Supplemental Materials - Worcester Community Connections Coalition Digital Blue Book

An Interactive Qualifying Project
submitted to the Faculty of
WORCESTER POLYTECHNIC INSTITUTE
in partial fulfilment of the requirements for the
degree of Bachelor of Science

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Report Submitted to:

Anne Bureau Worcester Community Connections Coalition of You, Inc.

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This report represents work of WPI undergraduate students submitted to the faculty as evidence of a degree requirement. WPI routinely publishes these reports on its web site without editorial or peer review. For more information about the projects program at WPI, see http://www.wpi.edu/Academics/Projects.

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Appendix B: Brendan

Appendix C: Brendan

Appendix D: Bridgette

Appendix E: General User Survey: Eli

Appendix F: Specific User Interview: Eli

Appendix G: Julia

Appendix H: Brendan

Appendix I: Eli and Julia

Appendix J: N/A

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Appendix A - Interview Guide

We are a group of students from Worcester Polytechnic Institute in Massachusetts. We are conducting interviews of the residents of Worcester to receive feedback on the mobile application and website we have developed. This research will be used by the Worcester Community Connections Coalition (WCCC) to improve the digital book of resources.

Your participation in this survey is completely voluntary and you may withdraw at any time. Please remember that your answers will remain anonymous. No names or identifying information will appear on the questionnaires or in any of the project reports or publications.

This is a collaborative project between the WCCC and WPI, and your participation is greatly appreciated. If interested, we can share a copy of our results with you at the end of the project.

For more information about this research contact <u>gr-WCCC-C20@wpi.edu</u> or IRB Manager (Ruth McKeogh, Tel. 508-831-6699, Email: irb@wpi.edu) or Human Protection Administrator (Gabriel Johnson, Tel. 508-831-4989, Email: gjohnson@wpi.edu).

Formal Questions to Parents:

- 1. Are you familiar with the "Blue Book" and have you used it in the past?
- 2. In general, what is the purpose of the "Blue Book" to you?
- 3. Do you feel you would use the Blue Book more if it were available for a smartphone?
- 4. What would make the app version most useful to you?
- 5. What type of phone do you have?
- 6. Would you want to be able to search or scroll through topics?
- 7. What is the most important thing about the Blue Book that we should keep in mind when making the app?

Formal Questions to Social Workers and Police Officers:

- 1. Are you familiar with the "Blue Book" and have you used it in the past?
- 2. In general, what is the purpose of the "Blue Book" to you?
- 3. Do you feel you would use the Blue Book more if it were available for a smartphone?
- 4. What would make the app version most useful to you?
- 5. What type of phone do you have?

- 6. Would you want to be able to search or scroll through topics?
- 7. What is the most important thing about the Blue Book that we should keep in mind when making the app?
- 8. What are some of the ways you have used the Blue Book in the past?
- 9. Do you feel like the blue book could be useful to you in your work as a police officer?

Appendix B - Questions for Anne Bureau

We are a group of students from Worcester Polytechnic Institute in Massachusetts. We are conducting an interview of the WCCC program director and project sponsor Anne Bureau to gain an understanding of the WCCC organization and the need for the Blue book they created. This research will be used by the Worcester Community Connections Coalition (WCCC) to improve the digital book of resources.

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Structured Questions:

- 1. In general, what is the goal of the "Blue Book"?
- 2. Who currently has access to and gets the "Blue Book"?
- 3. Who do you want to be able to have access to the "Blue Book"?
- 4. What are we going to be helping with?
- 5. Website? Or an App? Or digitalizing the "Blue Book"?
- 6. Who will be sustaining the digital "Blue Book" after we complete the project?
- 7. What types of skills do they have in regards to technology/programming?
- 8. How will we interact with the community?

Informal Questions:

- 1. What other resources or places should we research?
- 2. Can we have access to your website so we can do more research?
- 3. What questions do you have for us?

Appendix C - WCCC & Seven Hills Interview Questions

We are a group of students from Worcester Polytechnic Institute in Massachusetts. We are conducting an interview of various employees of both the WCCC and Seven Hills organizations to expand the groups knowledge on the different jobs and projects both organizations are working on, while also learning about the overall structure of the two organizations. This research will be used by the Worcester Community Connections Coalition (WCCC) to improve the digital book of resources.

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<u>Interview for other WCCC employees:</u>

- 1. Why did you join the WCCC?
 - a. Was there a specific area, problem, or group of people in Worcester you were initially looking to help make an impact on?
- 2. What projects have you worked on with the WCCC to help impact families in the Worcester community?
 - a. Which has been the most impactful?
- 3. What is the biggest issue that you have been trying to help solve in the Worcester community?
- 4. Where would you like to see the WCCC grow or improve in their work?
- 5. What project or issue are you currently working on to solve with the WCCC?
- 6. Which areas of Worcester need the most assistance from the WCCC?
 - a. How often does the WCCC get involved in that specific area/ region?
- 7. How has your job/ work you do for the WCCC changed due to COVID-19?
- 8. Do you have any advice for our group going forward in relation to our project?

