of testing. Some of the key findings from this section include:

- Nearly one-third of participants stated that they had knowledge of Free File for at least the last year.
- The main thing that taxpayers knew about the Free File was that it was free for taxpayers, although four participants conflated FFA members' commercial free filing services with the IRS Free File Program.
- Most taxpayers said they would turn to internal help options provided within the Free File software or would conduct an online search for help.

After completing all their assigned tasks, participants completed a user experience questionnaire to gather impressions on their experience using the IRS Free File Program.

Additionally, participants answered a set of open-ended debriefing questions. The MITRE team conducted content analysis to identify common themes across participants' responses to six main questions:

- What, if anything, did you know about the Free File Program prior to today's session?
- Have you used the Free File Program previously?
- If you were completing the online tax return by yourself and couldn't figure something out, what would you normally do?
- Is there anything that could be done to make the process of filling out the form easier?
- Is there anything that could be done to make using the IRS Free File program easier?
- If you were a member of the military, what would you think about this site?

6.1 Overall Experience

While seven participants stated that they found the overall Free File program easy to figure out, four participants did not find it easy to use, with two participants specifically stating that the rules for filling out certain elements of the forms were unclear and hard to follow. Specific problems that participants mentioned included the Free File software being different from previous software, having to go back and forth between documentation and the Free File software to enter data, and not being able to find the link on the website. Two participants did feel that the layout was well done.

Table 52. Overall Debriefing Comments.

Overall Debriefing Comments	# Mentions
Easy to Figure Out	7
Good Layout	2
Not Easy to Figure Out	2

Rules Were Unclear	2
Different From Previous Software	2
Couldn't Find Link	1

6.2 Previous Knowledge of IRS Free File Program

Almost a third of the participants (eight of twenty-nine) stated they had knowledge of the IRS Free File program for more than the last year. Four participants stated that they had no previous knowledge of the IRS Free File program prior to last year. The main thing that people knew about the program was that it was free for taxpayers, although four participants also conflated larger company free filing services with the IRS Free File program.

Participants had heard about the program primarily from three sources: advertisements (five participants), heard from friend or family members (five participants), and online searches (five participants) such as Googling free tax filing or seeing the program on the IRS website itself.

Quotes: Previous knowledge of Free File Program...

“I looked online probably to find where you could print out the forms and that’s how I saw a notice about Free File.”

“I have used it before. I knew it was a portal to other business that do tax preparation where you can file for free. I know TaxAct and H&R Block were a part of it.”

“I didn’t know that you could do that through the IRS Free File.”

Figure 29. Previous Knowledge Quotes About Free File Program.

Table 53. Previous Knowledge of Free File Program.

What, if anything, did you know about the Free File Program prior to today’s session?	# Mentions
Known about the program for a while	8
Didn’t know about the program before last year	5
Where participants learned about Free File program:	
Looked online for free filing	5
Told about program by someone else	5
Heard or saw advertisements about program	5
IRS website	2
Marketplace podcast	1
Newspaper	1
Email	1
VITA Program	1

6.3 Previous Experience Using the IRS Free File Program

Almost half (14) of the participants felt the Free File program was easy or fairly easy to use, although only four of those participants stated that they had used the program prior to the usability testing. Two participants also stated that they had used third-party software prior to the usability testing and found those software packages easy to use. Four participants also specifically commented that they found the experience within the usability testing environment easier than when they had done their own taxes previously (two used the IRS Free File program previously, and two used third-party software previously).

Five participants also commented that third-party software and the IRS Free File program experience were all similar to one another. Participants also mentioned that there were some ways in which the third-party software was easier to use than the Free File software, especially because the third-party software carries over taxpayer information from year to year (two mentions) and that it was easier to use (one mention). However, two participants mentioned being charged by third-party software when they were actually eligible for free tax filing. One other difficulty specifically mentioned by a participant was that the rules for eligibility, and potentially one’s own tax situation, change from year to year, making it difficult to use the IRS program since you cannot maintain the same filing approach every year.

Table 54. Experience Using Free File Previously.

Experience Using Free File Previously	# Mentions
Fairly easy	8
Very easy	6
Used Free File before	8
Used third-party software before	5
All software is similar	5
Advantages of third-party software	
Carries over information from prior years	2
Eligibility for Free File changes	1
Easier to use	1

Participants were also specifically asked which third-party software they had used in the past. The majority of participants had used Member 10 or Member 2 for Free File in the past (14 and 9 participants).

Table 55. Software Used Previously by Participants.

Software Used Previously by Participants	# Mentions
Member 10	14
Member 2	9
Member 8	3
Member 3	3
Member 9	1

Member 1	1
Member 6	1
Member 11	1
Don't Remember	1
Other	1

6.4 Where Taxpayers Would Go for Help

Most participants stated that if they encountered a situation where they could not figure out what to enter on the tax form, they would look in the internal help files for the Free File software, with a number of participants specifically mentioning help buttons within the software or an FAQ or similar file (see Table 56). Also mentioned (often by the same participants who said they would use the help files) was doing a Google or other online search for the answer to the question. Six participants specifically mentioned going to the IRS website for answers, and three participants said they would call the IRS for help (although one participant also specifically stated that he would never call the IRS as they have not been able to answer his questions in the past).

Participants also mentioned that they would reach out to a friend or family member for help (five participants) or would go to a professional tax preparer to complete their taxes if they could not figure it out for themselves (eight participants).

Table 56. Mentions of Where to Go for Help.

Where to Go for Help with Tax Questions	# Mentions
Search for answers on their own:	
Internal help files	13
Online search	13
IRS website	6
Reach out to others for help:	
Professional tax preparer	8
Friends or family	5
Call IRS	3
Contact software	2

6.5 Taxpayer Reflections on Process to Complete Return

Five participants stated that the entire process of completing the Free File return was easy and there was nothing they could think to improve the process, while two participants simply stated they had no thoughts about improving the process. Of the remaining participants five participants felt the biggest issue was that there were too many options to choose from on the IRS website, and four participants felt that the lookup tool could make the free options easier to spot or placed in a more prominent location on the website.

Many participants (seven total) talked about improving the overall layout and design of the Free File tool, especially the lookup tool. Three participants stated they would like to make it easier to see the form by improving font and readability and potentially font size. Three participants wanted to have a better understanding of how the software package was progressing through their return, ideally with a map of some sort labeled at the beginning of the process. Finally, two participants discussed general improvements in graphic design, such as higher contrast colors and identifying what specific areas in the lookup tool are for.

Two participants also discussed the need for the third-party tools to make it clear that taxpayers are eligible to file for free (one participant stated he was previously charged even though he was eligible for free filing), and to make it clear through IRS communications that free filing only goes through the IRS website to avoid being charged. One participant suggested that Free File should be available to all taxpayers regardless of income.

When asked about how to make the overall process easier, participants stated that they would like if the IRS website could suggest a Free File software offer for them rather than having to choose, that the IRS website would use more plain language, that they would like to be able to import their data into the Free File tool rather than having to manually enter it, and that they would like to have more training on tax preparation.

Table 57. Improve Filing Process Through Free File.

How to Improve the Process of Filing through Free File	# Mentions
Issues with the process:	
None	5
Too many options to choose from	5
Make free software easier to identify	4
Clear eligibility	3
Free File only goes through IRS	2
Suggested changes:	
Better layout	7
Improve font and readability	3
Improve mapping of software	3
Improve graphic design	2
Make free file available to everyone	1
Improve process:	
Suggest a vendor	1
Plain language	1
Import data	1
More training on tax preparation	1

6.6 Taxpayer Reflections on Support from the IRS

As with improving the process, participants primarily discussed improving the graphic design of the Free File site and lookup tool (three participants). Participants also suggested advertising the program better, recommending a Free File software offer to taxpayers, and having clearer language regarding eligibility and the process. Specific to the process of navigating the website, one participant repeated that they were charged by third-party providers when they were eligible for free filing, wanted to be able to exit a particular software provider without having to save their information or to register without having to provide a personal email.

Table 58. How the IRS Can Help Taxpayers With Free File.

What Can the IRS Do To Help?	# Mentions
Graphic design	3
Advertise	3
Recommend a vendor	2
Clear description of eligibility	2
Clear explanations of terms	2
Exit without saving	1
Register without an email	1
Charged even though eligible	1

6.7 Taxpayer Reflections on Entering Military Pay

Although no participants in the study had received military pay, each participant was asked what they thought they would do if they were a member of the military. One participant stated flatly that they had never served and could not answer the question. Thirteen participants stated that they would simply check the box on the lookup tool for receiving military pay and five participants stated they would use the specific military link on the lookup tool.

Six participants stated they would look for military options within the lookup tool. Three participants stated they didn't see anything specific to the military in the lookup tool, and two believed that the military link should be made clearer on the website.

Five participants believed that military members would have access to information specific to their filing responsibilities. Three participants stated they would use military specific resources to learn about how to use Free File, while two participants simply stated that military members would know how to use the Free File software.

Table 59. Actions With Receiving Military Pay.

What would you do if you received military pay?	# Mentions
Use lookup tool specific options:	
Check box for military pay	13
Use military link on website	6
Look for possible options within lookup tool:	

Look for military options	6
Didn't see military option	3
Make military link more clear	2

Specific military knowledge

Use military-specific resources	3
Military members would know how to use Free File	2

7 Taxpayer Pathways and Metrics

This section gives a summary of MITRE’s findings from Taxpayer Pathway data collected in Tasks 1 and 2 of the taxpayer testing sessions. A *user pathway* is a series of steps the user performs to complete a task during an interaction with a system of interest. Participant pathways show how many participants succeeded or failed tasks, what routes led them to frustration, inefficiency, or errors, and what user decisions triggered various pathways. This section also describes the Free File software offers that taxpayers selected and their strategies for selecting an offer across all tasks.

Some key findings from this section include:

- A majority of the search terms test participants used to find the Free File landing page included the term “IRS,” and nearly half used search terms that included “IRS” and “free.” However, none of the search terms used by the general population to find the Free File landing page included the term “IRS.”
- Twenty-four taxpayers found the Free File landing page as a part of Task 1; 14 taking an optimal path and 10 taking a sub-optimal path.
- The only error taxpayers committed in the Lookup Tool was incorrectly selecting “yes” to EITC question.
- Across all tasks, the most common strategy taxpayers used to select a Free File Software Offer was choosing based on past experience with a software provider, followed by familiarity with the product name or URL.

This section discusses the user flows, or pathways, participants followed during Tasks 1 and 2, for example, the series of web pages the user visited and actions they took at each step. Participant pathways were examined and grouped into similar routes to identify common pathways and unveil points at which users left optimal paths. Each path is categorized as one of the following:

- **Acceptable:** Any route that ultimately allows the user to complete the task
- **Unacceptable:** Any route that does not ultimately allow the user to complete the task

Task completion is defined as:

- **Task 1:** Locating the Free File landing page. The task started from the computer desktop with no browsers or windows open.
- **Task 2:** Selecting a Free File software offering. The task started from the Free File landing page.

Acceptable paths are further divided into:

- **Acceptable-Optimal:** Acceptable paths that do not require the user to backtrack, do not cause the user frustration (frustration is measured through user comments), and in which the user does not commit errors
- **Acceptable-Suboptimal:** Acceptable paths in which users backtrack, voice frustration, or commit errors

7.1 Task 1: Free File Landing Page Findability Testing

In this section, MITRE reports on the user flows that taxpayers followed for the first task in the usability test, finding Free File and navigating the Free File landing page. The interviewers allowed taxpayers to move forward with the task up until the point of selecting a Free File software offer for themselves in Task 1. User flows fell into the following seven general pathways, displayed in Table 60.

Table 60. Taxpayer Pathway Types from User Flow Analysis (Task 1).

Path	Path Result
Pathways Including Visiting IRS.gov	
Path 0: Navigate to IRS.gov; never arrive at Free File landing page	Unacceptable
Path 1: Navigate to a page on IRS.gov that was not the Free File landing page; then navigate IRS.gov site to arrive at the Free File landing page	Acceptable - Optimal Acceptable - Suboptimal
Path 1a: Internet search that led directly to IRS.gov Free File landing page	Acceptable - Optimal
Path 1b: Internet search to land directly on Free File landing page; then taxpayer got distracted or lost on other areas of IRS.gov	Acceptable - Suboptimal
Pathways Not Including Visiting IRS.gov	
Path 2: Select commercial option(s) from search results and end there	Unacceptable
Path 2a: Select commercial option(s) from search results, back up, and select IRS option from search results	Unacceptable
Path 3: Navigate directly to software provider website (no search first)	Unacceptable

The results of paths 0, 2, and 3 did not lead to task completion. Paths 1 and 1a could have been acceptable-optimal and paths 1, 1b, and 2a could have been acceptable-suboptimal, depending on the taxpayers' experience following the path. The difference between a path falling in acceptable-optimal or acceptable-suboptimal was due to the participant expressing frustration or confusion with the experience. Two participants first followed unacceptable paths and then acceptable/not optimal paths after interviewer prompting. These participants are thus recorded as following unacceptable routes in the path counts. Figure 30, Figure 31, and Figure 32 provide graphical representation of the pathways with comments from participants' experience completing the task.

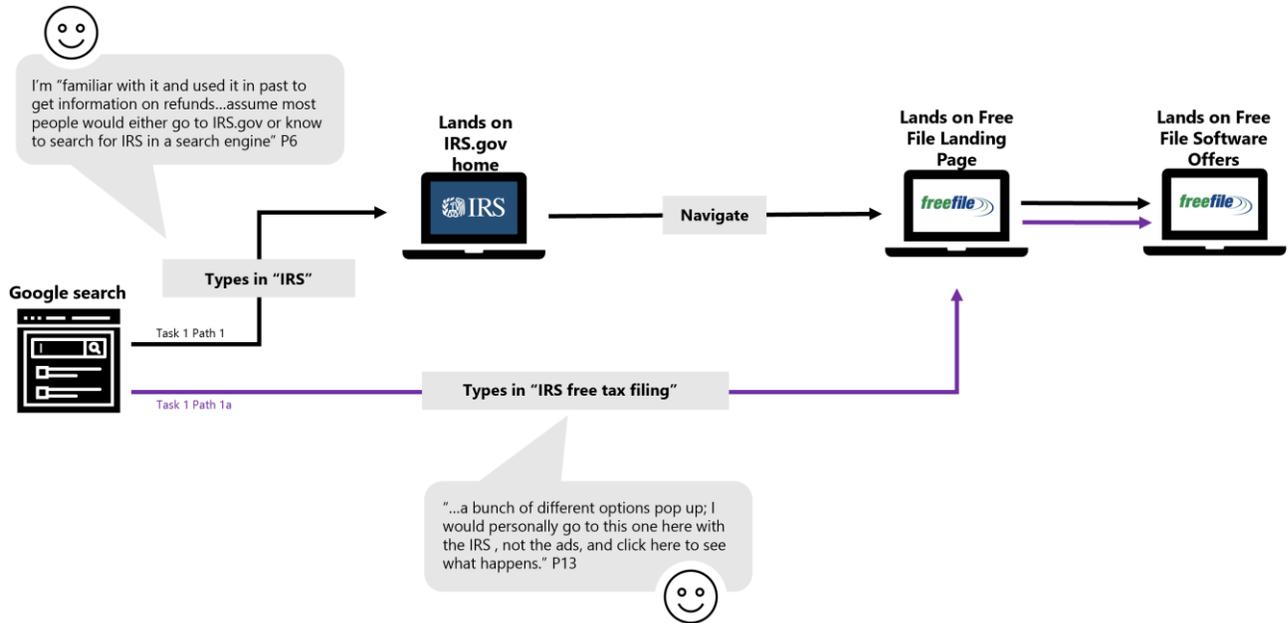


Figure 30. Task 1 Acceptable-Optimal Pathways.

