Human Centered Design & Engineering - 517 - Winter 2019
Victor Allen, Colleen McDevitt, Kevin Philbin & Cyndi Thompson

USABILITY STUDY REPORT
KING COUNTY SENIOR TAX EXEMPTION

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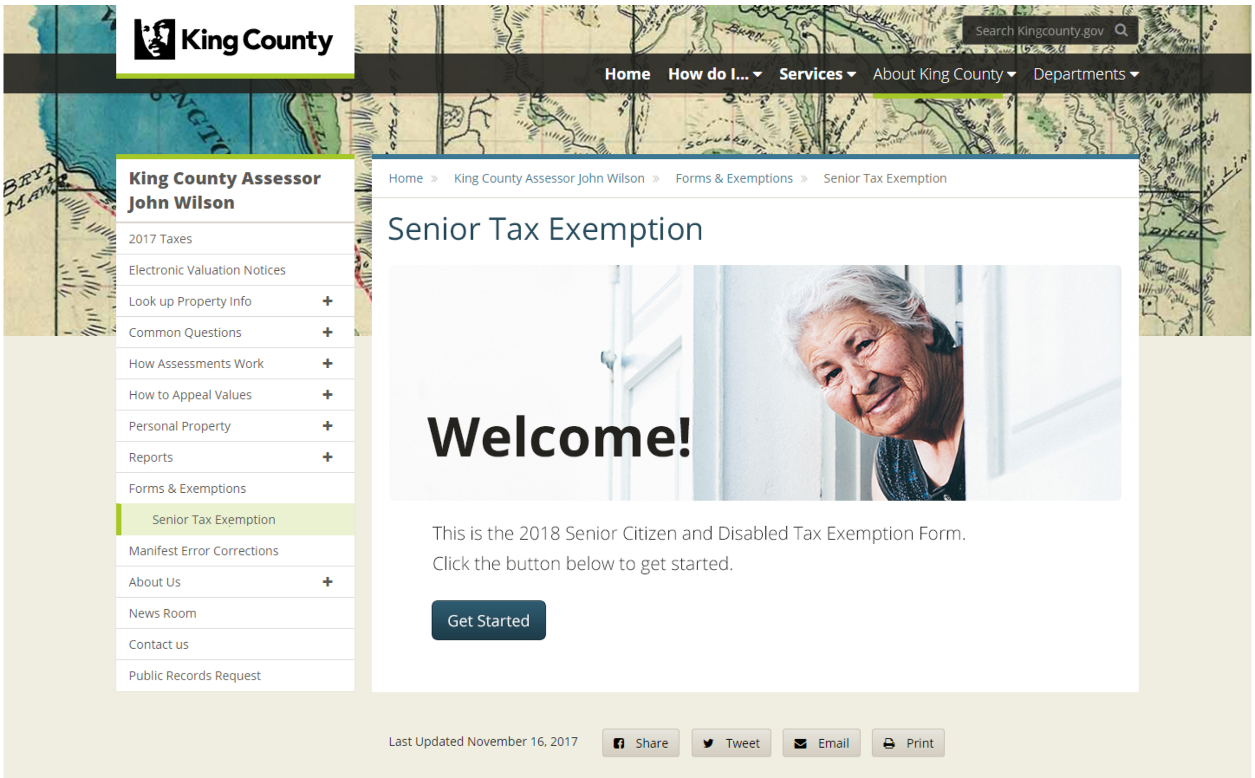

Introduction

The King County Assessor's Office wanted to digitize their Senior Property Tax Exemption form, a paper form that let’s low-income seniors and disabled residents apply for an exemption on their property taxes. They hired a local development firm to create a proof-of-concept to show how it might integrate into the current King County website. This demo form is the subject of the following usability study.

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EXECUTIVE SUMMARY

Purpose

We evaluated a proof-of-concept web form that will let qualifying senior homeowners in King County apply for exemptions on their property tax. It is intended to replace the current paper form, as well as allow residents to see if they qualify for the exemption.

Key Research Questions

- How easily and successfully do participants know if they qualify?
- What obstacles do participants encounter while using the online tax exemption form?
- Are participants able to complete the submission in one session?

Participants

The test included 5 senior participants ranging in age from 59 -77, residing in King County. We recruited a mix of genders, homeowners and renters, and with varying experience and comfort with technology.

Results, Findings and Recommendations

Participants were given 6 tasks, each representing a phase in the application process. Our test uncovered three primary usability issues:

1. **None of our participants could complete all tasks in the form.**
   We recommend: Clear instructions for how to complete the form by mail or online.
2. **None of them knew if they qualified throughout the process.**
   We recommend: Starting the form with a pre-qualification test.
3. **Unstated document requirements drove abandonment.**
   We recommend: Providing requirements up front and estimated time to complete.

STUDY OBJECTIVE

The purpose of this usability study was to perform a comprehensive assessment of the form's usability to its target user group of seniors King County residents. With this usability study, we aimed to determine if participants are easily and effectively able to accomplish the key steps in the exemption application process. We established that the goals of the new, online form were primarily to:

I. **Maximize the number of successful applications by qualifying users**
II. **Minimize the applications submitted and time spent by non-qualifying users**

Research questions

1. How easily do participants know if they qualify for the tax exemption?
2. Do participants understand how to provide the necessary information requested by the tax exemption form? Do they understand what information they need ahead of completing the form?
3. Do participants get a sense for the time and effort required to fill out the form? Do they know their progress throughout the process?
4. What obstacles do participants encounter while using the online tax exemption form?
5. Are participants able to complete the submission in one session? If not, are they able to suspend the session and come back?
6. Do participants understand the benefits that result from filling in the form?
7. Do they learn next steps in receiving their exemption?

METHODS

Recruitment

Target users of the tax exemption form are King County homeowners over the age 61. There are other qualifying elements to the form, including income, but for the purposes of our testing we focused our recruiting by age. Participants did not need to have extensive computer experience, though a few did. We recruited from our personal networks. To protect privacy, we provided fake information for participants to use throughout the study, including income, address, and tax documentation. We also provided chocolate as an incentive to participants at the close of their session.

Procedure and Testing Logistics

Testing equipment included a 2 laptops and a mouse so participants wouldn't be forced to use a touchpad. The moderator, participant and notetaker sat together at a table with a laptop in a cozy apartment. Around the corner, two observers watched the sessions using a Zoom meeting, which was also used for recording video and audio, on the second laptop.

Data Collection and Analysis

During the test, the notetaker and the moderator recorded notes relating to the use of each task and interface element or piece of copy on a pre-formatted form that can be found in Appendix E. The observers recorded quotes and observations with timestamps on sticky notes and placed them on printouts of relevant screens.

PARTICIPANTS

Seniors in King County

Participant Demographics and Relevant Experience

Participant	Age	Gender	Occupation	Web Access	Web Usage	Tax Preparation
1	61	F	Former restaurant owner	Smart phone	Email, videos (YouTube), search	Prepares own taxes
2	59	F	IT Administrator for NW non-profit	Smart phone	Email, research, shopping, banking	Files online, uses multiple tax prep applications
3	66	M	Maintenance Supervisor	Laptop	Email, shopping, work research	Uses a tax prep service, formerly self-filed
4	77	F	Retired Clinical Nutritionist	Desktop, no device	Online banking and bill pay	Prepares taxes and mails paper copies
5	63	F	Business Analyst (aerospace & travel)	Device, Library	Buys everything, social media, TV	Hired a tax pro, previously self-filed for 15 years

FINDINGS & RECOMMENDATIONS

Summary of Findings

A small number of significant, but solvable issues were found. Despite these issues, the proof-of-concept was successful in demonstrating the value of an online application for this purpose.

Participants were receptive to engaging with the tax exemption program online, but encountered difficulty completing the application in full. Two participants expressed a preference for a mail-based option for submitting the final application materials.

Participants encountered only minor issues with the application UI itself. As shown below, the obstacles participants experienced were focused on document handling, feedback, and communication of requirements.

Severity	Key Issues	Principle Recommendations
Critical	No participants successfully completed the application due to issues with uploading documents	Provide clear instructions for how to complete the application by mail or online
Critical	Participants did not know if they qualify, during or after completing application	Pre-qualify users before they begin the application process
Serious	Unstated document requirements frustrated users and drove abandonment	Provide users clear requirements and estimated time-to-complete before they being the application process.

We will discuss these issues in more detail below.

Severity Scale

Our results use a 3-level scale to measure the severity of issues, as described below. Our scale takes into account the goal of preventing submission by ineligible users, so in some cases task completion is treated as a critical error.

Severity	Description
Critical	Participants were unable to complete a critical task or were able to complete a critical task they were not eligible to complete. We recommend that the application not be released until all critical issues have been addressed.
Serious	Participants were able to eventually complete tasks, but with complications or frustrations that had to be overcome. We recommend that serious issues be addressed as soon as possible, once critical issues have been addressed.
Minor	Participants were able to complete tasks, but with a minor nuisance or delay. We recommend minor issues be addressed as time and resources permit.