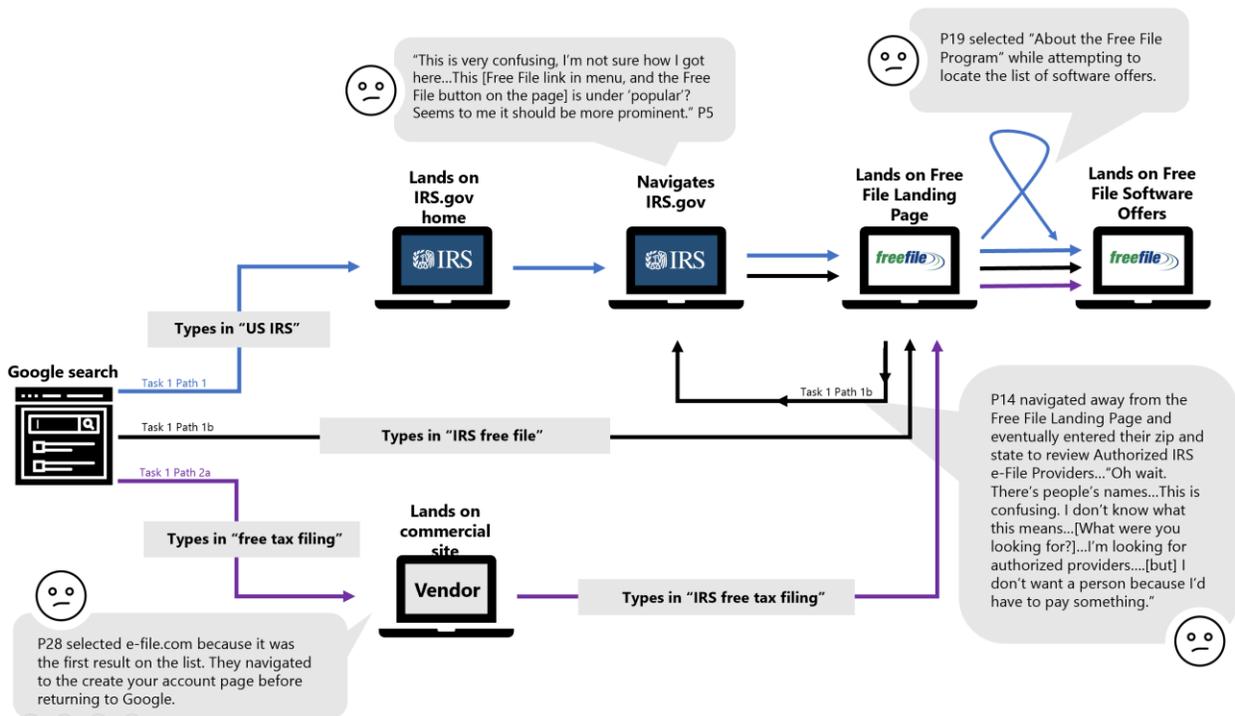


Figure 31. Task 1 Acceptable-Suboptimal Pathways.

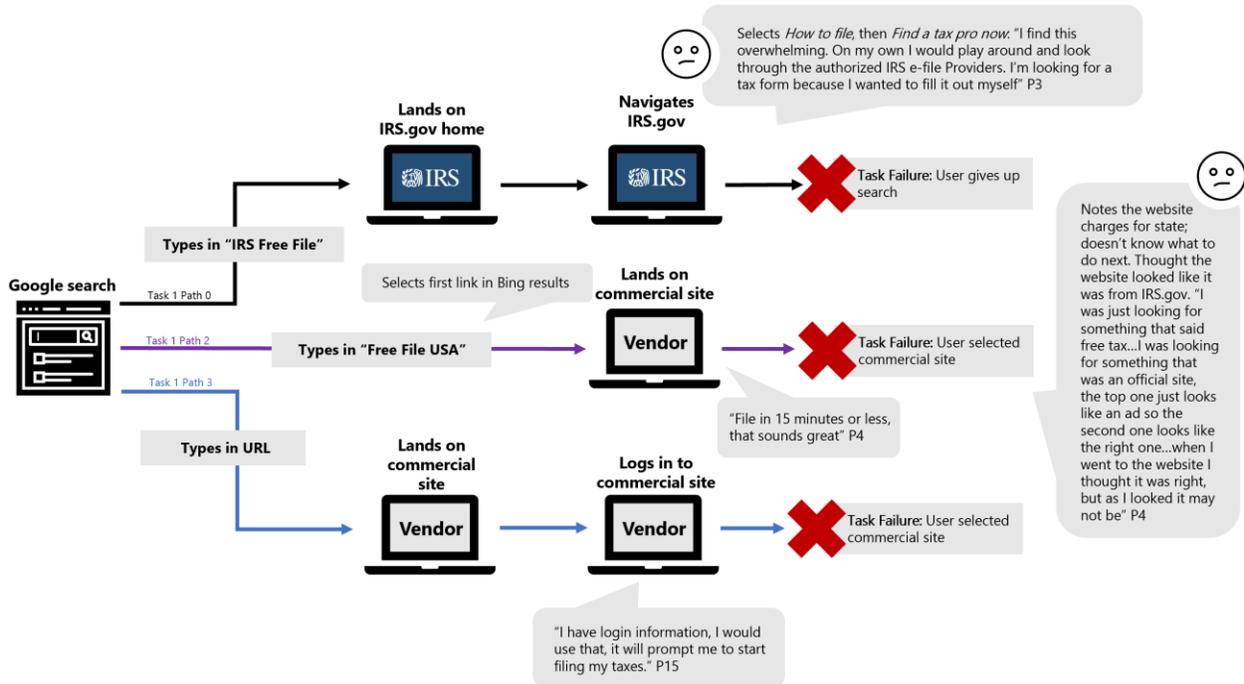


Figure 32. Task 1 Unacceptable Pathways.

Table 61. Task 1 Path Rating Scale.

	Acceptable - Optimal		Acceptable - Suboptimal			Unacceptable		
	Path 1	Path 1a	Path 1	Path 1b	Path 2a	Path 1	Path 2	Path 3
Number of participants	3	11	3	2	5	1	2	2
	14		10			5		

Twenty-four of 29 (82.8 percent) participants were able to find the Free File landing page. Of these, slightly more followed optimal routes (14 optimal, 10 suboptimal). Suboptimal routes typically involved participants getting lost within the IRS website, such as not being to find the link to the Free File landing page from the home page (see usability issue in 4.2.3.1). Future usability efforts should focus on increasing usability specifically at the points where users fell away from the optimal path, explored further in Section 4.2 and in the taxpayer journey.

An equal number of participants experienced optimal and suboptimal routes when starting from IRS.gov, suggesting an opportunity to change the IRS public web page design to better support navigation.

In general, improving the design of commercial tax software providers’ pages is outside of the scope of this independent assessment. However, participants shared information about the key things they assessed when visiting Free File software providers websites. This information can help the IRS and Free File software providers understand the taxpayer experience when evaluating their tax preparation options. When participants visited commercial pages, they said they were looking for things like:

- Fees

- *To avoid:* Mention of any fees or charges
- *To seek:* The word “free”
- Security
 - *To avoid:* “.com” ending to the URL
 - *To seek:* Visual design that “looked legitimate,” “not like a scam,” and/or “seemed reliable”
 - *To seek:* “.gov” ending to the URL
 - *To seek:* Something that looked “like it is officially government” and/or “part of the IRS”
 - *To seek:* Something that looked or sounded familiar
- Relevance
 - *To seek:* Eligibility requirements

7.1.1 Search Terms for Locating Free File

MITRE captured the search engine query terms that taxpayers used to seek where they would file their federal return for free.

Almost all participants began with a search engine query, suggesting that the IRS should consider search engine queries as a starting point to many taxpayer-IRS interactions. This means the IRS should either be prepared for users to enter IRS page navigation flows from unexpected points or optimize for search engine queries and results in order to guide taxpayers toward specific starting points.

One limitation of this study is that participants may have been primed to look specifically for IRS Free File when they would not have done so otherwise. The recruitment materials, including the letters sent by the IRS and MITRE and the recruitment website, mentioned the Free File program by name, possibly leaving participants with an initial impression that this language choice was appropriate during their participation in the study. Additionally, the consent form and interview protocol used the term “IRS Free File program” in the introduction when the interviewer explained the purpose of the research. Once the usability part of the task began, the protocol did not mention IRS Free File by name, and instead asked participants to “imagine they learned that the IRS offered a program to file their federal tax return for free” (see 9Appendix C for recruitment and interview materials). Given the repeated use of “IRS Free File” and “IRS Free File online software program,” MITRE may have given participants familiarity with these terms that they would not have had otherwise.

The search engine analysis using Google Analytics reported in the Free File Program Assessment Final Report provides a full picture of taxpayer behavior that leads to the Free File landing page. In this section, MITRE reports the search terms used by the usability test participants and reflects on how the format of the interview may have introduced bias by priming participants to think about IRS Free File in those terms. Figure 33, Figure 34, and Figure 35 provide graphical representation of the pathways with comments from participants’ experience completing the task.

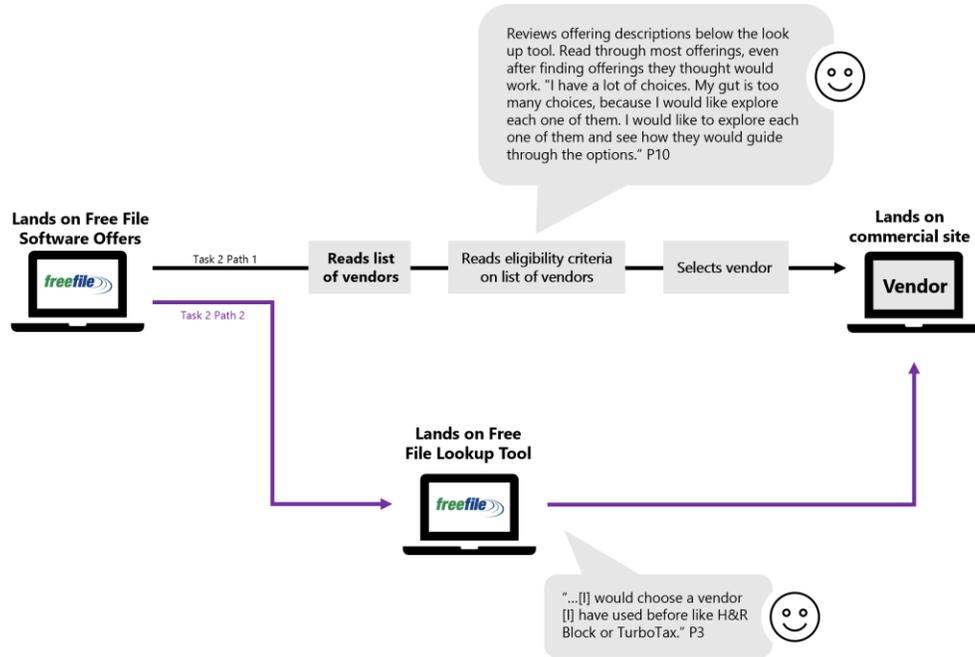


Figure 33. Task 2 Acceptable-Optimal Pathways.

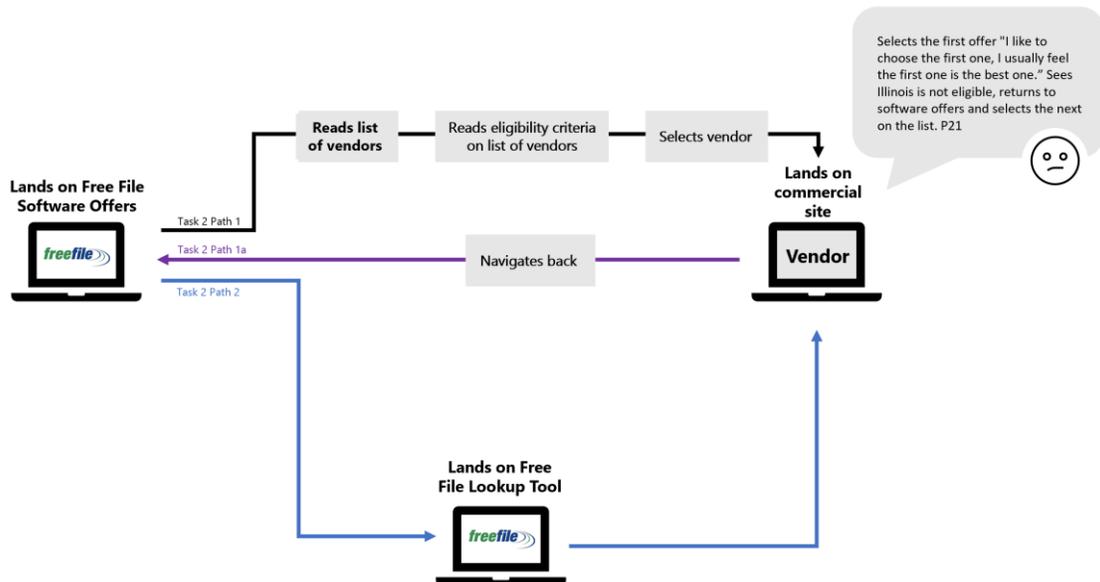


Figure 34. Task 2 Acceptable-Suboptimal Pathways.