Successes

Despite some critical issues, the proof-of-concept was successful in demonstrating the value of an online application to the program.

Participants experienced no major issues in interaction with the application's form elements or other controls. Overall, they were complimentary of the design (especially in contrast to the existing paper form) and were inclined to use such an online tool if it were to be made available.

- **5 of 5** participants considered the site to have a pleasing and clear design.
- **3 of 5** participants said they would like to use an online tool to apply.
- **2 of 5** participants said they would like to use an online tool to check if they qualify before submitting their application and documents by mail.
- **3 of 5** participants would recommend this application to friends.

Participants Comments

"It's visually nice, I like looking at it. It's nice to see they have an old person who doesn't look like the youngest possible old person." -- Participant 4 (regarding the lady in the opening photo)

"The web form is good, but communication needs work." -- Participant 2

"Kudos to the designer" -- Participent 5 (regarding the marital status section the changed field options for different choices)

Primary Usability Issue 1

No participants successfully completed the application due to issues with uploading documents and security concerns

Severity: Critical

Participants fell into two, overlapping, groups with regard to the document upload section of the application: those that were unable to complete the document submission due to lack of experience in uploading documents from a computer and those that chose not to for security concerns.

- **4 of 5** participants would not have had digital documentation available under normal circumstances.
- **3 of 5** participants could not scan documents for uploading, and would not know how to seek scanning assistance.
- **3 of 5** participants would choose not to upload documents for security concerns. This included the two participants with the higher digital literacy.
- However, **2 of 5** participants were comfortable with photographing documents from previous experience with this process for online banking (depositing checks, etc.).
- Important to note: only **1 of 5** participants noticed the instructions for redacting sensitive information from provided documents.

Participant Comments

“When I was at Social Security this is what killed me, right here. I don’t even know how to upload anything, you know?” -- *Participant 3*

“It was a struggle to upload things. My gut reaction is to put it in the mail.” -- *Participant 4*

“How would I upload it? I wouldn’t know.” -- *Participant 1*

“I’m worried about my info. What did I just do?” -- *Participant 2*

Recommendations

- **Provide alternate methods for submitting the application and required documentation, particularly via regular mail.** Participants generally preferred applying online, but preferred to submit documents via the mail (or in-person). Providing clear options that allow a hybrid approach would be easier for users.

- **Generate a printable version of the completed application that is suitable for mailing.** One hybrid approach as mentioned above would be to produce printer-friendly output from the application that could be mailed, along with the required documentation. This could also include explicit instructions for preparing documents (such as SSN redaction).

- **Provide explicit privacy and security information regarding information handling.** The lack of clear descriptions of how provided documents would be stored, retained or shared caused users to lack confidence in the application and resistant to providing them. Providing clear links to this information could increase usage of this feature by experienced users.
- **Allow users to photograph documents and submit images via their phones.** Given the number of participants that use phones for internet access, and their relative comfort in using them to capture documents, this option for document submission is worth exploring.

- **Provide additional help or references to services for users to digitize documents.** Very few of the participants had access to the required documentation in a digital format. Formal assistance (and potentially in-person services such as scanning etc.) would likely increase the success rate for a completely digital application process.

Primary Usability Issue 2

Participants do not know if they qualify, before, during or after completing the application

Severity: Critical

The application provided insufficient feedback for participants to understand whether they qualified for the exemption program. This issue is set as “critical” because the application allows some users that do not qualify to complete the application.

- **5 of 5** participants were unable to determine if they qualify.

- There are three opportunities to qualify users (parcel, age and income). These are sections of the application where feedback would have the most effect.
    - **0 of 3** provide explicit feedback to users regarding qualification.
    - **2 of 3** provide feedback as validation errors. While these prevent further progress, they are presented as incorrectly input information rather than correct, but disqualifying information.
    - **1 of 3** allows users to continue even if they do not qualify. Users are able to complete the application when reporting higher income than is eligible for the tax exemption.

Participants Comments

“I still don’t know if I qualify. I’d be banging my head!” -- *Participant 2*

“It said I qualify, now it says I don’t! All of a sudden, I don’t know anymore.” -- *Participant 4*

“Zero personal info until I qualify. That’s how I think it should be done.” -- *Participant 5*

Recommendations

- **Allow users to pre-qualify before beginning the application.** This could range from clearly documenting the requirements, to a short survey, to a more elaborate calculator that includes estimated savings from the program, etc.

- **Describe qualification requirements at start.** No user should begin the application without at least a basic understanding of whether they qualify. The best way to prevent ineligible users from wasting time is to have them self-select out of the process entirely.

- **Stop the application process and provide obvious feedback if user submits correct but disqualifying information.** If a user enters information that disqualifies them from the program, presenting them with clear feedback and halting the application will prevent wasted effort. Presenting this feedback differently than errors, will prevent negative reactions from users.
- **Reduce ambiguity of instructions related to qualifying information.** Instructions and feedback that cannot be misinterpreted as qualification will prevent unmet expectations from users.
- **Notify seniors by mail if they might qualify.** To increase participation in the program, we recommend notifying potential participants by mail, possibly as part of their property value assessment postcard.

Primary Usability Issue 3

Unstated document requirements frustrated participants and drove abandonment of the application

Severity: Serious

The application does not provide sufficient context for the required effort or information needed to complete the form, and this lead to frustration for the majority of participants. Participants did not react positively to surprises during task completion. This issue was not sufficient to prevent completion, but two participants would have abandoned the application.

- **3 of 5** participants said they would have abandoned the application before reaching the documentation section.
- **2 of 5** participants were unpleasantly surprised by requests for sensitive information while completing the application.
- **4 of 5** participants requested that information requirements be provided at the start.

Participants Comments

"I'd read that and say 'no.' I'd email this about income sources that aren't calculated in form. I'd stop right here" -- *Participant 2*

"Little things are enough to rock my world… how long is this going to take?" -- *Participant 1*

Recommendations

- **Describe qualification requirements at the start.** No user should begin the application without at least a basic understanding of whether they qualify. The best way to prevent ineligible users from wasting time is to have them self-select out of the process entirely.
- **Provide a list of required information and documents up-front, so that users can gather the information they need.** Successful completion of the application requires information that users would not necessarily have on-hand. Including a checklist at the beginning will reduce abandonment by users that stop to gather documentation (or give up).
- **Provide an estimate of the time required to complete the application.** Users that abandon the application because they run out of time (or believe they will run out of time) may not return. Providing time estimates will allow users to begin the

application when they have sufficient time to complete it or encourage users to continue if they have already begun.

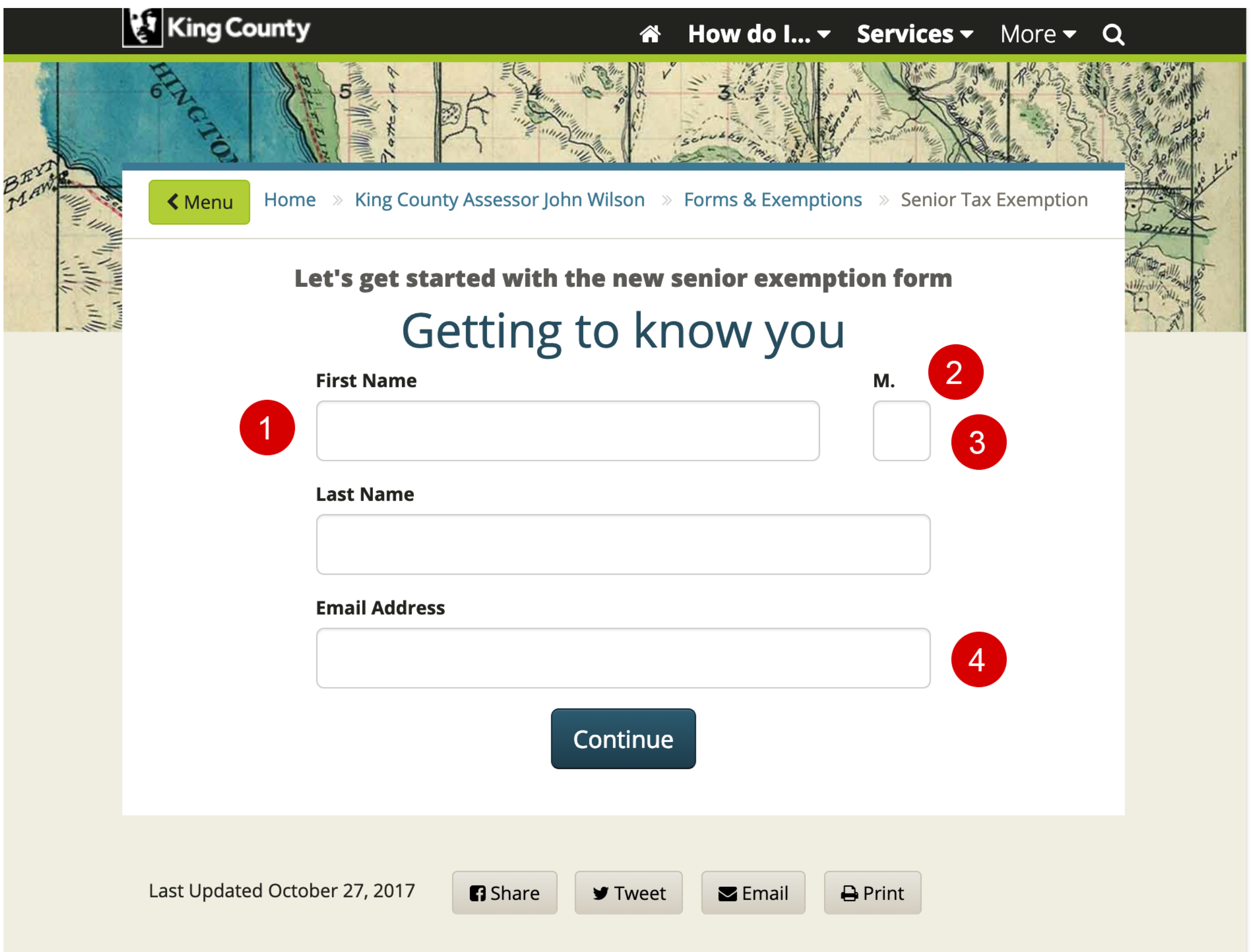
- **Provide detailed instructions and help documents.** In addition to more explicit instructions for filling out the application, we recommend separate documents for special topics (such as properties in a trust, tax information not included in the tax form, and preparation of digital documents).
- **Increase prominence and clarity of save and resume instructions.** While the application has the ability to suspend and resume, users are not informed of this feature until they have already reached the end of the application without supplying documents. This is a feature that could greatly reduce the frustration of gathering and preparing the information required to submit the application and should be included at the beginning of the process.

Secondary Usability Issues (Severity: Minor)

There were a number of UI issues that caused participants some confusion or frustration, but were ultimately not blocking.

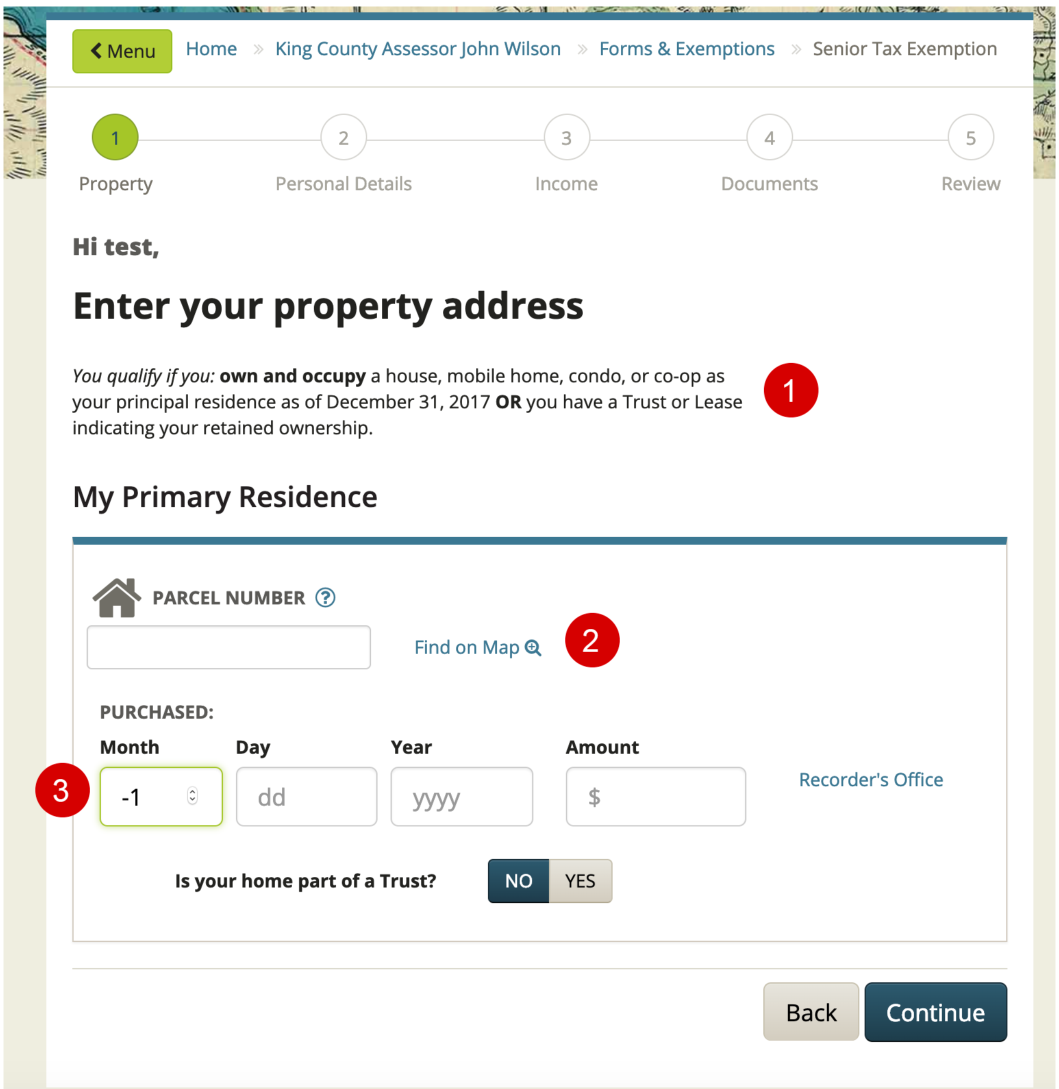
<u>Task 1: "Getting to Know You" screen</u>

1. Upon arriving on this screen, the first field was not focused on. One user started typing before realizing they weren't typing into the field (issue across screens).
2. Not all users were confident they knew what the "M" label stood for, but were able to guess "Middle Initial" correctly.
3. Some letters will get cut off on smaller screen sizes.
4. One user added a space after her email and the system would not validate it.



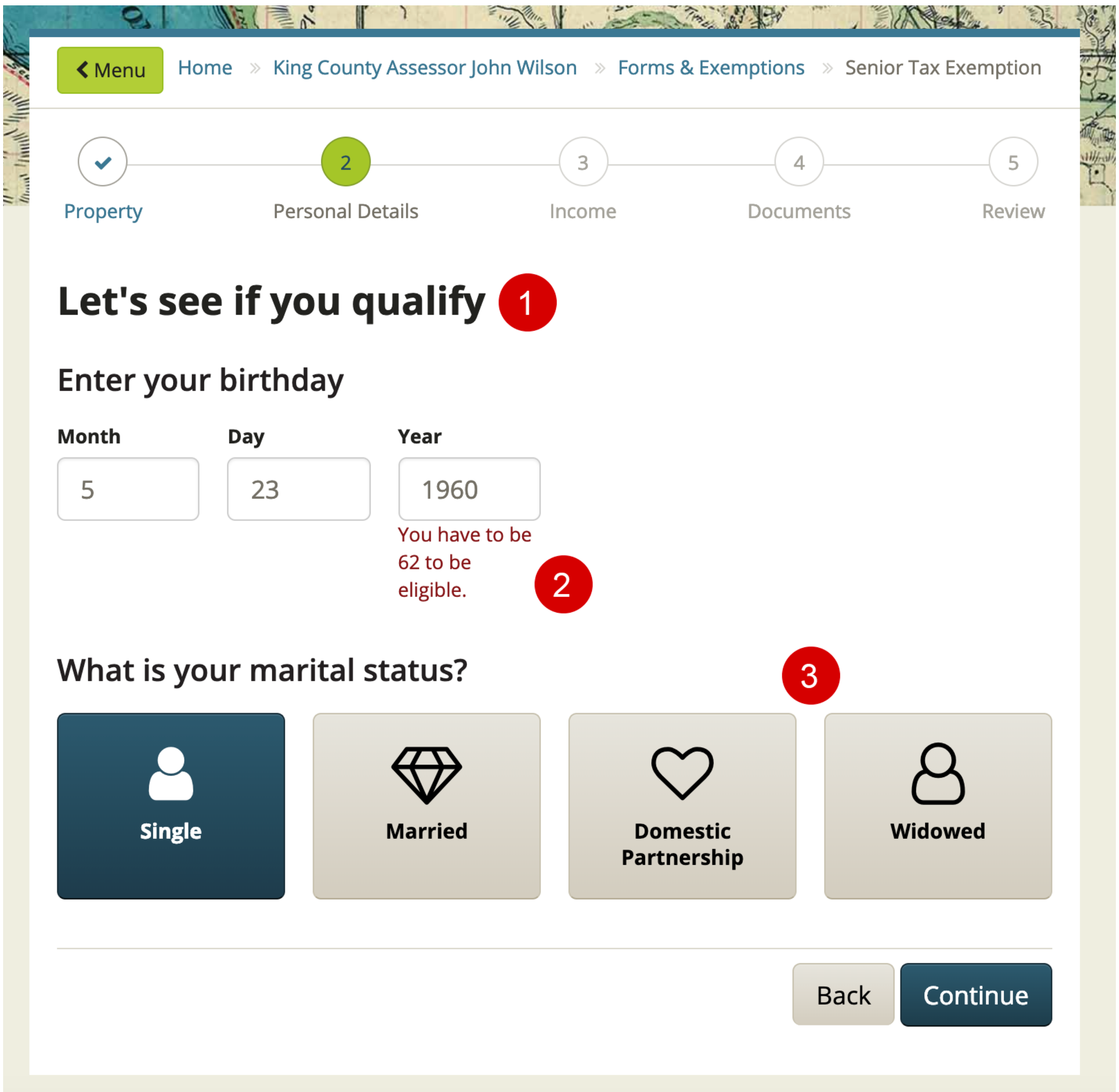
Task 2: “Enter Your Property Address” screen