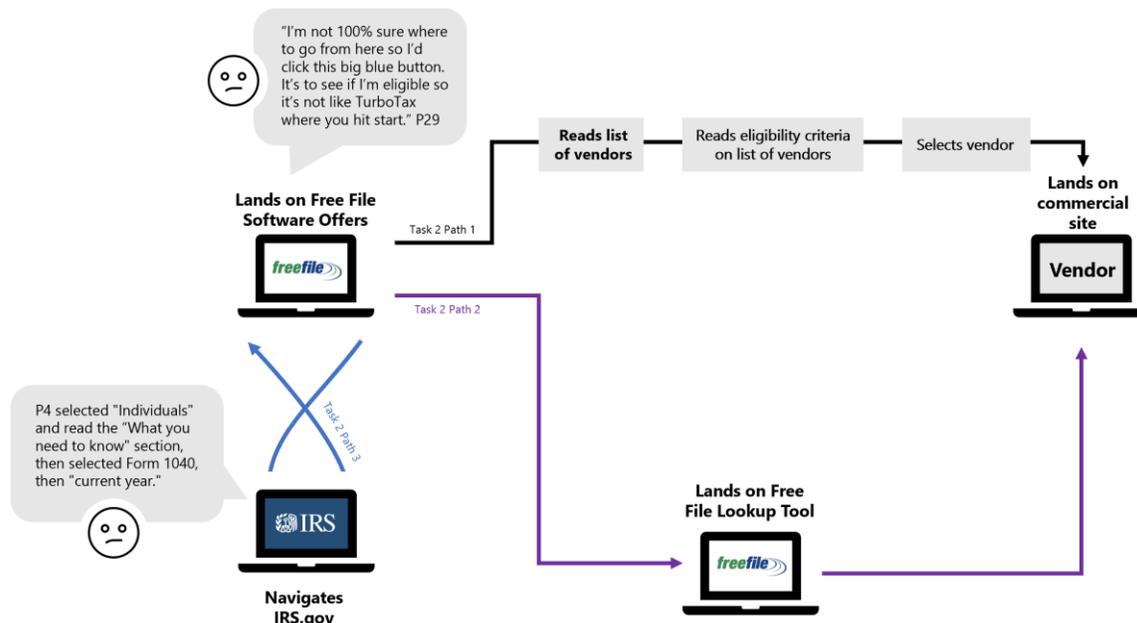


Figure 35. Task 2 Unacceptable Pathways.

Table 62 shows the top 10 search terms that drove organic web traffic to the Free File landing page on IRS.gov, according to the separate web analytics research conducted by MITRE (see the Free File Program Assessment Final Report for details). Table 63 displays all unique search terms used by participants in the usability study for Task 1 (finding where to file their federal return for free), with the number of participants that used those exact keywords and the result of using those keywords in terms of success (whether they found the Free File landing page) and whether their path to the Free File landing page was optimal or suboptimal. Table 63 does **not** include URLs that participants directly typed into the address bar.¹³

A key characteristic of all 10 of the search terms used by the general population to arrive at the Free File landing page reported in Table 62 is that they do not contain the term “IRS.” In contrast, MITRE found that the majority of search terms used by participants in the usability study included the term “IRS” (Table 63). This could be attributed to the repeated exposure to the IRS’s affiliation with the study. Seven unique search terms used by 14 participants including both the term “IRS” and “free,” and the most commonly used search term among MITRE participants was “IRS free file” (n=6). Notably, the search terms that combined these keywords appear to have driven the most successful internet searching behavior in MITRE’s usability study. In comparison, the search terms that are most commonly used in the general population, which do not contain reference to the IRS (e.g. “free tax filing”), led to the selection of commercial options among MITRE’s usability participants.

These results suggest that exposing taxpayers to the singular concept of “IRS Free File” may help taxpayers more successfully locate Free File services in online searches and avoid

¹³ One taxpayer typed “irs.com” into the address bar and did not realize her own mistake, landing on a commercial vendor site. Another went straight to turbotax.intuit.com from the address bar. Two taxpayers navigated directly to IRS.gov from the address bar and were successful in finding the Free File landing page, though they followed suboptimal paths.

commercial options. These results also suggest that taxpayers in the MITRE usability study were likely biased by their exposure to the combination of “IRS” and “Free File” or “free tax filing” in the course of the study, and this may have affected their behavior in the interview. Thus, taxpayer online searching behavior in the usability study may not be generalizable to the broader taxpayer population.

Table 62. Top 10 Search Terms Driving Internet Traffic to Free file Landing Page (From Web Analytics Analysis).

Term	Rank
free tax filing	1
free online tax filing	2
free taxes online	3
free file	4
free e file	5
free federal tax filing	6
free income tax filing	7
free tax return	8
file federal taxes	9
free tax return filing	10

Table 63. Search Terms Used by MITRE Study Participants in Task 1.

Term	Count	Result
Search terms including "IRS" but not "Free"		
US IRS	1	Successful (suboptimal path)
IRS	1	Successful (suboptimal path)
IRS.gov	1	Successful (suboptimal path)
IRS file online	1	Successful (suboptimal path)
IRS 1040 form	1	Successful (suboptimal path)
Search terms including "IRS" and "Free"		
		3 successful (optimal path) 2 successful (suboptimal path) 1 not successful; ended on IRS Fillable Forms
IRS free file	6	
IRS free filing program	1	Successful (optimal path)
free file software IRS	1	Successful (optimal path)
IRS free tax filing	3	Successful (optimal path)
file taxes free irs	1	Successful (optimal path)
free tax filing federal irs 1040	1	Successful (optimal path)
free file software IRS	1	Successful (optimal path)
Search terms not including "IRS"		
		1 successful (optimal path) 1 successful (suboptimal path)
file taxes for free	2	
free file USA	1	Not successful; ended on freetaxusa.com
free file	1	Not successful; ended on e-file.com
free tax filing	1	Not successful; ended on freetaxusa.com

7.2 Task 2: Lookup Tool Testing

MITRE captured the user flows that participants exhibited when they first encountered the Free File landing page and were asked to select a Free File software offer. User routes followed four general pathways, shown in Table 64.

Table 64. Taxpayer Pathways Followed to Select a Vendor (Task 2).

Path	Path Result(s)
Path 1. Uses Free File offerings descriptions to find a Free File software offer (does not use lookup tool)	Acceptable - Optimal Acceptable - Suboptimal Unacceptable
Path 1a. Uses Free File offerings descriptions to find a Free File software offer (does not use lookup tool); backtracks to choose a different Free File software offer after selecting initial Free File software offer and reviewing the software provider website	Acceptable - Suboptimal
Path 2. Uses lookup tool to find a Free File software offer	Acceptable - Optimal Acceptable - Optimal Acceptable - Suboptimal
Path 3. Unable to locate software offerings page from Free File landing page	Unacceptable

Path 3 did not lead to task completion, and there were cases where paths 1 and 2 did not either. Paths 1 and 2 may be acceptable-optimal and paths 1, 1a, and 2a may be acceptable-suboptimal. One participant is excluded from Task 2 pathways analysis because they were prompted by the interviewer to use the lookup tool when their first scenario was described.

Table 65. Task 2 Path Rating Scale.

	Acceptable - Optimal		Acceptable - Suboptimal			Unacceptable		
	<i>Path 1</i>	<i>Path 2</i>	<i>Path 1</i>	<i>Path 1a</i>	<i>Path 2</i>	<i>Path 1</i>	<i>Path 2</i>	<i>Path 3</i>
Number of participants	7	10	1	1	5	1	2	1
	17		7			4		
Out of total participants	17/28 = 60.7%		7/28 = 25%			4/28 = 14.3%		

Table 66 describes how many participants elected to use the lookup tool versus the Free File software offer descriptions when selecting a Free File software offer for the first scenario issued. In this scenario, the interviewer did not prompt the participant to use the lookup tool; they were permitted to select a Free File software offer in whatever way was most natural for them.

Table 66. Use of Lookup Tool versus Vendor Descriptions for Scenario 1.

	Acceptable Paths	
	<i>Used Offerings Descriptions (Paths 1, 1a)</i>	<i>Used Lookup Tool (Path 2)</i>
Number of participants	10	17
Out of total participants	10/28 = 35.7%	17/28 = 60.7%

More participants relied on the lookup tool (17 users) than on the Free File software offer descriptions (10 users) to select a Free File software offer. However, many users did use the Free File software offer descriptions instead. As long as both options are available to taxpayers, usability issues in both will need to be addressed since many taxpayers will be using both.

Section 4.2 describes usability issues that led participants away from the lookup tool, including unfamiliar naming, an unclear description, dense text blocks, and visual element appearance. If the IRS wants to direct taxpayers toward the lookup tool, these usability issues need to be addressed to make the tool more findable.

Optimal paths were followed by 60.7 percent of participants. Section 4.2 details usability issues whose solutions could help move suboptimal and unacceptable path users toward optimal paths, specifically, areas where taxpayers were confused or frustrated, committed errors, or had to move backwards through web pages.

7.2.1 Errors Committed Using the Lookup Tool

Incorrect answers to EITC eligibility were the only errors committed during lookup tool usage. See Figure 36 and Figure 37 for the results returned from the two selection scenarios when the scenarios were completed correctly. Table 67 shows errors committed using the lookup tool for selection scenario 2, which is the only task where all participants were required to use the lookup

tool to select a Free File software offer. Eight of 28 participants committed an error on the lookup tool on this task; all errors were due to selecting yes for EITC eligibility.¹⁴

Various lookup tool usability issues—unclear eligibility information, lack of clarity of the consequences of wrong answers, and lack of verifying taxpayer-entered information for correctness—could be solved by instead asking the taxpayer about information that determines EITC eligibility, like income (already asked), anticipated filing status, and number of children. Section 4.2 captures further detail and alternative suggested solutions.

Table 67. Errors Committed using Lookup Tool (Scenario 2).

Error	Count
Entered "Yes" for EITC question	8
No Error	20
Total	28

7.3 Participants’ Free File Offer Selections Across All Tasks

Throughout the usability testing tasks, participants were presented with multiple opportunities to select a Free File software offer (using the lookup tool or the eligibility criteria on the software offers page), and participants shared their rationale for selecting the Free File software offers they chose.

Table 68 shows the Free File software offers selected across all usability tasks in the session where taxpayers had the opportunity to select one.

Table 68. Free File Offers Selected During the Usability Session.

Free File Software Offer	Count	Percent of Total
Member 10	31	32%
Member 3	14	15%
No Offer Selected	13	14%
Member 2	11	11%
Member 8	5	5%
Member 4	5	5%
Member 1	4	4%
Member 6	4	4%
Member 7	3	3%
Member 5	2	2%
Member 11	2	2%
Member 9	1	1%
Member 12	1	1%
Total	96	100%

¹⁴ One taxpayer, not included in the n=28, was frustrated by not seeing Texas in the lookup tool state drop down and opted to not use the lookup tool for selection scenario 2.

Member 10 was selected the most often (32 percent of selections), followed by Member 3. Participants did not select a Free File software offer or said they would select multiple 14 percent of the time.

Participant comments made throughout the sessions illuminate how taxpayers understand the Free File software offers and the strategies they use to make a selection when confronted with many options. Table 69 shows the primary reasons taxpayers gave for selecting software offers, among all taxpayers who selected a Free File software offer at any point during the interview (N=83).

Table 69. Reasons for Software Offer Selections.

Reason	Count
Prior experience with Free File software provider	27
Familiarity with the product name or URL	18
Based on Free File member’s eligibility criteria listed on software offers page	13
Picked at random	7
First offering listed on lookup tool results or software offers page	6
Unknown/not mentioned	6
Searched for terms in Free File software offer provider’s name (e.g. "free," "file," "IRS")	5
Reviewed website of each offer listed in lookup tool results	1
Total	83

The most common strategy taxpayers relied upon to select a Free File software offer was past experience with a software provider (n=27). If they had had a positive experience with the software provider in the past, they felt confident that the software provider offering would work well for them or the fictional “Isaac” or “Rita.” Both positive and neutral past experiences were cited as reasons to use a software provider again, specifically for efficiency—users said their personal information would be saved and thus shorten the filing process both at present and in the future.

When the top name recognition offerings, were available, users usually chose one of the two due to familiarity with the name (n=18). This was the second most commonly stated reason for choosing an offer. Name recognition usually came up as a positive aspect (selecting a software provider they recognized) but a few times as a negative (wanting to avoid “the big guys”).

The next most common strategy for selecting a Free File software offer was based on the Free File offer’s eligibility criteria listed on the Free File software offers page (n=13). Next, participants chose at random (n=7).

Following selecting at random, participants choose an offer because it was first in the list (n=6); this was especially in cases where the taxpayer was not familiar with any of the other names. One stated, “I chose this vendor because I didn’t recognize any of the three and it was the first one listed.” This suggests that the practice of randomizing the Free File software offers is

effective for distributing taxpayers’ choices across software providers, but only in cases where prior experience and name recognition do not exist.

When they were not familiar with any of the software providers’ names from advertising or prior experience, another strategy participants used was to evaluate aspects of the software provider name, searching for keywords (n=5). Participants talked about software provider names that seemed more or less trustworthy to them, and names they perceived as more relevant to filing tax returns for free, like Free 1040 Tax Returns (recognizing “1040” and “free”) and FreeTax USA (“free”). One participant stated about choosing 1040.com Free File Edition, “I’ll just pick this one.... This is the general tax filing form [the 1040]... it was a place to start.” Some participants suggested that there was an element of random selection combined with heuristic devices like name to help them narrow down the many options: “I looked to see if I qualify based on my income and the state I live in. The other thing was the clever name [ezTaxReturn.com]. I admit it’s a stupid reason. There are too many choices. If there are ten there and four qualify, then it’s like eenie meenie miney mo.”

One taxpayer reviewed the website of each offer listed in the lookup tool results.

Note that the data presented here is across both lookup tool and offering descriptions paths. It does not account for cases where participants made errors in using the lookup tool or reading offering descriptions. This data does not necessarily reflect what users would choose for themselves (they were using fictional scenarios) nor selections that were definitively in the correct range of responses for the scenarios—eligibility misunderstandings or mistakes led participants to different ranges of possible responses. This is an added variable for lookup tool paths in particular; when participants erroneously selected EITC eligibility in the tool, that affected the range of possible Free File software offers that the tool delivered.

The screenshot shows the IRS Free File Software Lookup Tool Results page. At the top left is the IRS logo, and at the top right is the text 'Free File Software Offers'. The main heading is 'Free File Software Lookup Tool Results'. Below this, a paragraph states: 'Based on the information you provided, you are eligible to use Free File software to file your federal and state taxes for free. You may pick from either Free Federal and State Return Options or Free Federal Return Only Options. Review the Free File software options and pick the option that's best for you. To view the list of forms and schedules, customer support, and other services, go to the company's website for more information.' Below this paragraph, it says 'You qualify for the Free File software options below.' There are two columns of options. The first column is titled 'Free Federal and State Return Options:' and lists three options: 'Online Taxes at OLT.com', 'TaxAct®Free File', and '1040.com Free File Edition'. The second column is titled 'Free Federal Return Only Options:' and lists five options: 'FreeTax Returns.com', 'eSmart Free File Edition', '1040NOW.NET', 'FileYourTaxes.com', and 'ezTaxReturn.com'.

Figure 36. Free File Offer Lookup Tool Result for Correct Entry of Selection Scenario 1 Information.



Free File Software Lookup Tool Results

Based on the information you provided you **are eligible** for Free File software.

You **qualify** for the Free File software options below.

Free Federal Return Only Options:

- [TaxAct® Free File](#)
- [H&R Block's Free File](#)
- [eSmart Free File Edition](#)
- [Online Taxes at OLT.com](#)
- [TurboTax Free File Program](#)
- [TaxSlayer](#)
- [1040.com Free File Edition](#)
- [FreeTaxUSA® IRS Free File Edition](#)
- [FileYourTaxes.com](#)

Figure 37. Free File Offer Lookup Tool Result for Correct Entry of Selection Scenario 2 Information.