1. Explanatory text was small enough that some participants had to lean forward, squint, or put on their glasses (issue across screens).
2. The “Find on Map” link caused some confusion when it opened a new tab. Participants were not sure how to get back the form on the first tab. One participant thought the number might carry over to the original form automatically rather than her having to copy and paste it over.
3. The integer fields default up/down arrows caused confusion either because they were too small or because they added negative numbers to the field (issue on other screens).



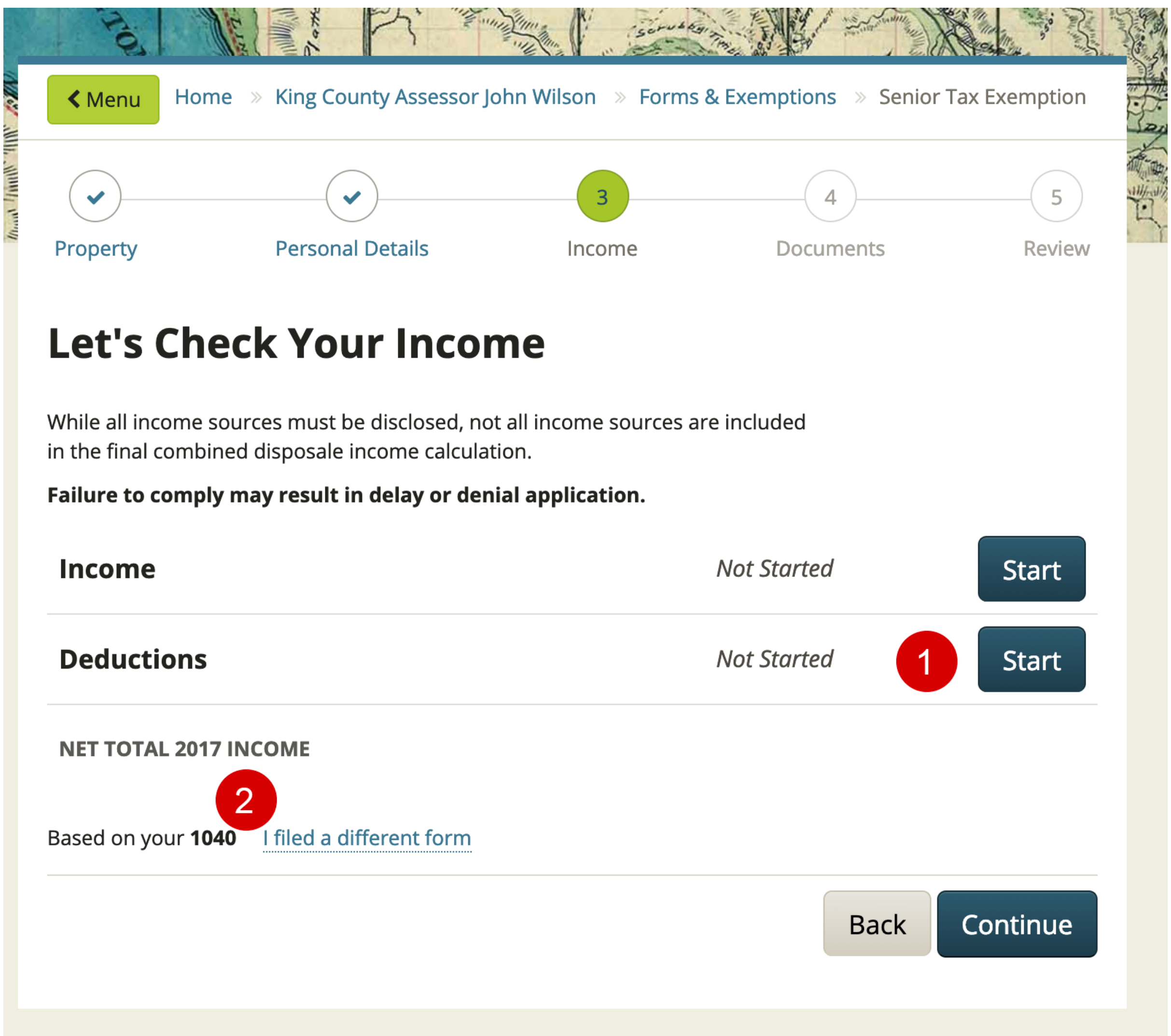
Task 3: “Let’s See if You Qualify” screen

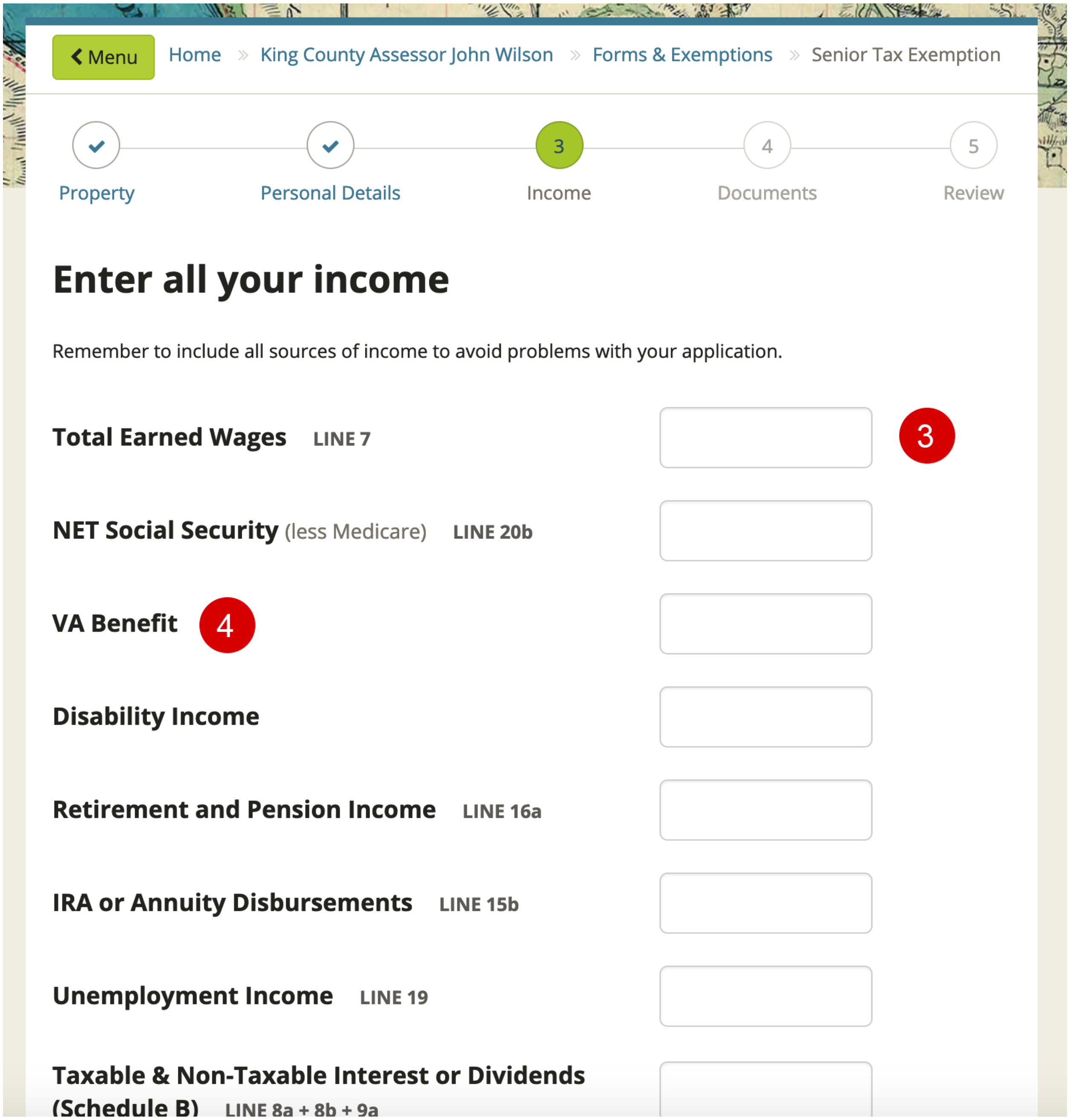
1. The title was confusing, since most screens seem to check if participants qualify.
2. This style of inline error message that tells participants they don’t qualify after having already spent some time filling out the form seemed neither obvious or sensitive enough.
3. There was some question as to the appropriateness of these icons. Widow as a hollow person seemed a bit insensitive. The diamond for married caused some confusion as well.



Task 4: "Let's Check Your Income" screens

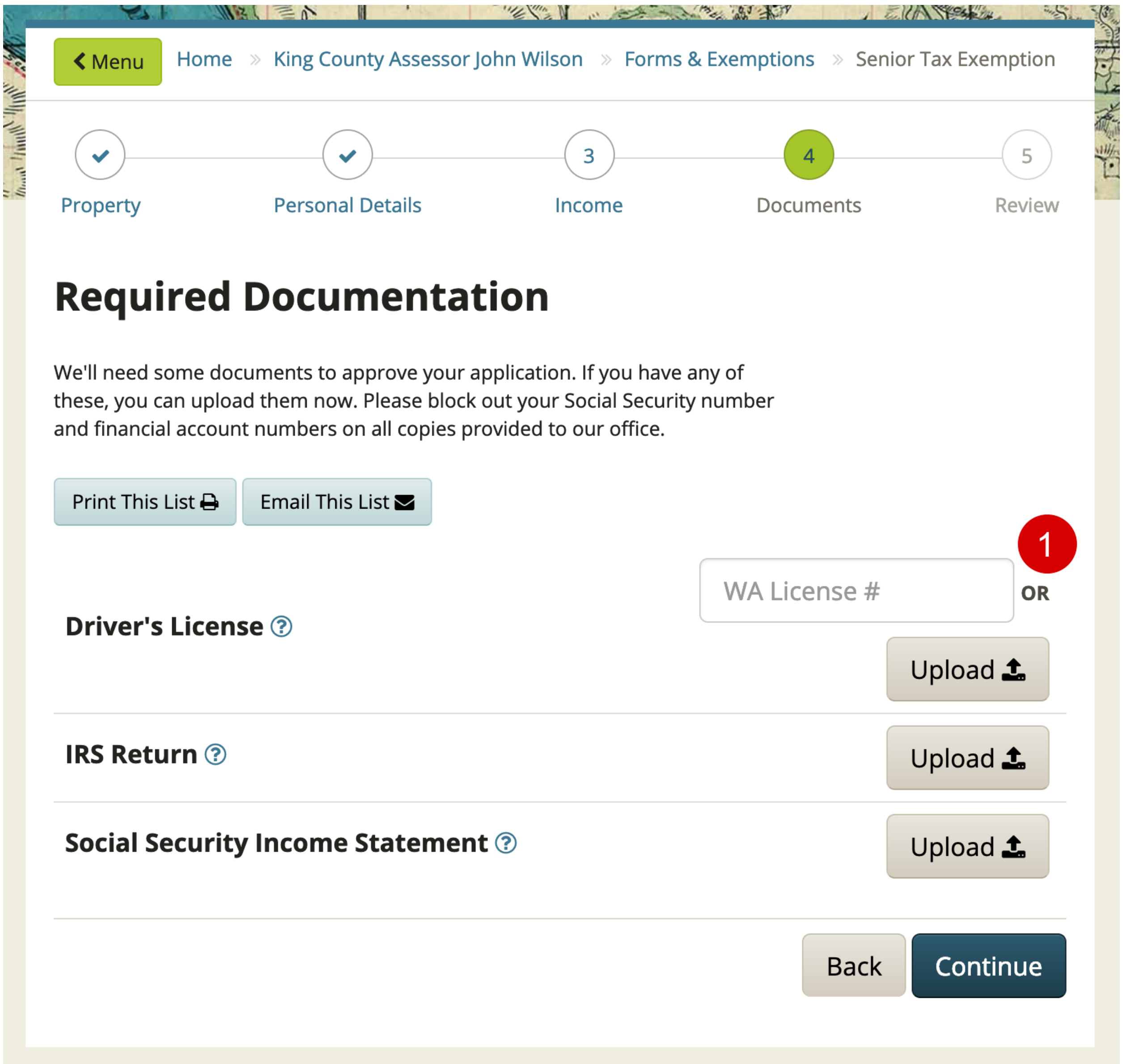
1. There is a bug in the deductions start button. It did not change to "Edit" after the participant entered their information.
2. One participant misinterpreted the link that lets you go back and change your form type. She didn't understand that the label and link were connected.
3. Participants were not sure if they could skip fields that they had no income to enter for, and would often end up entering a 0 in every one of those fields before moving to the next screen.
4. Participants appreciated that the line numbers helped them find the fields on their tax form, however they weren't sure what to do with the fields that did not have line numbers.

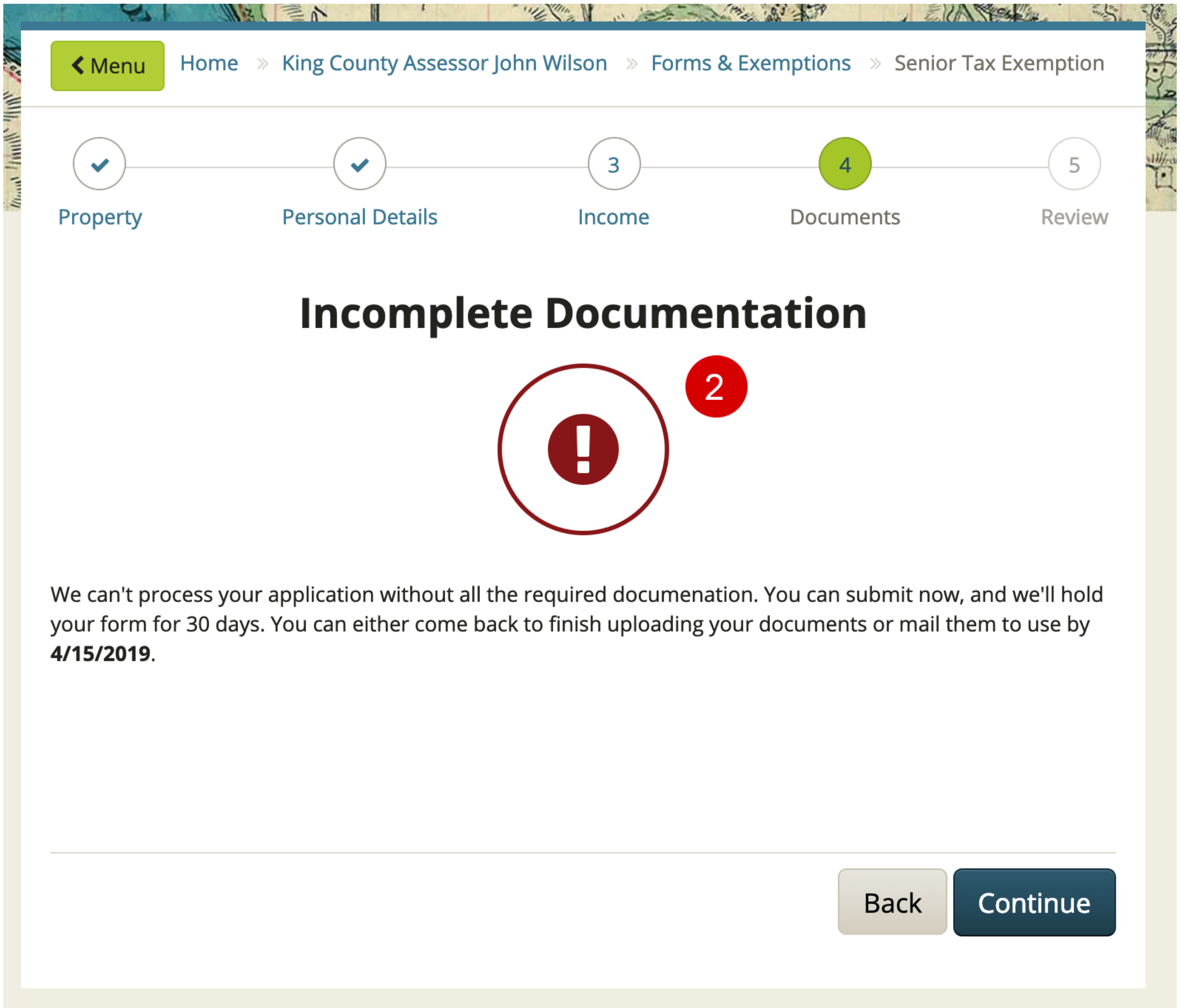



Menu
Home
King County Assessor John Wilson
Forms & Exemptions
Senior Tax Exemption
Property
Personal Details
3
Income
4
Documents
5
Review
Enter all your income
Remember to include all sources of income to avoid problems with your application.
Total Earned Wages LINE 7
3
NET Social Security (less Medicare) LINE 20b
VA Benefit
4
Disability Income
Retirement and Pension Income LINE 16a
IRA or Annuity Disbursements LINE 15b
Unemployment Income LINE 19
Taxable & Non-Taxable Interest or Dividends (Schedule B) LINE 8a + 8b + 9a