8 Conclusion

This independent assessment investigated taxpayers' experience and satisfaction with the online Free File system. Specifically, MITRE assessed:

- Usability issues and taxpayer experiences locating the Free File program online; selecting a Free File software offer using fictitious tax scenarios, including with the Free File software lookup tool; and filing a return with a Free File software using fictitious tax scenarios
- Taxpayers' qualitative insights on their previous knowledge of Free File, their previous experience with Free File, and where they would go for assistance while filing taxes
- Taxpayers' overall perceptions of the Free File system and program.

MITRE conducted testing only with taxpayers who had previous Free File use as indicated by the Free File indicator in CDW and participants' own reporting of Free File use during testing eligibility screening. Caution should be used when generalizing from the sample of taxpayers interviewed here to the full taxpayer population.

MITRE observed several high severity usability issues across the three main testing tasks that taxpayers performed. These issues may halt or delay taxpayers' progress filing through Free File.

MITRE found that taxpayers struggle to navigate through IRS.gov to locate the Free File landing page and take sub-optimal routes to find it. Once on the Free File landing page, MITRE found that taxpayers experienced several usability issues with the software lookup tool, including challenges finding the tool, understanding its purpose, and answering questions about state income tax returns and EITC eligibility. Through taxpayers' use of the lookup tool, MITRE found that taxpayers do not understand the EITC eligibility criteria.

MITRE found that taxpayers are overwhelmed by the number of Free File software choices and the information provided with them, which makes it difficult for them to select an offer.

Taxpayers use various strategies to select an offer. Most taxpayers rely on familiarity with company names or previous experience with a software provider rather than eligibility criteria to select a Free File software offer.

Broadly, MITRE found that taxpayers lack an awareness that Free File exists, or they misunderstand the program. Taxpayers often confuse Free File offerings with free commercial products.

MITRE recommends that the IRS consider taxpayers' journey with Free File to begin upon opening a search engine as nearly all participants started their search for Free File with an internet search engine query. The IRS should conduct future research to understand taxpayers' awareness and understanding of Free File program and to understand their reasons for using or not using Free File.

9 References

- [1] The MITRE Corporation, "IRS 1040 Redesign - Technical Report," MITRE Corporation, McLean, 2019.
- [2] J. Sauro, "The relationship between problem frequency and problem severity in usability evaluation," *Journal of Usability Studies*, vol. 10, no. 1, pp. 17-25, 2014.
- [3] P. M. Fitts, "The information capacity of the human motor system in controlling the amplitude of movement.," *Journal of Experimental Psychology*, vol. 47(6), pp. 381-391, 1954.
- [4] W3C Working Group, "WAI-ARIA Authoring Practices 1.1," 14 August 2019. [Online]. Available: https://www.w3.org/TR/wai-aria-practices/#aria_ex. [Accessed 22 August 2019].
- [5] J. Sauro, "10 things to know about the Single Ease Question (SEQ)," MeasuringU, 30 October 2012. [Online]. Available: <https://measuringu.com/seq10/>. [Accessed 8 August 2019].
- [6] K. Finstad, "The Usability Metric for User Experience," *Interacting with Computers*, vol. 22, no. 5, p. 323–327, 2010.
- [7] A. Genoy, "Iterative usability testing as continuous feedback: A systems control perspective," *Journal of Usability Studies*, vol. 1, no. 1, pp. 18-27, 2005.
- [8] J. Nielsen, "Usability 101: Introduction to Usability," 2012. [Online]. Available: <https://www.nngroup.com/articles/usability-101-introduction-to-usability/>. [Accessed 2 April 2019].
- [9] "Usability testing," [Online]. Available: <https://www.usability.gov/how-to-and-tools/methods/usability-testing.html>. [Accessed 2 April 2019].
- [10] S. Presser, M. Couper, J. Lessler, E. Martin, J. Martin, J. Rothgeb and E. Singer, "Methods for testing and evaluating survey questions," *Public Opinion Quarterly*, vol. 68, no. 1, pp. 109-130, 2004.
- [11] O. Alhadreti and P. Mayhew, "To intervene or not to intervene: An investigation of three think-aloud protocols in usability testing," *Journal of Usability Studies*, vol. 12, no. 3, pp. 111-132, 2017.
- [12] International Organization for Standardization (ISO), "ISO 9241-11:2018 Ergonomics of Human-System Interaction -- Part 11: Usability: Definitions and Concepts," 2018.
- [13] J. Sauro and J. S. Dumas, "Comparison of three one-question, post-task usability questionnaires," *Proceedings of the SIGCHI conference on human factors in computing systems, ACM*, pp. 1599-1608, 2009.
- [14] J. Sauro, "Using Task Ease (SEQ) to Predict Completion Rates and Times," MeasuringU, 30 October 2018. [Online]. Available: <https://measuringu.com/seq-prediction/>. [Accessed 8 August 2019].
- [15] P. Laubheimer, "Beyond the NPS: Measuring Perceived Usability with the SUS, NASA-TLX, and the Single Ease Question After Tasks and Usability Tests," Nielsen Norman Group, 11 February 2018. [Online]. Available: <https://www.nngroup.com/articles/measuring-perceived-usability/>. [Accessed 8 August 2019].

- [16] J. Sauro, "5 Ways to Interpret a SUS Score," MeasuringU, 19 September 2018. [Online]. Available: <https://measuringu.com/interpret-sus-score/>. [Accessed 8 August 2019].
- [17] A. Bangor, P. Kortum and J. Miller, "Determining What Individual SUS Scores Mean: Adding an Adjective Rating Scale," *Journal of Usability Studies (JUS)*, vol. 4, no. 3, pp. 114-123, 2009.
- [18] A. Bangor, P. Kortum and J. Miller, "An Empirical Evaluation of the System Usability Scale," *Intl. Journal of Human-Computer Interaction*, vol. 24, no. 6, pp. 574-594, 2008.
- [19] H. Alathas, "How to Measure Product Usability with the System Usability Scale (SUS) Score," UX Planet, 19 November 2018. [Online]. Available: <https://uxplanet.org/how-to-measure-product-usability-with-the-system-usability-scale-sus-score-69f3875b858f>. [Accessed 8 August 2019].

Appendix A Detailed Methods

This section provides additional detailed information about the methodological approach for the Free File usability study.

In this section, the population of interest (Tax Year (TY) 2018 free filers) is described in terms of their Adjusted Gross Income (AGI), age, and other characteristics observable in Compliance Data Warehouse (CDW).

The recruitment procedures are described, and this section reports detailed response rates from MITRE’s recruitment efforts.

This section also details the data collection methods and the analytical approach, including how the interviews were conducted and the literature and theory behind the methodological approach.

A.1 Population of Interest and Sampling Procedure

The population of interest for this study is taxpayers who are identified in CDW as having filed their returns through the Free File program in TY 2018. Because the usability testing focuses on the Free File system, Wage and Investment (W&I) asked that MITRE focus on previous free filers as the population most affected by this change. Focusing on this population also ensured that usability issues would not be due to including participants who would not normally be eligible for Free File or who would not normally file electronically. Note that MITRE was not able to verify whether returns marked in the CDW table ETARAS_MEF1544 were recognized by Free File vendors as such; MITRE relied solely on the data captured in CDW to identify the population.¹⁵ Because the data were drawn from tax documents, MITRE did not have access to some demographic characteristics associated with the taxpayers, such as education level.

Table 70 describes the full free filer population in TY 2018. These data were drawn from the CDW table ETARAS_MEF1544, defined as having used Free File (ENGLISH_FREE_FILE_RET_IND=1), having the return accepted (accepted_rtn_ind=1), and having non-missing values for software vendor ID (software_id_number). To clean the data, MITRE removed duplicate Tax Identification Numbers (TIN), TINs with missing zip codes, TINs with international zip codes, and taxpayers under 18 years of age.

¹⁵ Note that some taxpayers marked as having used Free File did not appear to be eligible for Free File due to high AGI. MITRE cannot determine why this is the case.

shows an overview of the full sample selection process.

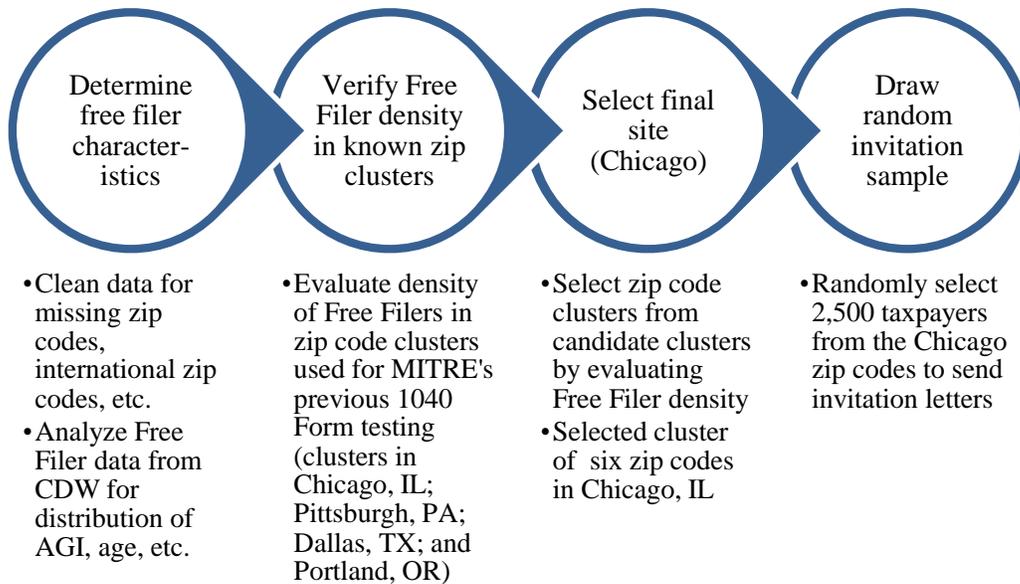


Figure 38. Overview of Sampling Process.

The full population of taxpayers that MITRE used to construct an invitation sample to participate includes 2,343,235 unique TINs from TY 2018. As documented in , MITRE first cleaned the data set drawn from CDW, then examined the characteristics of the national free filer population. The characteristics of this population are displayed in Table 70. On average, free filers in the U.S. have a mean AGI of \$23,247, with mean wage income of \$21,108. Their average age is about 38 years, and the majority file as single (71 percent). Most Free File users in TY 2018 did not claim the EITC; among those who did, the mean value claimed was about \$565. Table 78 in Appendix D shows the Free File vendors used by the national Free File population, Chicago zip codes population, and Chicago invitation letter sample.

MITRE then evaluated the density of free filers in four zip codes previously visited for a separate usability testing project (the 1040 Form redesign study conducted by MITRE in late 2018). MITRE determined that Chicago had sufficient volume of free filers (N=4,106). MITRE examined the Chicago zip codes population characteristics in comparison to the national Free File population. This comparison is shown in Table 77 in Appendix D. The comparison shows that the Chicago zip code cluster population is less variable than the national population, with a clustered distribution around 30 years of age (Figure 39), and has higher AGI, particularly among taxpayers in their late twenties and early thirties (Figure 40).

MITRE then randomly selected 2,500 of the 4,106 taxpayers in the Chicago zip code cluster to receive invitation letters. The characteristics of these 2,500 randomly selected taxpayers compared to the 4,106 population in Chicago and the full national population are shown in Appendix D Table 77.

Table 70. Characteristics of National Free Filing population, TY 2018.

AGI (Dollars)	
Mean	23,247
Median	20,383
Wage Income (Dollars)	
Mean	21,108
Median	18,079
Age (Years)	
Mean	37.9
Median	32.0
Filing Status (Percentage)	
Head of Household	17%
Married Filing Jointly	11%
Married Filing Separately	2%
Single	71%
Widow/er	0%
EITC Claims (Dollars)	
Mean	565.9
Median	0.0
Total N	2,343,235

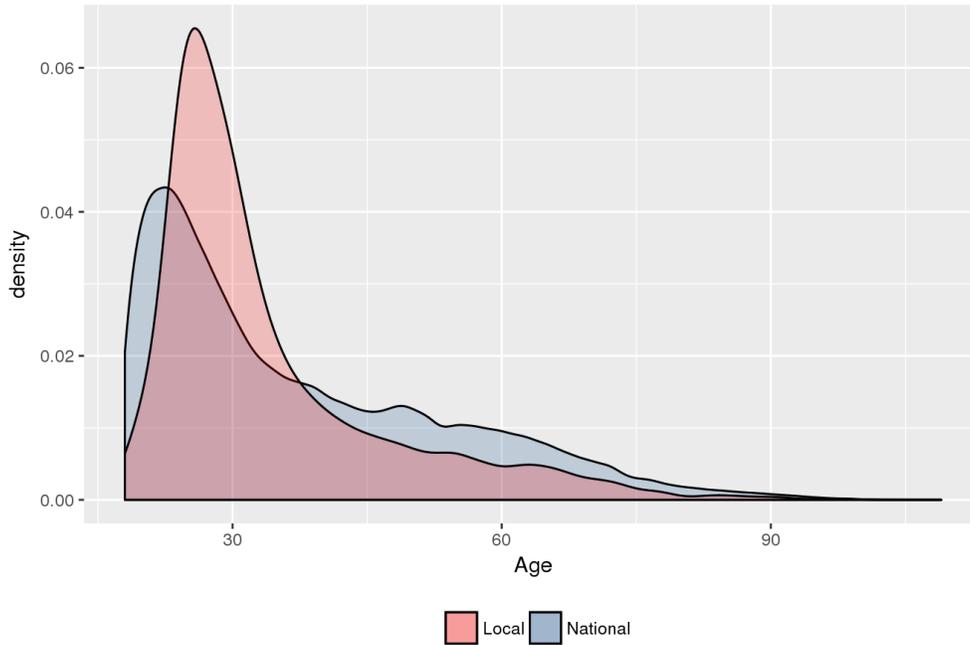


Figure 39. Distribution of Age for National Free Filers and Local (Chicago) Free Filers, TY 2018.

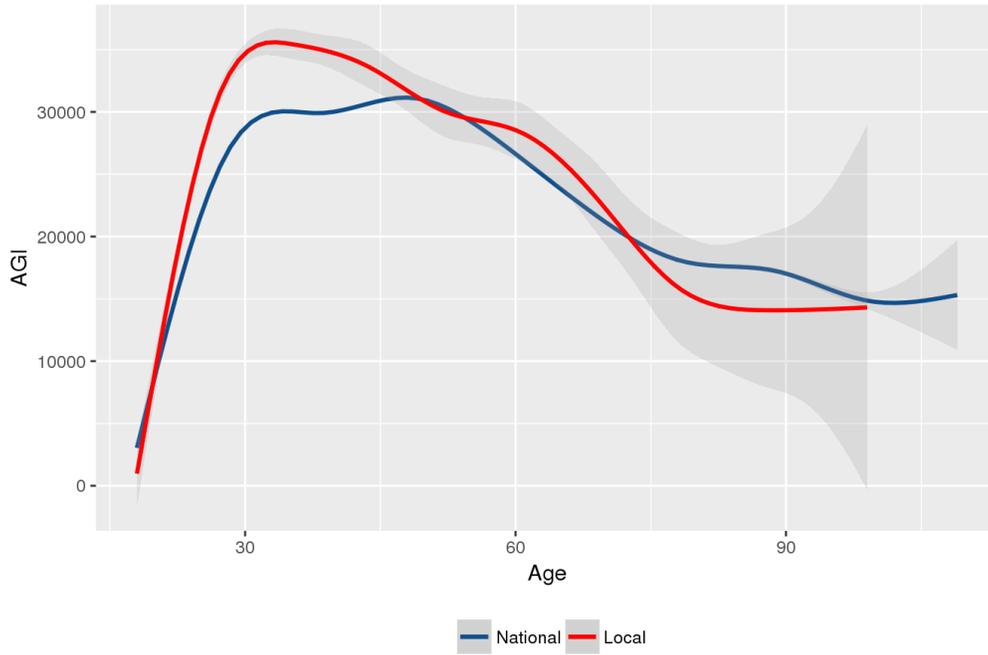


Figure 40. Joint Distribution of Age and AGI among National Free Filers and Local (Chicago) Free Filers, TY 2018.

A.1.1 Site Selection

The goal of this study was to gather usability and perception information from a sample of taxpayers who are indicated as having used Free File in TY 2018. The study team agreed to accomplish this by sending out invitation letters to participate to free filers in one location in the continental U.S., selected on the basis of two primary criteria. Because of the quick turnaround time on this research project, MITRE looked to prior experience conducting usability testing with paper filers in the fall of 2018 for the independent assessment of the redesigned Form 1040. In that previous study, MITRE interviewed 73 taxpayers in zip code clusters in Chicago, IL; Portland, OR; the Pittsburgh, PA metropolitan area; and the Dallas, TX metropolitan area. Because of the team’s prior familiarity with these sites, MITRE examined the feasibility of revisiting one of these sites for the Free File usability study. To do this, the lead researcher examined the demographic characteristics and density of free filers in the zip code clusters previously defined for the Form 1040 study. The final zip codes selected appear in Table 71. Final Zip Codes Selected for Invitation Sample.

Table 71. Final Zip Codes Selected for Invitation Sample.

Area	Zip Codes	Total Free Filers, TY 2018	Invitation Letters Sent
Chicago, IL	60657, 60640, 60618, 60613, 60625, 60660	4,106	2,500

A.2 Recruitment Procedures

A.2.1 Contact Strategy

MITRE conducted a multi-stage contact strategy that informed potential participants about the study and invited them to participate. First, the IRS sent an introductory letter to the list of potential participants identified by MITRE. This letter provided high-level information about the study and alerted the taxpayer that they may be contacted by MITRE to participate. The letter also provided an IRS toll-free phone number, the internet address for the IRS official website (www.IRS.gov), as well as where to find the MITRE study listed on the IRS website so receivers of the letter can call or visit to verify the legitimacy of the study.

The introductory letter from the IRS was mailed to on July 3, 2019. The introductory letter followed by a letter from MITRE inviting taxpayers to participate in the study. The MITRE letter was mailed on July 8, 2019.

The MITRE invitation letter provided interested taxpayers a MITRE phone number to call and a MITRE-hosted website to visit and input contact information. MITRE took calls, contacted taxpayers who submitted information via the website, and screened taxpayers to determine eligibility for participation and scheduled interviews.

A.2.2 Recruitment, Screening, and Scheduling Interviews

The study team created a workbook that served as a database for all participant contact, demographic data collection, and interview scheduling. Interviews were conducted at Harry S.

Truman City College in Chicago, IL. This venue has no IRS or MITRE affiliation, is ADA accessible, and otherwise allowed ease of respondent access.

Interested taxpayers called the MITRE phone line or submitted web inquiries from each of the four locations as letters arrived. MITRE developed a screener questionnaire that researchers administered over the phone to ensure only eligible participants (those whose households had received a letter from the pre-selected sample criteria) were able to schedule and participate in interviews. The screener also allowed MITRE to collect demographic information that was not available from tax return data obtained from CDW such as education level. The MITRE team scheduled interviews with participants on the phone, sent confirmation emails when an email address was provided, and conducted follow up confirmation calls about 24 business hours before the first interviews of each visit were scheduled.

A.2.3 Response Rates

Of the 2,500 letters that were mailed out, MITRE received responses from 141 respondents, for a total response rate of 5.64 percent. The study relied on taxpayers who expressed interest in participating in the study by contacting MITRE after receiving an invitation letter to derive the interview sample. MITRE was not able to control or influence who decided to respond to the invitation letter upon receiving it. Out of these 141 respondents, the MITRE recruitment team screened 42 respondents whom the team was able to reach via phone call, either when the respondent called in, or as MITRE attempted to call those who had left voicemails, missed calls, or submitted web inquiries. Of the 42 screened, MITRE determined that 36 people were eligible to participate in the study due to having received the MITRE letter directly, and thus being in the intended sample drawn. If a candidate indicated they filed their individual tax return online at no cost but were uncertain if the return was filed through the IRS Free File program, they were considered eligible for this study. Table 72 shows that 10 of the 36 eligible candidates screened (28 percent) were uncertain if their tax return was filled through the IRS Free File program or a commercially available free service. When asked, candidates stated they recalled using a tax software program provided by one of the Free File program members, and they were able to file their tax return for free. However, these candidates were unsure if the free tax software program they used was affiliated with the IRS Free File program.

Table 72. Free Filing Service Used by Screened Candidates Within Previous Two Years.

	Count of Candidates	Percent of Eligible Candidates
Used IRS Free File Program	26	72%
Uncertain IRS Free File or Commercial Program Used	10	28%

Of the 42 respondents screened, five (5) were determined to be ineligible because they did not use the IRS Free File program, or commercially available free service and one respondent was unable to travel to the interview location within the available timeframes. MITRE scheduled 31 interviews on a first-come, first-serve basis of respondent availability. This number was both within the range of the ideal number of study participants and represented MITRE’s capacity to interview. Additionally, MITRE created a waitlist for participant interviews for each site in case a minimum necessary number of interviews could not be conducted due to respondents’ failure to appear. Two participants failed to appear to their scheduled interview, and one participant

cancelled approximately 24 hours in advance of their scheduled interview. MITRE called two candidates from the waitlist participants. Twenty-nine total interviews were deemed “completed,” meaning that the participants were eligible, and testing took place. This does not necessarily mean that a participant completed all tasks required for the session. Table 73 provides a summary of candidate responses to invitation.

Table 73. Candidate Response.

	Count	Percent of Total Respondents
Number of Letters Mailed	2,500	
Total Number of Respondents	141	
Number of Candidates Screened	42	30%
Number of Screened Candidates Eligible to Participate	36	26%
Number of Participants Scheduled	31	22%

A.2.4 Demographic Characteristics of Screened Respondents

Table 74 shows the demographic breakdown of candidates that completed the screening process interview and were deemed eligible to participate in the interviews. The data in Table 74 were reported by the participant during phone screening, not derived from tax return data in CDW. At a glance, the vast majority (92 percent) of respondents filed as single, and the largest age range was 31-55 years of age (53 percent) followed by 18-39 (28 percent). Forty-two percent reported a household income between \$15,001 and \$35,000 and the most common educational level was a bachelor’s degree (53 percent) followed by having a master’s degree (28 percent). Note again that participant recruitment ultimately depended upon the taxpayers themselves contacting MITRE after receiving an invitation letter; therefore, MITRE was not able to dictate the characteristics of the taxpayers who participated beyond the sample plan described in Section 2.2 Recruitment.

Table 74. Demographic Characteristics of Respondents Screened.

	Count of Respondents	Percent of Eligible Respondents
Number of Screened Respondents Eligible to Participate	36	
Filing Status of Eligible Screened Respondents		
Single	33	92%
Married Filing Joint	0	0%
Married Filing Separate	0	0%
Head of Household	3	8%
Widow/Widower	0	0%
Unknown	0	0%
Age Range of Eligible Screened Respondents		
18-30	10	28%
31-55	19	53%
56-68	3	8%
69-81	3	8%
82+	1	3%
Household Income of Eligible Screened Respondents		
Less than \$15,000	7	19%
Between \$15,001 and \$35,000	15	42%
Between \$35,001 and \$50,000	8	22%
Between \$50,001 and \$75,000	5	14%
Between \$75,001 and \$90,000	1	3%
More than \$90,000 a year	0	0%
Unknown	0	0%
Highest Level of Education of Eligible Screened Respondents		
No schooling completed	0	0%
Some school but did not complete high school	0	0%
Received high school diploma, GED or alternative	5	14%
Associate’s degree	1	3%
Bachelor’s degree	19	53%
Master’s degree	10	28%
Professional degree beyond bachelor’s degree	0	0%
Doctorate degree	1	3%
Unknown	0	0%
Military Pay of Eligible Screened Respondents		
Participant and/or spouse received military pay	0	0%
Zip Codes of Eligible Screened Respondents		
60613	3	8%
60618	9	25%
60625	4	11%
60640	12	33%
60660	3	8%
60657	5	14%

A.3 Data Collection

A.3.1 Usability Testing Approach

To collect data on the Free File system usability, user experience, and satisfaction, MITRE conducted 29 one-on-one, in-person testing interviews. These interviews lasted 60-90 minutes, and interviews were cut off if the participant had not finished the interview tasks at the 90-minute mark.

In keeping with research best practices [7], the testing approach was designed to meet the needs of the research objectives. Traditional usability testing is typically thought to focus on systems or interfaces (e.g., websites, software systems), and consists of inviting users to participate in representative activities designed to evaluate user errors as well as user satisfaction (how pleasant or difficult it is to use the design) [8]; see also [9]. MITRE applied these principles to the testing approach.

To enhance the findings and incorporate more insight into taxpayers' cognitive processes while completing the tasks, the MITRE team also drew on insights from traditional cognitive pretesting methods, typically used for evaluating survey and questionnaire design [10]. As such, the interview protocol included debriefing questions designed to understand taxpayers' cognitive processes as they went through the tasks of finding Free File, selecting a Free File software offer, and filing a return. An additional important feature of the usability testing approach was to intervene in the taxpayers' processes as little as possible [11], allowing the user's experiences and challenges to drive the findings as much as possible.

During each testing task, the interviewer and a notetaker took note of instances where the taxpayer expressed frustration, confusion, or hesitation. The notetaker also recorded aspects of the taxpayers' behavior including whether or not they successfully located the IRS.gov Free File landing page independently (i.e., without any intervention from the interviewer), whether they successfully selected a Free File software offer independently with and without the lookup tool, whether errors were committed on the lookup tool and while filing a return, and which Free File software offers they selected. During debriefing, the interviewer probed on these behaviors to understand what was going through the taxpayer's mind and how the taxpayer interpreted elements of the Free File system.

The interview protocol followed this format:

1. **Introduction.** The interviewer explained that the purpose of the interview is to evaluate the design of the Free File system, not evaluate the taxpayers' skills or abilities. The interviewer explained that MITRE did not design any of the software systems tested and stressed their own role as an observer, not a helper. The interviewer also explained that MITRE is a not-for-profit organization and has no commercial interest in the Free File program. The taxpayer signed an informed consent form.
2. **Usability Task 1: Locating Free File.** The taxpayer was not presented with a fictitious scenario for this part of the interview. The taxpayer was asked to imagine that they learned that the IRS offered a program to file federal returns for free, and how they would go about locating that service. The interviewer and notetaker observed the taxpayer complete the task. The interviewer allowed the participant to continue independently up until the point of selecting a Free File software offer for their own eligibility situation, if and only if the taxpayer located the Free File landing page independently. If the taxpayer

indicated that they would end on a commercial website or were not able to find Free File, the interviewer intervened and directed them to IRS.gov and asked the participant to search from there.

3. **Single Ease Question (SEQ 1) and Debriefing Questions on Locating Free File task.** The interviewer asked the participant to fill out the SEQ first question to rate the ease of the task. The interviewer then asked a series of questions designed to better understand the taxpayer’s actions and experiences, such as, “Can you tell me more/walk me through the process you use to find the location where you file for free?”
4. **Usability Task 2a: Selecting a Free File Software Offer, Scenario 1.** The interviewer directed the taxpayer to the Free File landing page and gave the taxpayer a fictitious scenario (two scenarios were used; their order was alternated, see section A.3.2). The taxpayer was tasked with selecting an eligible software offer for the fictitious person.
5. **Usability Task 2b: Selecting a Free File Software Offer with the Lookup Tool, Scenario 1 (if needed).** If the taxpayer did not independently select to use the lookup tool in test 2a, the interviewer asked the participant to repeat scenario 1 and use the lookup tool.
6. **Usability Task 2c: Selecting a Free File Software Offer with the Lookup Tool, Scenario 2.** The interviewer administered a second lookup tool scenario (designed to return a different set of results if completed correctly).
7. **SEQ 2 and Debriefing Questions on Usability Task 2.** The interviewer asked the participant to fill out the SEQ second question to rate the ease of the task. The interviewer then asked a series of questions designed to better understand the taxpayer’s actions and experiences, such as how they decided whether or not to use the lookup tool.
8. **Usability Task 3: Filing a return.** The interviewer instructed the taxpayer to select one of three randomly chosen Free File software offers to test. The interviewer gave the taxpayer a new fictitious scenario, the filing scenario. The taxpayer created an account and filled out a return using the filing scenario.
9. **SEQ 2 and Debriefing Questions on Usability Task 3.** The interviewer asked the participant to fill out the SEQ third question to rate the ease of the task. The interviewer then asked a series of questions designed to better understand the taxpayer’s actions and experiences, such as “Overall, how easy or difficult was your experience using the Free File program?”
10. **Usability Metric for User Experience (UMUX) -Lite Questionnaire.** All participants filled out a satisfaction questionnaire to measure user satisfaction and other aspects of user experience.
11. **Overall Debriefing Questions.** Interviewers asked all participants (regardless of how many vignettes were given) a series of questions about their past experiences with the Free File program, how they heard about Free File, how their prior experience compared to the testing situation, and for suggestions for how the IRS could make the Free File experience easier for taxpayers.

12. **Incentive and Closeout.** The interviewer gave the taxpayer a \$100 prepaid VISA gift card and thanked them for their time. The taxpayer signed a voucher confirming they received the gift card.

A.3.2 Test Scenarios

In preparation for the usability interviews, the MITRE team developed three fictitious scenarios. Two scenarios were used to support tasks where taxpayers were asked to select a Free File software offer for which a fictitious person was eligible (selection scenarios 1 and 2). The third scenario was used to support the task where taxpayers were asked to complete a tax return using a Free File software offer chosen by MITRE (filing scenario). To design the selection scenarios, MITRE examined eligibility criteria for different Free File software offers and developed taxpayer characteristics that would return different sets of possible Free File software offers. To design the filing scenario, the team had two goals: 1) to introduce enough complexity into the scenario so that taxpayers would have to interact with multiple components of the tax preparation software, including filing status, dependents, and adjustments to income, while still keeping the scenario simple enough to complete in approximately 30 minutes, and 2) to ensure that scenarios represented feasible free filer filing characteristics. Using CDW data, the team identified which fields on previous were commonly populated by individuals filing through Free File. In particular, MITRE’s review of the free filer data available in CDW shows (see Appendix D for detailed descriptive statistics):

- 71 percent of taxpayers who filed through the IRS Free File program in TY 2018 reported a filing status of single; the second most common filing status was head of household (17 percent)
- Mean AGI for free filers in TY 2018 was \$23,247
- Thirty-five percent of taxpayers using the IRS Free File program in TY 2018 claimed any non-zero amount for Earned Income Tax Credit (EITC), with a mean EITC distribution value of \$566
- Exactly 1.6 percent of taxpayers using the IRS Free File program in TY 2018 itemized deductions

All scenarios used a fictitious name, address, and other taxpayer information. Any resemblance to actual persons, living or dead, is purely coincidental. A summary of each scenario is provided below. See Appendix A for the complete set of scenarios used during the usability study.