Task 5: "Required Documentation" screens

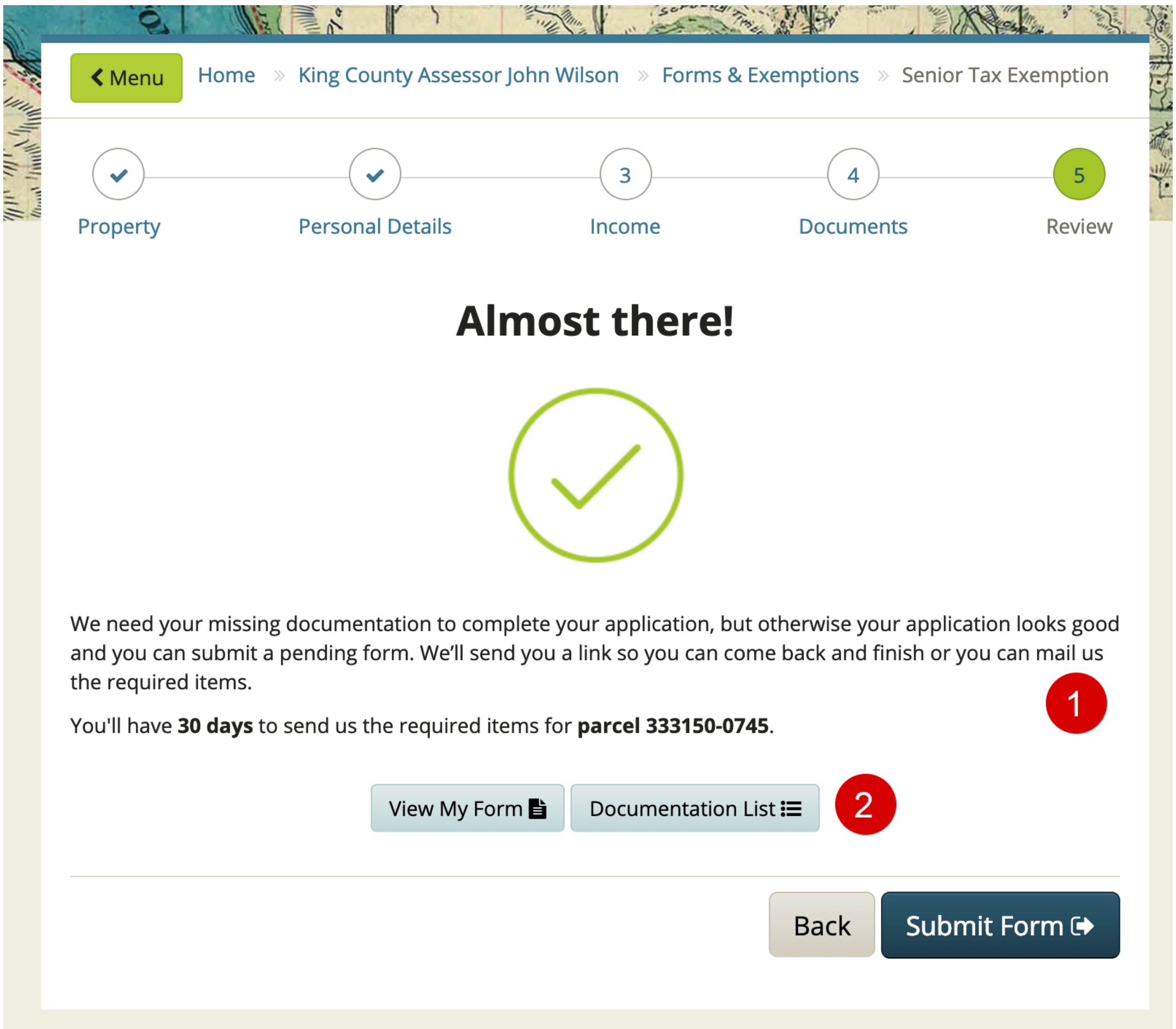
1. One participant was confused by the "Or" and thought it meant that they only needed to enter their driver's license number and didn't have to upload any of the other documentation.
2. One participant interpreted this screen as an error message and didn't realize they could continue with the form. Other participants felt stressed out by this icon.




Menu
Home » King County Assessor John Wilson » Forms & Exemptions » Senior Tax Exemption
Property
Personal Details
3
Income
4
Documents
5
Review
Incomplete Documentation
2
We can't process your application without all the required documenation. You can submit now, and we'll hold your form for 30 days. You can either come back to finish uploading your documents or mail them to use by 4/15/2019.
Back
Continue

Task 6: "Almost There" screen

1. Participants wondered where they should mail their documentation to and expected to find an address on this screen.
2. Participants were confused that the "Documentation List" button returned them to the documentation screen. They would rather just see a list of what they need to gather.



Quantitative Data Summary

Task Completion Data

Successful interaction with elements of each task was noted as to whether it was successful and broadly what class of complications (if any) were encountered. If an interaction was not successful, a complication note was required. In cases where an assistances was required to complete the task, it was marked as a failure. In cases where an interaction was missed or ignored, but it was not critical to completion of the task, no notes were taken.

	P1				P2				P3				P4				P5				P1	P2	P3	P4	P5
Task 1: Getting to Know You screen	✓	?	!	✗	✓	?	!	✗	✓	?	!	✗	✓	?	!	✗	✓	?	!	✗	SCORE				
Field: first name	1				1				1	1	1		1				1				1	1	3	1	1
Field: middle initial			1	1	1				1	1	1		1				1	1			3	1	3	1	2
Field: last name	1				1				1				1				1				1	1	1	1	1
Field: email address			1	1	1				1				1	1			1				3	1	1	2	1
Button: continue	1				1				1				1				1				1	1	1	1	1
Task 2: Enter Your Property Address screen	✓	?	!	✗	✓	?	!	✗	✓	?	!	✗	✓	?	!	✗	✓	?	!	✗	SCORE				
Text: Qualification information					1				1				1				1				0	1	1	1	1
Progress bar					1								1								0	1	0	1	0
Field: parcel number	1	1			1	1				1		1	1				1	1			2	2	3	1	2
Field: purchased month/day/year	1		1		1				1	1	1		1	1			1				2	1	3	2	1
Field: amount	1				1				1				1				1				1	1	1	1	1
Field: trust toggle	1				1	1			1				1								1	2	1	1	0
Link: find on map	1				1					1		1	1				1				1	1	3	1	1
Link: recorder's office																					0	0	0	0	0
Task 3: Let's See if You Qualify	✓	?	!	✗	✓	?	!	✗	✓	?	!	✗	✓	?	!	✗	✓	?	!	✗	SCORE				
Field: birthday month/day/year	1		1		1				1		1		1	1			1				2	1	2	2	1
Radio buttons:: marital status	1				1				1	1			1				1				1	1	2	1	1
Optional: Tell us about your spouse					1				1				1	1			1				0	1	1	2	1
Field: name, first / m.i. / last					1				1				1				1				0	1	1	1	1
Field: birthday month/day/year					1				1				1				1				0	1	1	1	1

	P1				P2				P3				P4				P5				P1	P2	P3	P4	P5
Task 4: Let's Check Your Income Screen	✓	?	!	✗	✓	?	!	✗	✓	?	!	✗	✓	?	!	✗	✓	?	!	✗	SCORE				
Selection: tax form	1				1				1				1				1				1	1	1	1	1
Text: compliance information						1		1	1								1				0	3	1	0	1
Button: continue (to next screen)	1	1			1				1				1	1			1				2	1	1	2	1
Button: enter income start	1	1			1				1				1	1			1				2	1	1	2	1
Fields: income fields (multiple)	1				1	1			1				1	1			1	1			1	2	1	2	2
Button: enter deductions start	1				1		1						1				1				1	2	0	1	1
Fields: deduction fields (multiple)	1				1								1				1				1	1	0	1	1
Button: continue (to complete task)	1				1				1				1	1			1				1	1	1	2	1
Task 5: Required documentation screen	✓	?	!	✗	✓	?	!	✗	✓	?	!	✗	✓	?	!	✗	✓	?	!	✗	SCORE				
Text: Document preparation		1		1	1		1			1		1		1		1		1		1	3	2	3	3	3
Button: print this list					1	1															0	2	0	0	0
Button: email this list																					0	0	0	0	0
Field or document: drivers license	1				1	1				1		1	1	1			1	1			1	2	3	2	2
Document: IRS return			1	1		1		1		1		1			1	1		1		1	3	3	3	3	3
Document: SS income statement			1	1		1		1		1		1			1	1		1		1	3	3	3	3	3
Screen: incomplete document submission	1	1			1					1		1	1						1	1	2	1	3	1	3
Task 6: "Almost There" screen	✓	?	!	✗	✓	?	!	✗	✓	?	!	✗	✓	?	!	✗	✓	?	!	✗	SCORE				
Button: view my form					1												1		1		0	1	0	0	2
Button: document list	1	1			1	1							1				1		1		2	2	0	1	2
Button: submit form	1	1			1	1			1					1		1	1		1		2	2	1	3	2
Text: Suspend / resume process		1		1	1	1				1		1		1		1			1	1	3	2	3	3	3

✓	Success
?	Issues of understanding or awareness
!	Issues of capability or system error
✗	Failure

0	Not applicable
1	Success, no issues
2	Success, with complications
3	Failure or abandonment

Post-Task Questions Responses

At this stage in the application, do you know if you are qualified for the exemption?	P1	P2	P3	P4	P5	P1	P2	P3	P4	P5
						SCORE				
Task 1: Getting to Know You screen	0	0	0	0	0	0	0	0	0	0
Task 2: Enter Your Property Address screen	0	0	0	0	0	0	0	0	0	0
Task 3: Let's See if You Qualify	0	0	0	0	0	0	0	0	0	0
Task 4: Let's Check Your Income Screen	0	0	0	0	0	0	0	0	0	0
Task 5: Required documentation screen	0	0	0	0	0	0	0	0	0	0
Task 6: "Almost There" screen	0	0	0	0	0	0	0	0	0	0

YES, I know

NO, I do not know

On a scale of 1 to 5, where 1 is difficult and 5 is easy, how easy was this section to comp	P1	P2	P3	P4	P5	P1	P2	P3	P4	P5
						SCORE				
Task 1: Getting to Know You screen	3	5	5	4	5	3	5	5	4	5
Task 2: Enter Your Property Address screen	3	5	5	5	3	3	5	5	5	3
Task 3: Let's See if You Qualify	4	5	5	5	5	4	5	5	5	5
Task 4: Let's Check Your Income Screen	4	3	5	4	3	4	3	5	4	3
Task 5: Required documentation screen	1	1	1	1	-5	1	1	1	1	-5
Task 6: "Almost There" screen	3	1	1	5	2	3	1	1	5	2

Attribution of Primary Findings

Findings	P1	P2	P3	P4	P5
4 of 5 participants would not have had digital documentation	■		■	■	■
3 of 5 participants could not scan documents for uploading	■		■	■	
3 of 5 participants would not upload documents		■	■		■
2 of 5 participants were comfortable with photographing documents	■			■	
5 of 5 participants were unable to determine if they qualify	■	■	■	■	■
3 of 5 participants said they would have abandoned the application before reaching the documentation section	■	■	■		
2 of 5 participants were unpleasantly surprised by requests for sensitive information while completing the application		■			■
4 of 5 participants requested that information requirements be provided at the start	■	■		■	■

Further Research & Repeat Study Recommendations

Recommendation for Further Research

During the analysis of our findings we identified several areas that would benefit from additional research:

1. **Determine device and broadband distribution in the target audience.** Our participants showed higher usage of smart phones as their primary device and fewer had broadband available than expected. This could affect the design goals of the next revision to the application.
2. **Explore the viability of online/mail-in hybrid approaches to document submission.** Participants generally preferred applying online, but preferred to submit documents via the mail (or in-person). The approaches should be tested with the Assessment Office personnel as well as end-users to determine the most effective approach.
3. **Explore ways to better integrate the Parcel Viewer into the form.** One participant let us know that she had struggled to use the Parcel Viewer site in the past and thought it would be our "bugaboo." Participants got confused having to switch tabs and copy and paste a parcel number from one site into the other. Research should explore how technology can further integrate these two systems and allow for re-testing the usability of any solutions.

Lessons to Apply to Additional Studies

For a team preparing to repeat this study, we recommend :

1. **Work with the Assessors office to recruit two groups of participants:**

    a. Seniors that are currently enrolled in the tax exemption program and are familiar with the requirements and process, but have only applied via the original paper form, and

    b. Seniors that most likely qualify, but have never applied for the program before. Recruiting this group would require property tax and title information, so it would have to be handled with care.

2. **Improve the post-task questions.** The Likert scale question to assess ease of tasks may have been worded to be perceived as judgemental, as respondents gave a much higher rating than their comments would suggest. We recommend a more oblique question that does not appear as a participant self-assessment. The post-task question that asked “What would you do next?” produced no informative data and should be dropped or replaced.

3. **Add a post-session card-sorting of screens to assess order preference.** Given our second key finding, the order of screens can have a significant effect on the time-to-complete and perception of the application. A card-sorting exercise could yield valuable results.

4. **Provide moderator tools to help participants focus on their own subjective experience.** Several of our participants provided comments based on assumptions about what other users would experience, rather than their own, subjective experience. Moderators should be prepared to guide participants back to descriptions of their own experience.

5. **Maintain tighter, better documented procedures for note-taking.** While the “four boxes” note taking format (see templates in Appendix E) proved capable of capturing nuances of user issues, more explicit protocols would reduce the amount of time needed to reconcile different team members’ notes after each session.

APPENDICES

Appendix A: Screener Questionnaire
Appendix B: Participant Consent Form
Appendix C: Session Overview Script
Appendix D: Pre-Study Questionnaire
Appendix E: Reporting Sheets
Appendix F: Post-Study Survey & Questionnaire

Appendix A: Screener Questionnaire

Primary screener questions

- Are you 61 years of age or older?

  Yes

  No (Dismiss)

- Do you live in King County?

  Yes

  No (Dismiss)

Tax exemption qualifications (for reference but not used in screener)

- Do you have a total annual income of $40,000 or less (including social security income)?
- Do you own and occupy a house, mobile home, condo or co-op as principal residence as of December 31 of the year prior to the year of application?
- Are 61 years of age or older?
- Are you retired because of physical disability?
- Are you are a widow or widower at least 57 years of age, whose spouse had an exemption at the time of death?

Appendix B: Participant Consent Form

I agree to participate in the study conducted by University of Washington student team "TBD Usability".

I understand that during this study I may be asked to:

- Work with the website to do a set of tasks
- Think out loud while doing this task
- Answer interview and survey questions

I understand that this study will benefit from recording my responses during the session, and I authorize TBD Usability to make these recordings (check all that you wish to authorize):

- ❑ Audio recording of myself during the session
- ❑ Video recording of myself during the session
- ❑ Photographs of myself during the session

I understand the TBD Usability is a student project, and I authorize them to use these materials in their portfolios as demonstration of their work:

- ❑ Yes, I do
- ❑ No, I do not

I give my permission to TBD Usability to use my statements, recordings as indicated above, and their notes for the purposes of evaluating and improving the website. I understand that my personal information, including any information input to the website, will not be shared outside of the study.

I understand that participation in this usability study is voluntary, and I may withdraw from the session at any time. I understand that I may request a break for any reason during the session.

Please sign below to indicate that you have read and you understand the information on this form and that any questions you might have about the session have been answered.

Date:_________

Please print your name: ____

Please sign your name: ____

Thank you! We appreciate your participation.

Appendix C: Session Overview Script

Hi, my name is **[moderator]** and I'll be leading the study today and this is **[notetaker]** who will be taking notes. My teammates will be taking notes in the other room. To start, I'm going to read an introduction from a script to ensure that all participants get the same information.

Here's what we'll do today. I'll show you some screens and ask you to think out loud as you show me how you would fill them. Just give us a running commentary of your thoughts the whole time. When you read something on the screen, read it out loud. When you click a link, say what you're clicking on so I can follow along. I'll be here to remind you to keep talking, and I might ask you some questions. I'll be asking you to SLOWLY step through each task I give you. When you've finished a task, just let me know when you're done. After each step, we'll stop, and I'll ask you a few questions. Ok?