- **Selection Scenario 1.** Participants used this scenario to identify and select a Free File software offer using the IRS Free File program web page (which may have included using the software lookup tool). The scenario contains details about a single taxpayer, age 52, who resides in Massachusetts, has one dependent, and 2018 AGI of \$49,000. *This scenario was designed to return eligibility results that do not include the large company software providers, which together represent approximately 70 percent of Free File returns filed in TY 2018¹⁶.*

¹⁶ Based on data from CDW.

- **Selection Scenario 2.** Participants also used this scenario to identify and select a Free File software offer using the IRS Free File program web page (which may have included using the software lookup tool). The scenario contains details about a single taxpayer, age 43, who resides in Texas, has no dependents, and 2018 AGI of \$33,000. *This scenario was designed to return eligibility results that do not include options to file a state return for free.*
- **Filing Scenario.** Participants used this scenario to complete an online federal tax return using a Free File software offering selected at random by MITRE. The scenario contains [12] and student loan interest paid as reported on Form 1098-E. This taxpayer is also eligible for the EITC. The scenario included additional information on the payment of household expenses to introduce some complexity as to whether or not the taxpayer should file as single or head of household (the two most common filing statuses for free filers). This component of the scenario pushed taxpayers to interact more fully with the filing status feature of the tax preparation systems.

Selection scenarios 1 and 2 were required to complete the tasks related to the Free File software lookup tool. To control for order effect, MITRE alternated the order that participants received selection scenarios 1 and 2. All participants completed the same filing scenario.

A.3.3 Satisfaction and Overall Experience Questionnaires

After completing *each* task, participants responded to the SEQ regarding that task. After completing *all* tasks, users answered the UMUX about their entire Free File experience during the session. These questionnaires gathered self-reported satisfaction and usability data about participant experiences using the IRS Free File program. Note that when usability and ease of use are discussed in this section, they are actually indicative of *perceived* usability and *perceived* ease of use; they do not comprehensively take into account other aspects of usability like effectiveness and efficiency.

The SEQ was created by Sauro and Dumas [13]. The SEQ is a single-item questionnaire that measures user perception of ease related to *specific tasks*. It is asked directly after the relevant task and is administered on a seven-point response scale, where one is “very difficult” and seven is “very easy.” SEQ scores are interpreted against an industry-accepted scale of below-average, average, and above-average SEQ response ranges.

- Item: “Overall, how easy or difficult was the task to complete?”

The UMUX was created in 2010 by Finstad [6]. It is a four-item questionnaire that looks at an entire experience; it is not task-specific. Its four questions for measuring usability are targeted at the ISO 9241 definition of usability (effectiveness, efficiency, and satisfaction). There are two positive and two negative items, all administered on a seven-point response scale, where one is “strongly disagree” and seven is “strongly agree” with the item in question. “Free File software system” was substituted for “this system.” UMUX responses are converted to scores and compared to an industry-accepted acceptability and “grading” comparison system (e.g., a score in the C range is marginally acceptable). UMUX metrics are often used to track usability of a system and set future usability goals. Here, the UMUX is used to assess usability of the *entire experience* rather than of individual tasks.

- Items:

- “[This system’s] capabilities meet my requirements.”
- “Using [this system] is a frustrating experience.”
- “[This system] is easy to use.”
- “I have to spend too much time correcting things with [this system].”

A.3.4 Taxpayer Perceptions

At the end of each interview, the interviewer asked additional debriefing questions to get the participant to reflect on their experience with Free File. These questions were intentionally asked at the end of the exercise, as asking for this type of information upfront could have primed the participant to think about these experiences prior to completing the Free File tasks. Debriefing questions included the following topics:

- Taxpayers’ prior experience using Free File
- How taxpayers heard about Free File and what vendor(s) they previously used
- How the IRS could make the Free File program easier to use
- Type(s) of help the participant would look for (call the IRS, website, etc.)

During project planning, the sponsor indicated interest in understanding whether or not the interests of military taxpayers are represented by the Free File system. MITRE had already decided to conduct interviews in Chicago zip codes at this point and did not expect military member participation based on the invitation letter sample, so MITRE included a debriefing question after the Free File software offer selection task to ask, “If you were a member of the military, what would you think about this site? What steps would you take? *[if needed]* Would you have done anything differently?”

Note that the only time taxpayers were asked to reflect on their prior experiences with Free File was in the overall debriefing interview. However, some taxpayers brought up this prior experience in the context of the usability testing tasks. Their relevant comments and recommendations are reported throughout this report.

A.3.5 Materials for Data Collection

The following materials were used for the usability testing sessions and are included in Appendix C:

1. Letter from IRS
2. Letter from MITRE
3. Screening protocol
4. Interview protocol
5. Laptop with multiple web browsers loaded (Internet Explorer, Google Chrome, and Firefox) and Morae recording software installed
6. Informed consent form
7. SEQ questionnaire with three questions
8. UMUX-Lite questionnaire

9. Test scenarios
10. Mocked-up tax documents for test scenarios (*not attached; they are described in the test scenario document*)
11. Receipt form for honorarium

A.3.6 Note-Taking Procedures

Each interview involved two MITRE researchers: an interviewer and a notetaker. The interviewer was tasked with administering the interview, including obtaining informed consent, explaining the usability activities, asking debriefing questions, and administering the questionnaires. The interviewer was responsible for using his/her own judgment to effectively follow-up on participant points of confusion. The notetaker was responsible for capturing the participant's behaviors and statements in a predefined notetaking template throughout the interview. Notetakers were also able to ask the participant questions in order to clarify aspects of the interview, if not covered by the designated interviewer.

A.4 Analytical Approach

A.4.1 Usability Data

For the purposes of this study, usability data are the observations made by the MITRE researchers while participants completed the test tasks (locating Free File, selecting a Free File software offer, and filing a return). These data are focused on observations of what the participant did while completing the tasks, aspects of completing the tasks that caused hesitation, confusion, or frustration, minor and major errors, participant comments that came up while they were in the process of completing the tasks, and occasions where the participant abandoned the task or indicated that they would abandon the task in a real setting.

To analyze these data, two MITRE team members read through each usability session summary, broken out by test task. They identified problems, confusion points, and errors, and extracted these issues into a running list of usability issues. As new issues were observed in the usability summaries, they were added to the list; as the researchers observed new instances of existing issues, they aggregated them onto the list. The researchers added references to each unique participant that experienced a given issue and used these participant ID lists to generate frequency counts of how often taxpayers experienced the issue.

The two researchers responsible for this part of the data analysis worked independently, with regular check-ins and regularly reviewed each other's analyses. A third researcher reviewed all usability issues for quality control purposes.

The team gave each issue a severity rating, described below. These severity ratings allow a quick reference to gauge how serious an issue was—was it a showstopper for some taxpayers, or merely a point of confusion? Did errors result for some taxpayers who encountered this problem? Note that severity levels do **not** necessarily tie to the frequency of the issues among the participants and are treated as distinct concepts [2].¹⁷

¹⁷ Severity is not tied to frequency because regardless of how many people experience a high severity issue, it is problematic if anything about the system design causes taxpayers to be unable to complete the task.

1. **High severity issues.** Issues that caused users to commit major errors or stopped the taxpayer from completing the task at hand. For example, entering an incorrect amount that causes cascading errors to throughout the tax return and to the final refund amount.
2. **Medium severity issues.** Issues that caused major frustration that the participant was able to eventually resolve on his/her own, or issues that caused minor errors. For example, not ticking a required checkbox but otherwise recording other amounts correctly.
3. **Low severity issues.** Issues that caused some frustration or caused the user to express dissatisfaction with the experience of completing the form, but the responses were correct in the end.

A.4.2 Taxpayer Pathways Analysis

To better understand how taxpayers navigated the task of finding the Free File page online and select a Free File software offer, MITRE used an approach called user flow analysis. User flow is a series of steps that a user performs to complete a task during an interaction with the system of interest. It is the path a user follows through the system.

User flow analysis is used to give insight into which paths more commonly lead to a desired outcome, such as learning X information, signing up for an e-list, completing an account creation, or completing an online purchase. It helps researchers see where users arrived from, what actions they took, and where they exited the system. It can also show which parts of the process commonly cause confusion for users, and where users get stuck, waste energy, or abandon the task. It ultimately reveals opportunities for inefficiency and error in the current user interface, like unclear menus or unexpected placement of pages within the information architecture. Once these negative opportunities are known, they can be changed to enable users to reach the desired outcome more often.

Also, armed with the knowledge of which pages receive the highest traffic (the most “eyeballs”) in a system, one can move the most important information or elements into those areas to ensure they are seen more often. Many companies employ user flow as a form of analytics, and Google Analytics offers user flow information as well.

MITRE collected participant pathways by observing the actions they took throughout their session and the comments they made. The team recorded unique pathways taken by taxpayers during two flows: locating the Free File landing page; selecting a Free File software offer for themselves (among taxpayers who successfully located the Free File landing page independently). The team tabulated the frequency of different pathways.

Overall, the team did the following in this analysis:

- Compared the routes participants took to complete the tasks
- Identified areas of common confusion, inefficiency, and error
- Demonstrated the taxpayer decision-making path
- Gained understanding on how efficiently the system is driving users to the goal action(s)

A.4.3 Taxpayer Behavior Metrics and Search Terms

In addition to recording the user flows that taxpayers followed in the usability tasks, MITRE captured and reported on the following metrics:

- Number of participants who opted to use the software lookup tool
- Errors committed using the software lookup tool
- Vendors selected by taxpayers during the testing session
- Search keywords taxpayers used to find the Free File landing page

MITRE used the last data point, search keywords used to find the Free File landing page, in conjunction with findings from the Google Web analytics analysis MITRE conducted as a separate piece of the Free File Program Assessment Final Report to evaluate whether and how MITRE’s study materials (recruitment letters, interview protocol, etc.) may have influenced how participants searched for Free File in the usability task. This analysis was done *ad hoc*; the study was not designed to definitively test whether the usability participants’ search behaviors are representative of the general taxpayer population, or to measure the extent to which interview procedures affect participant behavior. As such, MITRE’s conclusions on this topic should be interpreted with caution.

A.4.4 Qualitative Data

The analysis team used a limited content analysis approach to analyze the qualitative data. Two analysts examined a specific subset of the data in which taxpayers were asked to describe their experience with Free File prior to the interview, a comparison between their prior experience and their Free File experience during the testing session, and a debriefing probe during the course of the interview about how they would have selected a Free File software offer if they were in the military.

Coding is the fundamental process of converting open text to usable information by pulling out repeated phrases, terms, and ideas from a corpus of data and identifying commonalities, intersections, and other interactions among them. Coding can also be referred to as tagging or marking depending on the methodology and approach of a piece of source material.

The limited size and scope of the dataset prevented the analysts from delving into any set of questions to draw out underlying motivations, justifications, or meaning beyond the stated reasons provided by participants. Instead, the results of the content analysis were used “as is” and reflect a simple count of the types of responses provided by participants.

Qualitative analysis of any sort has several inherent limitations. First, there is no underlying distribution of data that can be incorporated into a statistical analysis. Each unit of data can be associated with multiple codes, and each code can be associated with multiple units of data. In addition, a lack of any codes in a unit of data simply means that a respondent did not mention that topic, it does not mean that the topic is not relevant to the respondent.

A.4.5 Questionnaire Analysis

To analyze responses, SEQ and UMUX data were grouped into subsets for like-comparison purposes, ex. grouping within certain age ranges. Due to the small sample size and tight project timeline, data was not filtered, and statistical significance was not tested for.

In demographic-focused charts, a dotted line is used to indicate groups that contained only one participant. These one-participant groups are excluded from discussions on demographic-based comparisons due to their small sample sizes.

A.4.5.1 Single Ease Question

MITRE examined mean SEQ responses, which are presented overlaid with typical SEQ response bands [14] [5] [15] (below-average, average, and above-average). These bands are taken from SEQ data from many industry and academic usability studies on a variety of interfaces.

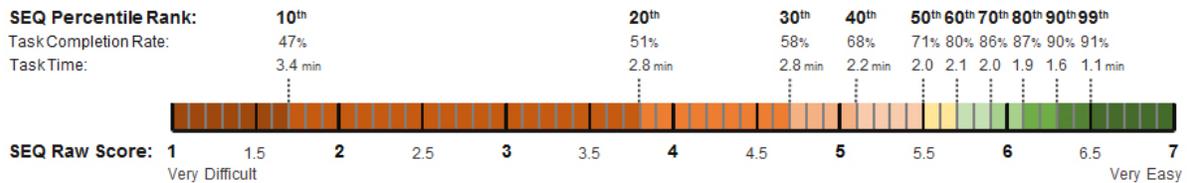


Figure 41. SEQ Score Bands.

SEQ score bands [14]

A.4.5.2 Usability Metric for User Experience

UMUX responses were converted into scores using the following process [6]:

- Odd items are scored as (score-1), even items are scored as (7-score), to remove the positive/negative keying of items and enable a minimum score of zero. After recoding, each item has a range of 0-6, and the entire scale has a preliminary maximum of 24.
- A participant’s UMUX score is the sum of the 4 items divided by 24, then multiplied by 100. This conversion gives a 0-100 range and allows comparison to System Usability Scale (SUS) metrics, an older and longer usability metric.

In brief, the conversion equation is:

$$UMUX = ((UMUX_{item1} - 1) + (UMUX_{item3} - 1) + (7 - UMUX_{item2}) + (7 - UMUX_{item4})) \times \frac{100}{24}$$

The average score across participants is then taken as the UMUX metrics of the system of interest. Responses to individual items averaged across participants are examined for more detailed insights. To interpret scores, the processed UMUX scores are treated like SUS scores. Previous work [16] developed percentile, grading, adjective [17], and acceptability [18] descriptors for understanding SUS scores, which we use. In charts, mean UMUX processed scores are presented overlaid with adjectival and grade UMUX response bands to guide interpretation.

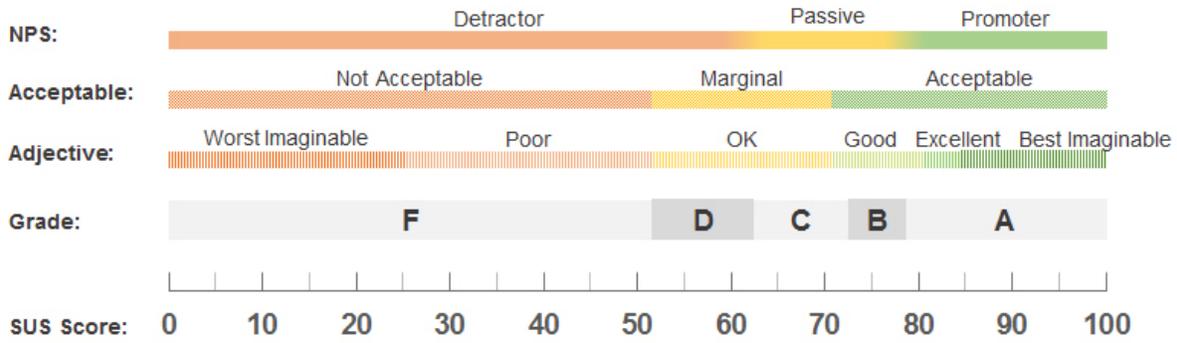


Figure 42. Grades, Adjectives, Acceptability and Net Promoter Score.

Grades, adjectives, acceptability, and Net Promoter Score (NPS) categories associated with raw SUS scores (equivalent to processed UMUX scores) [16] [11].

A general guideline is provided in Table 75 below [19]:

Table 75. General Guidelines for SUS Scoring.

SUS Score	Adjective Rating	Acceptability
92	Best imaginable	Acceptable
85	Excellent	Acceptable
72	Good	Acceptable
52	OK/Fair	Marginal
38	Poor	Not Acceptable
25	Worst imaginable	Not Acceptable
SUS Score	Grade	Acceptability
>81	A	Acceptable
68-81	B	Acceptable
68	C	Marginal
51-67	D	Marginal
<51	F	Not Acceptable

Appendix B Usability Issues Master List

Table 76 displays all of the usability issues that MITRE researchers identified in the taxpayer usability testing sessions. These issues are identified by “Issue ID,” which MITRE uses throughout this document to reference specific issues. MITRE categorizes the issues by task and by severity rating. These categories are described in greater detail in Section 4.

Table 76. Usability Issues Complete List.

Issue ID	Task	IRS	Member 3	Member 11	Member 10	Page/Section	Issue	Severity	Count
Locate Free File 1	Locate Free File Landing Page	✓				IRS Homepage	Taxpayers had trouble navigating from IRS homepage to Free File page	High	3
Locate Free File 2	Locate Free File Landing Page	✓				Free File Landing Page	Taxpayer had difficulty navigating Free File landing page (on IRS.gov)	Medium	1
Locate Free File 3	Locate Free File Landing Page	✓				Free File Landing Page	Taxpayer did not notice the “Start Free File Now” button	Medium	1
Locate Free File 4	Locate Free File Landing Page	✓				Free File Landing Page	Taxpayer confused between finding a Free File provider and an e-file provider	Low	1
Select Offer without Lookup Tool 1	Select an Offer without the Lookup Tool	✓				Free File Software Offers	Taxpayers did not understand whether it was necessary to meet all eligibility criteria (“and” or “or”)	High	5
Select Offer without Lookup Tool 2	Select an Offer without the Lookup Tool	✓				Free File Software Offers	Taxpayers perceived too many options and were overwhelmed by information on the Free File software offers page	Medium	5
Select Offer without Lookup Tool 3	Select an Offer without the Lookup Tool	✓				Free File Software Offers	Taxpayers were confused by inconsistent references to states regarding eligibility on the Free File software offers page	Medium	5
Select Offer without Lookup Tool 4	Select an Offer without the Lookup Tool	✓				Free File Software Offers	Taxpayers expected to see an IRS.gov-related software offer	Low	7
Select Offer without Lookup Tool 5	Select an Offer without the Lookup Tool	✓				Free File Software Offers	Taxpayers misunderstood the order of Free File software offers displayed	Low	2
Select Offer with Lookup Tool 1	Select an Offer with the Lookup Tool	✓				Lookup Tool	Taxpayers assumed the lookup tool checks veracity of responses	High	5

PRE-DECISIONAL – FOR INTERNAL IRS W&I USE ONLY – NOT FOR PUBLIC RELEASE

Issue ID	Task	IRS	Member 3	Member 11	Member 10	Page/Section	Issue	Severity	Count
Select Offer with Lookup Tool 2	Select an Offer with the Lookup Tool	✓				Lookup Tool	Taxpayers selected "yes" to the Earned Income Tax Credit (EITC) question when unsure of their answer	High	8
Select Offer with Lookup Tool 3	Select an Offer with the Lookup Tool	✓				Lookup Tool	Taxpayers did not know how to answer the EITC question and wanted to leave it blank or leave the lookup tool	High	2
Select Offer with Lookup Tool 4	Select an Offer with the Lookup Tool	✓				Lookup Tool	Taxpayers did not understand information in EITC modal pop-up, specifically misreading filing status requirements	High	3
Select Offer with Lookup Tool 5	Select an Offer with the Lookup Tool	✓				Lookup Tool	In general, taxpayers do not understand information in EITC modal	High	3
Select Offer with Lookup Tool 6	Select an Offer with the Lookup Tool	✓				Lookup Tool	Taxpayers did not understand the relationship between having dependents and qualifying for EITC	High	2
Select Offer with Lookup Tool 7	Select an Offer with the Lookup Tool	✓				Lookup Tool	Taxpayer assumed incorrect criteria for EITC eligibility and did not seek additional information to confirm assumption	High	1
Select Offer with Lookup Tool 8	Select an Offer with the Lookup Tool	✓				Lookup Tool	Taxpayers were still confused about EITC after using the EITC assistant	High	2
Select Offer with Lookup Tool 9	Select an Offer with the Lookup Tool	✓				Lookup Tool	Taxpayer did not understand income limits information in the EITC modal in the lookup tool	High	1
Select Offer with Lookup Tool 10	Select an Offer with the Lookup Tool	✓				Lookup Tool	Taxpayers were confused by missing states or selecting no state at the "state return" drop-down box	Medium	6
Select Offer with Lookup Tool 11	Select an Offer with the Lookup Tool	✓				Lookup Tool	Taxpayers were confused about the purpose of the lookup tool	Medium	4

PRE-DECISIONAL – FOR INTERNAL IRS W&I USE ONLY – NOT FOR PUBLIC RELEASE

Issue ID	Task	IRS	Member 3	Member 11	Member 10	Page/Section	Issue	Severity	Count
Select Offer with Lookup Tool 12	Select an Offer with the Lookup Tool	✓				Lookup Tool	Taxpayers perceived too many options returned from the lookup tool	Low	3
Select Offer with Lookup Tool 13	Select an Offer with the Lookup Tool	✓				Lookup Tool	Taxpayers expected to see eligibility criteria returned with lookup results	Low	3
Select Offer with Lookup Tool 14	Select an Offer with the Lookup Tool	✓				Lookup Tool	Taxpayer was confused by the two questions regarding states in the lookup tool	Low	1
Select Offer with Lookup Tool 15	Select an Offer with the Lookup Tool	✓				Lookup Tool	Taxpayer was confused by the two questions regarding states in the lookup tool	Low	1
File a Return 1	Filing a Return		✓	✓		Student Loan Interest	Taxpayers were uncertain about where to enter student loan interest information	High	7
File a Return 2	Filing a Return		✓	✓		Select a Filing Status	Taxpayers were uncertain about selecting a filing status of either head of household or single	High	5
File a Return 3	Filing a Return			✓		Quick File	Taxpayers were confused about what to do once they chose the quick file option	High	3
File a Return 4	Filing a Return			✓	✓	Create an Account	Taxpayers faced difficulty creating an account password	High	4
File a Return 5	Filing a Return			✓		Health Insurance	Taxpayers were confused by the wording of the health insurance question	Medium	3
File a Return 6	Filing a Return		✓			Dependent Information	Taxpayers were confused by the question asking how many months the dependent lived with them in the U.S.	Medium	2
File a Return 7	Filing a Return		✓			Create an Account	Taxpayers faced difficulty creating an account username	Medium	3
File a Return 8	Filing a Return			✓		Use of Information Agreement	Taxpayers attempted to enter the scenario taxpayer's birthday instead of the current date	Medium	4
File a Return 9	Filing a Return			✓		Enter Information from Form W-2	Taxpayers incorrectly rounded Medicare tax withheld to the nearest dollar	Low	3
File a Return 10	Filing a Return		✓			Form W-2 Quick Entry	Taxpayers had difficulty selecting items in the Form W-2 quick entry	Low	3
File a Return 11	Filing a Return			✓	✓	Overall	Taxpayers were confused by the path or flow of information presented while filing	Low	3

PRE-DECISIONAL – FOR INTERNAL IRS W&I USE ONLY – NOT FOR PUBLIC RELEASE

Issue ID	Task	IRS	Member 3	Member 11	Member 10	Page/Section	Issue	Severity	Count
File a Return 12	Filing a Return			✓		Overall	Taxpayer questioned their filing status selection after choosing to file as Single	Low	1
File a Return 13	Filing a Return		✓			Basic Info – Life Events & Child/Dependent Care	Taxpayer confused the check box for having dependent care expenses with the check box for having a dependent	Low	1

Appendix C Recruitment and Interview Materials

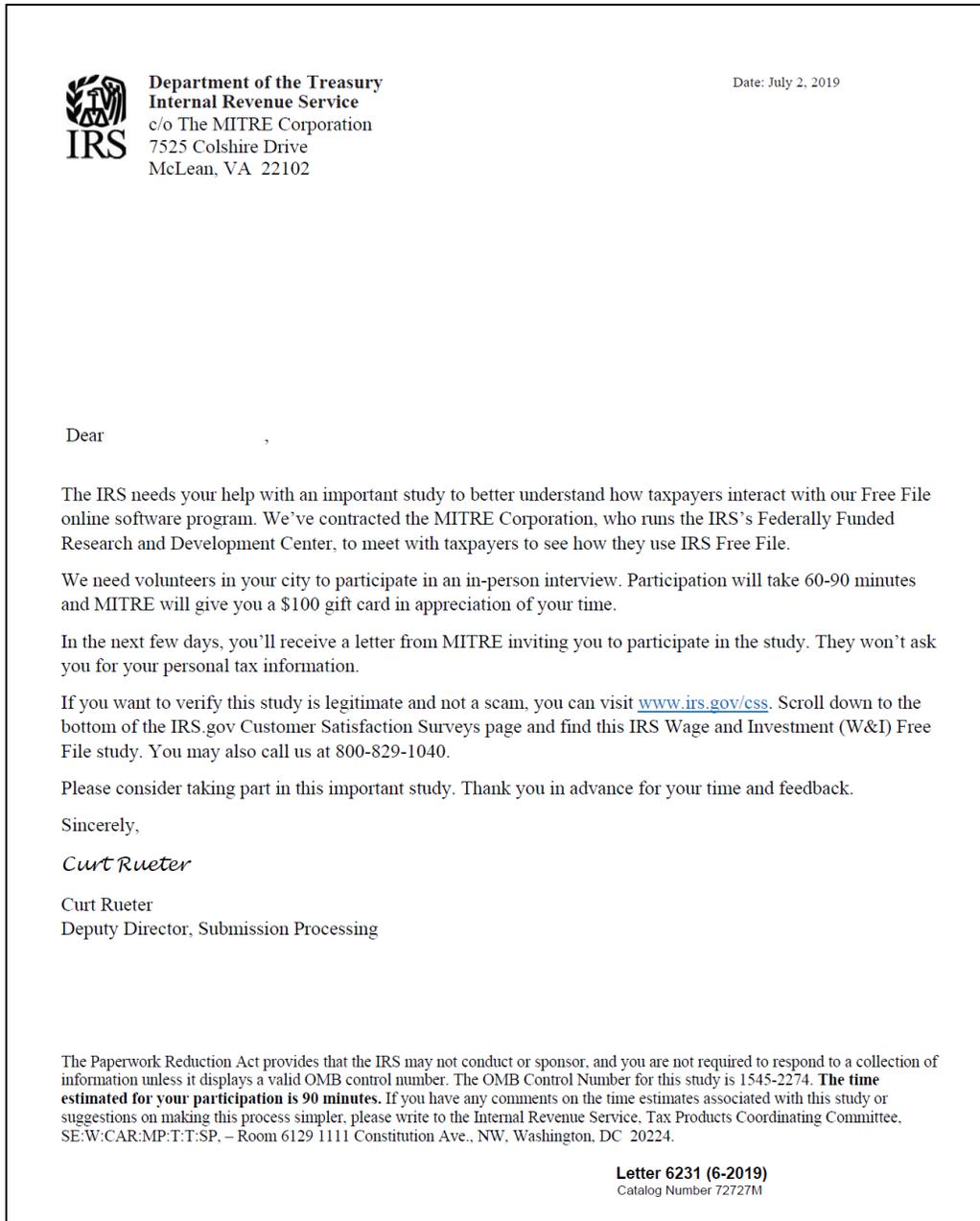


Figure 43. IRS Invitation Letter.

MITRE
7525 Colshire Drive
McLean, VA 22102

July 8, 2019

Dear _____,

In the last few days, you should've received a letter from the Internal Revenue Service (IRS) asking you to help them with MITRE's important study on the IRS Free File online software program. The MITRE Corporation is a not-for-profit company that conducts research and development for the federal government.

We invite you to participate in this study as a taxpayer who is eligible to use IRS Free File. We need volunteers in your city to participate in an in-person interview. Participants will receive a \$100 prepaid VISA gift card.

How to participate

- **Please call (571) 310-1902 or visit www.mitre.org/freefile.**
- We'll ask some questions to determine eligibility for in-person interview. We won't ask for your Social Security number or individual taxpayer identification number.
- We'll schedule a time to meet with you for a 60 to 90-minute in-person interview, if you're eligible to participate.

Why we're conducting this study

- We need your feedback to learn whether people can easily use IRS Free File online software.
- We'll use your feedback to recommend how the IRS can improve the user experience of the IRS Free File online program.

If you want to verify this study is legitimate and not a scam, you can visit www.irs.gov/css. Scroll down to the bottom of the IRS.gov Customer Satisfaction Surveys page and find this Wage and Investment (W&I) Free File study. You may also call the IRS at (800) 829-1040. We're conducting this study under Office of Management and Budget approval number 1545-2274.

Thank you for your consideration.
Sincerely,

Lucia Lykke
Lucia Lykke, Ph.D.
Lead Researcher

MITRE Study Team Members:
Jamel Morris, MITRE Project Manager
Mikhael King

The Paperwork Reduction Act provides that the IRS may not conduct or sponsor, and you are not required to respond to, a collection of information unless it displays a valid OMB control number. The OMB Control Number for this study is 1545-2274. **The time estimated for your participation is 90 minutes.** If you have any comments on the time estimates associated with this study or suggestions on making this process simpler, please write to the Internal Revenue Service, Tax Products Coordinating Committee, SE:W:CAR:MP:T:T:SP, – Room 6129 1111 Constitution Ave., NW, Washington, DC 20224.

Letter 6231-A (6-2019)
Catalog number 72738X

Figure 44. MITRE Invitation Letter.