What we will be reviewing today is an online form is for letting senior citizens of King County apply for an exemption or reduction from their property tax. This is in an early stage of testing so some parts may not be working correctly.

We will be providing you with fake information for filling out the form so that you don't have to provide us with your personal property tax information. None of the information you submitted to the application will be used or stored. This system is not hooked up to anything that King County receives yet.

Please tell us exactly what you think. We want your honest impressions. You can't hurt our feelings. We're here to find out what is working and what is not working. We'd like to find out what can be done better. There are no right or wrong answers to any tasks or questions I'll ask you today. There are no right or wrong answers. There may be things that are frustrating or seem like a mistake, but everything you do is going to help us make this better.

Consent

If you would, I'm going to ask you to sign something for us. It simply says we have your permission to participate in the study and record your image, voice and your screen. Take your time to review it and let me know if you have any questions.

[If applicable, start recording]

Do you have any questions before we get started?

Prompt: Get Started button

Appendix D: Pre-Study Questionnaire

1. To start, can you tell us a bit about yourself and what you do?

2. Do you do any of the following activities online?
   ▢ Online Banking
   ▢ Online Bill Pay
   ▢ Taxes

3. What other activities do you typically do online?

4. Roughly how many hours a week altogether—just a rough estimate— would you say you spend using the Internet, including Web browsing and email, at work and at home?

5. How do you typically access the internet? Which devices?

6. Tell us your experience preparing taxes each year?
   ▢ Does it themselves
   ▢ Gets help
   Notes:

7. Do you participate in any senior discount or benefit programs?
   ▢ Yes   Please specify programs: ____________________
   ▢ No
   If yes, did you have to apply for the program?
   ▢ Yes
   ▢ No

8. Tell me what you know about tax relief programs of this kind?
   ▢ Knows of but hasn't used one before
   ▢ Knows of and has used one before
   ▢ Not familiar, hasn't used one before
   Notes:

9. Do you know how much this program could save you?
   ▢ Yes
   ▢ No

Appendix E: Reporting Sheets

Key

✓	Completed task successfully
?	Confusion or participant error on task *Issues of understanding or awareness*
!	Obstacle or system error *Issues of ability or system functionality*
✗	Did not complete task successfully

Check all columns that apply, and make notes in each row to clarify as needed (e.g. source of confusion, specific reaction, prompts given, etc.)

In prompts, replace [*thing in brackets*] with the relevant field name, task step or information requested.

Task 1: Getting to Know You screen

Participant Prompts:

- *Pre-task Question:* In your own words, can you explain the instructions for this section?
- *Standard Prompt:* Please talk us through how you would complete this section of the application. When you reach a point where you have completed this section, stop and let us know. Be sure to share your thoughts and reactions as you go. Be open and honest. We will provide you with information to enter so you do not need to use your personal information

Recording

	✓	?	!	✗	Notes
Field: first name					
Field: middle initial					
Field: last name					
Field: email address					
Button: continue					

Post-Task Questions

1. On a scale of 1 to 5, where 1 is difficult and 5 is easy, how easy was this section to complete?
2. At this stage in the application, do you know if you are qualified for the exemption?
3. At this stage in the application, what would you do next?

Additional Notes

Task 2: Enter Your Property Address screen

Participant Prompts:

- *Pre-task Question:* In your own words, can you explain the instructions for this section?
- *Standard Prompt:* Please talk us through how you would complete this section of the application. When you reach a point where you have completed this section, stop and let us know. Be sure to share your thoughts and reactions as you go. Be open and honest. We will provide you with information to enter so you do not need to use your personal information
- What would you do next to find out more about [*parcel number*]?
- What would you do next to enter [*parcel number*]?
- What do you think is expected for [*parcel number*]?

Recording

	✓	?	!	✗	Notes
Text: Qualification information					
Progress bar					
Field: parcel number					
Field: purchased month/day/year					
Field: amount					
Field: trust toggle					
Link: find on map					
Link: recorder’s office					

Post-Task Questions

1. On a scale of 1 to 5, where 1 is difficult and 5 is easy, how easy was this section to complete?
2. At this stage in the application, do you know if you are qualified for the exemption?
3. At this stage in the application, what would you do next?

Additional Notes

Task 3: Let's See if You Qualify

Participant Prompts:

- *Pre-task Question:* In your own words, can you explain the instructions for this section?
- *Standard Prompt:* Please talk us through how you would complete this section of the application. When you reach a point where you have completed this section, stop and let us know. Be sure to share your thoughts and reactions as you go. Be open and honest. We will provide you with information to enter so you do not need to use your personal information
- What do you think is expected for [*marital status*]?
- If you wanted to change your property information, what would you do next?

Recording

	✓	?	!	✗	Notes
Field: birthday month/day/year					
Radio buttons:: marital status					
Optional: Tell us about your spouse					
Field: name, first / m.i. / last					
Field: birthday month/day/year					

Post-Task Questions

1. On a scale of 1 to 5, where 1 is difficult and 5 is easy, how easy was this section to complete?
2. At this stage in the application, do you know if you are qualified for the exemption?
3. At this stage in the application, what would you do next?

Additional Notes

Task 4: Let's Check Your Income Screen

Participant Prompts:

- *Pre-task Question:* In your own words, can you explain the instructions for this section?
- *Standard Prompt:* Please talk us through how you would complete this section of the application. When you reach a point where you have completed this section, stop and let us know. Be sure to share your thoughts and reactions as you go. Be open and honest. We will provide you with information to enter so you do not need to use your personal information
- Do you know which type of tax form you filed? Do you know how you would find out?
- Do you know how you would look up and gather your sources of income or deductions?

Recording

	✓	?	!	✗	Notes
Selection: tax form					
Text: compliance information					
Button: continue (to next screen)					
Button: enter income start					
Fields: income fields (multiple)					
Button: enter deductions start					
Fields: deduction fields (multiple)					
Button: continue (to complete task)					

Post-Task Questions

1. On a scale of 1 to 5, where 1 is difficult and 5 is easy, how easy was this section to complete?
2. At this stage in the application, do you know if you are qualified for the exemption?
3. At this stage in the application, what would you do next?

Additional Notes

Task 5: Required documentation screen

Participant Prompts:

- *Pre-task Question:* In your own words, can you explain the instructions for this section?
- *Standard Prompt:* Please talk us through how you would complete this section of the application. When you reach a point where you have completed this section, stop and let us know. Be sure to share your thoughts and reactions as you go. Be open and honest. We will provide you with information to enter so you do not need to use your personal information
- Instruct the participant not to submit any documents at this time
- What would you do next if you were uploading your documents now?

Recording

	✓	?	!	✗	Notes
Text: Document preparation					
Button: print this list					
Button: email this list					
Field or document: drivers license					
Document: IRS return					
Document: SS income statement					
Screen: incomplete document submission					

Post-Task Questions

1. On a scale of 1 to 5, where 1 is difficult and 5 is easy, how easy was this section to complete?
2. At this stage in the application, do you know if you are qualified for the exemption?
3. At this stage in the application, what would you do next?

Additional Notes

Task 6: “Almost There” screen

- *Pre-task Question:* In your own words, can you explain the instructions for this section?
- *Standard Prompt:* Please talk us through how you would complete this section of the application. When you reach a point where you have completed this section, stop and let us know. Be sure to share your thoughts and reactions as you go. Be open and honest. We will provide you with information to enter so you do not need to use your personal information

Recording

	✓	?	!	✗	Notes
Button: view my form					
Button: document list					
Button: submit form					
Text: Suspend / resume process					

Post-Task Questions

1. On a scale of 1 to 5, where 1 is difficult and 5 is easy, how easy was this section to complete?
2. At this stage in the application, do you know if you are qualified for the exemption?
3. At this stage in the application, what would you do next?

Additional Notes

Appendix F: Post-Study Survey & Questionnaire

	Strongly Disagree	Somewhat Disagree	Neutral	Somewhat Agree	Strongly Agree

1. I would prefer using this website over a paper form to submit my application.					
2. I found the website unnecessarily complex.					
3. I thought the website was easy to use.					
4. I think that I would need the support of a technical person to be able to use this website.					
5. I would imagine that most people would learn to use this website very quickly.					
6. I found the website very cumbersome to use.					
7. I felt very confident using the website.					
8. I needed to learn a lot of things before I could get going with this website.					
9. I could clearly tell what step I was in in the process of filling out the form.					

How likely is it that you would recommend this website to a friend or colleague? (please circle your answer)

Not at all likely | *Neutral* | *Extremely likely*

0 1 2 3 4 5 6 7 8 9 10

Post-Study Questionnaire

1. [Follow up questions regarding the survey]
2. Was there information would you have liked to have had before starting this application?
3. What, if any, feedback would you like to receive after completing the application?
4. Do you have any more comments about the session?