The screenshot shows the MITRE website header with navigation links: ABOUT, CENTERS, CAPABILITIES, RESEARCH, CAREERS, PUBLICATIONS, NEWS, and a search icon. The main heading is "Online Screening Form for Taxpayers". The form content includes a welcome message, a description of the study, and eligibility criteria. It contains several required fields marked with an asterisk: First Name, Last Name, phone number, email address, zip code, and a question about receiving a letter from MITRE. There are also radio buttons for "Morning", "Afternoon", and "Evening" to indicate the best time to call. At the bottom, there is a reCAPTCHA "I'm not a robot" checkbox and a "Submit" button.

Figure 45. Screenshot of MITRE Recruitment Website.

Note: At the conclusion of recruiting, the online entry form was removed from the web page and the following notice posted, “Note: Registration is full for this study and we are no longer taking additional participants. Thank you for your interest.”



**Participant Consent Form
ADULT CONSENT TO PARTICIPATE IN A RESEARCH STUDY**

PRINCIPAL INVESTIGATOR(S): Lucia Lykke, Ph.D.; Jamel Morris, Project Manager

STUDY TITLE: IRS Free File Program Study

INTRODUCTION

We invite you to take part in a research study conducted by The MITRE Corporation (MITRE).

We want you to know that taking part in MITRE research is entirely voluntary.

You may choose not to take part, or you may withdraw from the study at any time.

Before you decide to take part, please take as much time as you need to ask any questions and discuss this study with anyone at MITRE, or with family, friends, or any of your advisers.

THE RESEARCH STUDY

1. Research Protocol

The purpose of this research is to learn how taxpayers experience the IRS Free File online software. You will be given fictitious taxpayer information and asked to complete an online tax return using this fictitious information. You will then be asked some questions about your experience. You will not be asked to provide your personal financial information. Participation in this study is expected to last 60-90 minutes.

2. Risks/ Discomforts

There are no expected risks or discomforts to the participant involved in this study.

3. General or Participant Benefits

You may receive no benefit from taking part. The research may give us knowledge that may benefit the work of MITRE and its Sponsors, including the Internal Revenue Service (IRS).

OTHER PERTINENT INFORMATION

- 1. Confidentiality.** The identities of participants will not be made known to MITRE management or to IRS employees. When results of MITRE research are reported to the IRS or other government agencies, in professional journals, or at scientific meetings, the people who take part are not named and identified. Any data used is constructed so as to preclude identifying participants.
- 2. Recording.** This interview may be recorded by the researcher with your consent. The recording will not identify you by name, and will be destroyed upon completion of this research study.
- 3. Remuneration.** As a token of appreciation, you will receive a \$100 prepaid gift card upon completion of this research interview.
- 4. Problems or Questions.** If you have any problems or questions about this study, or about your rights as a research participant, or about any research-related injury, contact the Principal Investigator, Lucia Lykke, at (703) 983-7720. Other researchers you may call include: Jamel Morris, at (703) 983-6511.
- 5. Consent Document.** Please keep a copy of this document in case you want to read it again.

Participant's Consent

I have read the explanation about this research study and have been given the opportunity to discuss it and to ask questions. I hereby consent to take part in this study.

Signature of Participant

Date

Signature of Principal Investigator/Researcher

Date

Figure 46. Participant Consent Form.

Free File Taxpayer Testing – Selection Scenario 1

Name: Isaac Washington

DOB: June 30, 1967 (52 years old)

Employment: Sales Manager

Marital Status: Single

State of residence in 2018: Massachusetts

State return to file: Massachusetts

You are single with one dependent. You are not in the military and do not have a spouse in the military.

Your adjusted gross income (AGI) in 2018 was \$49,000.

Please find a Free File offering to file your federal return for free using the information above.

Figure 47. Selection Scenario 1.

Note: All scenarios used fictitious name, address and taxpayer information for the purpose of this study's usability testing. Any resemblance to actual persons, living or dead, is purely coincidental.

Free File Taxpayer Testing – Selection Scenario 2

Name: Rita Meyer

DOB: April 2, 1976 (43 years old)

Employment: Outreach Coordinator

Marital Status: Single

State of residence in 2018: Texas

State return to file: None

You are single with no dependents. You are not in the military and do not have a spouse in the military.

Your adjusted gross income (AGI) in 2018 was \$33,000.

Please find a Free File offering to file your federal return for free using the information above.

Figure 48. Selection Scenario 2.

Note: All scenarios used fictitious name, address and taxpayer information for the purpose of this study's usability testing. Any resemblance to actual persons, living or dead, is purely coincidental.

Free File Taxpayer Testing – Filing Scenario

NOTE: DO NOT SUBMIT THIS FICTITIOUS RETURN AT THE END OF THE SCENARIO.

Name: Christine Coleman
DOB: July 30, 1990 (28 years old)
SS#: 011-01-8948
Employment: Sales Representative
Marital Status: Single

Address: 1820 Pine Rd., Houston, TX 77008
Bank information: Routing #xxxx00059, Checking Account xxxx410201

You are single with one dependent, your daughter Stephanie. No one else can claim you as a dependent. You are not in the military or a veteran.

When it is time to file your 2018 income tax return, you file your return for yourself. In 2018, you and your daughter had full-year health care coverage through your employer. You lived in the state of *Texas* for the entire year and are a U.S. Citizen.

On your return, you claim the standard deduction for a single taxpayer.

Your daughter Stephanie is your dependent. She lived in the house with you all year and you supported her during the tax year. You and Stephanie's other parent have an agreement that only you list her as a dependent. No one else lives with you and Stephanie. Your parents helped you out by paying for more than half of the cost of upkeep on your home in 2018.

Name	SS#	DOB	Relationship
Stephanie Smith	459-47-2658	04/20/2016	Daughter

In 2018, you were employed and received the following income:

- Your employment income from *American Standard Sales* (Form W-2).

You have no other forms of income for the tax year.

You also paid student loan interest in 2018.

- During 2018, you paid \$800 in interest on your qualified student loan to *EdFinancial Services* (Form 1098-E)
- You determined you can deduct the full \$800 of the interest paid on your tax return.

Please complete your online tax return with the information above and the supplemental documentation provided to you.

Figure 49. Filing Scenario.

Note: All scenarios used fictitious name, address and taxpayer information for the purpose of this study's usability testing. Any resemblance to actual persons, living or dead, is purely coincidental.

Free File Program User Experience Questionnaire

1. This Free File system’s capabilities meet my requirements.

1 2 3 4 5 6 7
Strongly Strongly
Disagree Agree

2. Using the Free File software system is a frustrating experience.

1 2 3 4 5 6 7
Strongly Strongly
Disagree Agree

3. The Free File software system is easy to use.

1 2 3 4 5 6 7
Strongly Strongly
Disagree Agree

4. I have to spend too much time correcting things with this Free File software system.

1 2 3 4 5 6 7
Strongly Strongly
Disagree Agree

Figure 51. User Experience Questionnaire.

MITRE

Date:

I, _____ (*participant's full name*), confirm that I received a \$100 prepaid VISA gift card as an honorarium for my participation in the MITRE Free File research study.

VISA card number (*last 4 digits on back of card*)

Participant's Signature: _____

MITRE Researcher's Signature:

The MITRE Corporation

Figure 52. Honorarium Receipt.

IRS Free File Program Usability Testing Screener and Phone Guide

Intro

Thank you for your call, this is [NAME] with the MITRE Corporation.

i. Did you receive a letter about the Free File Program study that we are doing for the IRS?

Yes **[Record in Spreadsheet]**

No **[If no, determine how participant learned of study/why calling]**

ii. How did you learn about this study?

[If answer to question i is no]:

We appreciate your interest in our independent study. We are trying to understand a very specific group of taxpayers and sent letters to members of that group. If you did not receive a letter, you are not eligible to participate. Thank you for calling. Have a nice [day/evening].

[If answer to Question i is yes]:

We are conducting an independent research study for the IRS to gather feedback from taxpayers like you, and we are traveling to your area to conduct this research. We are looking for eligible volunteers to participate in this study. Eligible volunteers will participate in a 60- to 90-minute in-person interview at a public location near you. If eligible, you will receive a \$100 Visa gift card as a token of appreciation for your participation. We will not ask you for your Tax ID number or Social Security Number during this call, or during the in-person interview.

Do you have about five minutes to answer some questions, so we can verify your eligibility to participate in the study? If eligible, we will go ahead and schedule an in-person interview.

Screener

1. What is your full name?

[Record in Spreadsheet]

2. What is the best contact phone number for you?

[Record in Spreadsheet]

3. Do you have an e-mail address that you would like to use for any future correspondence about the study?

[Record in Spreadsheet]

4. What is the zip code of your primary residence?

[Record zip code on spreadsheet]

Within set zip code limits of travel location

Outside of set zip code/city limits – **Terminate:** I'm sorry, we are only conducting interviews within a certain set of zip codes, so you don't qualify for this study. Thank you for your time. Have a good [day/evening].

PRE-DECISIONAL – FOR INTERNAL IRS W&I USE ONLY – NOT FOR PUBLIC RELEASE

5. We will be conducting sessions at your location between **July 22** and **July 26**. We are looking for participants to meet us at **Truman College** for a 60 to 90 minute interview. Are you available to meet us at **Truman College** during this time frame?

Yes – Continue

No – **Terminate**: Thank you for your time. Have a good [day/evening].

6. Within the last two tax years (2017, 2018), have you filed your federal tax return through the IRS Free File Program?

Yes – Continue to next question

No – **Terminate**: I'm sorry, we are only looking for people who have previously filed through the IRS Free File Program. Thank you for your time. Have a good [day/evening].

Not sure – Ask caller if they filed for free or if they paid any fees to file.

- **If they filed for free but not sure if it was through Free File, continue to next question.**

Record "Not Sure" in Spreadsheet Column H and record what they say in Column I.

- **If they paid any fees, terminate.** We are looking for participants who filed through the IRS Free File Program. Thank you for your time. Have a good [day/evening]. **Record "Not Sure" in Spreadsheet Column H and record what they say in Column I.**

7. Would you say that **you are the adult in your household who is most familiar with the preparation and filing of your federal income tax returns?** [if no] Would you say you are equally familiar as the adult most familiar with the preparation and filing of your federal income tax returns?

Yes – Continue

Equally familiar – Continue

No – **Terminate**: I'm sorry, we are only conducting interviews with people who are familiar with their tax form. Thank you for your time. Have a good [day/evening].

8. What was your filing status for tax year 2018?

Single

Married Filing Joint

Married Filing Separate

Head of Household

Widow/Widower

9. What is your age?

under 18- **Terminate**: Thank you for your time. Have a good [day/evening].

18-30

31-55

56-68

69-81

82+

10. Is your current household's annual income less than \$15,000 a year?

Yes – SKIP TO NEXT SCREENER QUESTION

No

Is your current household's annual income between \$15,000 and \$35,000 a year?

Yes – SKIP TO NEXT SCREENER QUESTION

No

PRE-DECISIONAL – FOR INTERNAL IRS W&I USE ONLY – NOT FOR PUBLIC RELEASE

Is your current household's annual income between \$35,000 and \$50,000 a year?
 Yes – SKIP TO NEXT SCREENER QUESTION
 No

Is your current household's annual income between \$50,000 and \$75,000 a year?
 Yes – SKIP TO NEXT SCREENER QUESTION
 No

Is your current household's annual income between \$75,000 and \$90,000 a year?
 Yes – SKIP TO NEXT SCREENER QUESTION
 No

Is your current household's annual income more than \$90,000 a year?
 Yes
 No

11. What is the highest degree or level of school you have completed?
 No schooling completed
 Completed schooling through Grade ____ .
 Received High School Diploma, GED or alternative credential for high school graduation
 Associate's Degree
 Bachelor's Degree
 Master's Degree (for example: MA, MS, Meng, MEd, MSW, MBA)
 Professional degree beyond a bachelor's degree (for example: MD, DDS, DVM, LLB, JD)
 Doctorate degree (for example: PhD, EdD)

12. Did you or your spouse receive military pay in 2018?
 Yes
 No
 Don't know

Thank you for taking time to answer these questions. Please hold for a moment while I verify your eligibility.

Thank you for waiting. You are eligible to take part in our study. Participation requires that you attend an in-person interview at a public location where MITRE researchers are conducting the interviews. At the in-person interview, you will receive a \$100 VISA prepaid gift card as a thank you for participating in this important study. Of the following time slots, which works best for you? **[Read list of available time slots from tracking spreadsheet, record in spreadsheet and confirm follow up contact information].** We will contact you again before the interview to confirm your participation. Have a great day!

Below are the embedded document that contains the usability testing interview protocol described in Section 2.5.



Usability Testing
Protocol.docx

Appendix D Detailed Population and Sample Selection Characteristics

Table 77. Characteristics of Paper Filing Population.

	U.S. Free Filer Population, Tax Year 2018	Free Filer Population in Selected Zip Codes, Tax Year 2018	Final Letter Sample Characteristics, Tax Year 2018
AGI (Dollars)			
Mean	23,247	29,177	29,398
Median	20,383	27,964	28,334
Wage Income (Dollars)			
Mean	21,108	27,507	27,636
Median	18,079	26,728	27,437
Age (Years)			
Mean	37.9	34.1	34.0
Median	32.0	29.0	29.0
Filing Status (Percentage)			
Head of Household	17%	6%	6%
Married Filing Jointly	11%	5%	5%
Married Filing Separately	2%	1%	1%
Single	71%	89%	88%
Widow/er	0%	0%	0%
EITC Claims (Dollars)			
Mean	565.9	176.7	171.5
Median	0.0	0.0	0.0
Zip Code (Percentage)			
60613	--	16%	16%
60618	--	17%	18%
60625	--	16%	16%
60640	--	19%	19%
60657	--	19%	20%
60660	--	12%	12%
Total N	2,343,235	4,106	2,500

Table 78. Software Providers Used by Full Free File Population, Chicago Population, and Final Letter Sample, TY 2018.

	U.S. Free Filer Population, Tax Year 2018	Free Filer Population in Selected Chicago Zip Codes, Tax Year 2018	Final Letter Sample Characteristics, Tax Year 2018
Member 9	0%	0%	0%
Member 1	3%	3%	3%
Member 12	2%	2%	2%
Member 8	3%	6%	7%
Member 7	1%	1%	1%
Member 2	27%	37%	37%
Member 10	42%	34%	34%
Member 5	1%	2%	1%
Member 4	5%	2%	2%
Member 3	6%	5%	5%
Member 6	7%	5%	4%
Member 11	2%	2%	3%
Unknown	0%	0%	0%
Total N	2,343,235	4,106	2,500

Appendix E Acronyms

AGI	Adjusted Gross Income
CDW	Compliance Data Warehouse
EIN	Employer Identification Number
EITC	Earned Income Tax Credit
FFA	Free File Alliance, LLC
IRS	Internal Revenue Service
ISO	International Organization for Standardization
MOU	Memorandum of Understanding
OMB	Office of Management and Budget's
SEQ	Single Ease Question
SUS	Systems Usability Scale
TIN	Taxpayer Identification Number
TY	Tax Year
UMUX	Usability Metric for User Experience
W&I	Wage and Investment