Interview for higher ranking WCCC employees:

- 1. Why did you join the WCCC?
 - a. Was there a specific area, problem, or group of people in Worcester you were initially looking to help make an impact on?
- 2. How long have you been working for or with the WCCC?
- 3. What projects have you worked on with the WCCC to help impact families in the Worcester community?
 - a. Which has been the most impactful?
- 4. Where would you like to see the WCCC grow or improve in their work?
- 5. What resources will be available to the group from the WCCC when working to complete the project?
 - a. Will there be anyone IT or anyone with technology-based skills able to work with or overview our project work?
- 6. Describe the relationship between the WCCC and the parent organizations YOU inc. and Seven Hills.
- 7. What resources will be available to the group from the parent organizations YOU inc. and Seven Hills, when working to complete the project?
- 8. How has your job/ work you do for the WCCC changed due to COVID-19?

Interview questions for parent organizations:

- 1. Why did you join the organization you are currently a part of?
 - a. Was there a specific area, problem, or group of people in Massachusetts you were initially looking to help make an impact on?
- 2. What projects have you worked on with your organization to help impact families in the Worcester or Massachusetts community?
 - a. Which has been the most impactful?
- 3. Describe the relationship and structure between the WCCC and your organization.
- 4. What resources will be available to the group from your organization when working to complete the project?

- a. Will there be anyone IT or anyone with technology-based skills able to work with or overview our project work?
- 5. What technology-based guidelines will the group face when creating a digital platform by your organizations?
 - a. Will the group be able to create a website or have a spot on your organization's website for the Blue Book?
- 6. How has your job/ work you do for your organization changed due to COVID-19?

Appendix D - Interview Questions for Digital Platform Creators

We are a group of students from Worcester Polytechnic Institute in Massachusetts. We are conducting interviews with digital platform creators to gain an understanding of how to create a successful digital platform for an organization. This research will be used by the Worcester Community Connections Coalition (WCCC) to improve the digital book of resources.

Your participation in this interview is completely voluntary and you may withdraw at any time. Please remember that your answers will remain anonymous. No names or identifying information will appear on the questionnaires or in any of the project reports or publications.

This is a collaborative project between the WCCC and WPI, and your participation is greatly appreciated. If interested, we can share a copy of our results with you at the end of the project.

For more information about this research contact <u>gr-WCCC-C20@wpi.edu</u> or IRB Manager (Ruth McKeogh, Tel. 508-831-6699, Email: irb@wpi.edu) or Human Protection Administrator (Gabriel Johnson, Tel. 508-831-4989, Email: gjohnson@wpi.edu).

Structured Questions:

- 1) How did you become involved in creating a digital platform?
 - a) What inspired you to create this digital platform?
- 2) For how long have you had experience in creating digital platforms?
 - a) What was your experience like, working with cross platform development?
- 3) Could you explain the creation process of a digital platform or an app?
 - a) What creation tool, or tools, have you used to create this digital platform?
- 4) What is the difference between android development vs IOS development?
- 5) What features do you feel are the best to include in a digital platform?
- 6) What is the layout of your digital platform like?
 - a) What factors cause this layout to appeal to the user?
- 7) How do you receive feedback from users on your digital platform?
 - a) How do you implement this feedback into alterations?
- 8) In your opinion, how can digital platforms improve the quality of life for an individual or a community?
- 9) How have users benefited from using your digital platform?

- 10) Do you have any recommendations about creating a digital platform for a community in need?
- 11) What makes a digital platform easy for a user to navigate?
- 12) Are there any crucial digital platform development principles that we didn't talk about during this interview?

Appendix E - General User Survey

We are a group of students from Worcester Polytechnic Institute in Massachusetts. We are conducting a survey of residents of Worcester to receive feedback on the mobile application and website we have developed. This research will be used by the Worcester Community Connections Coalition (WCCC) to improve the digital book of resources.

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Each question will allow you to rate it on one aspect from 1 to 5, with 1 being a bad rating, and 5 being a good rating. After each question will be an optional textbox for additional comments on the question.

Mobile App

1. After reviewing the App, please rate its usefulness.

1	2	3	4	5
Please provide any	additional commen	ts about the app's us	sefulness below:	
2. After review	ving the App, please	e rate its visual appe	eal.	
1	2	3	4	5

Please provide any	additional commen	ts about the app's vi	isual appeal below:	
3 After review	ving the App, please	rate its organizatio	n	
3. After review	T			
1	2	3	4	5
Please provide any	additional commen	ts about the app's or	rganization below:	
4. After review	ving the App, please	e rate its navigability	y.	
1	2	3	4	5
1	2	3	т	3
Please provide any	additional commen	ts about the ease of	navigating the app l	below:
5. Please navi	gate to the page title	d "Worcester Hous	ing Authority". Ple	ase rate the ease of
navigating t	to this page.			
1	2	3	4	5
D1 '1	1100	. 1		1 1
Please provide any	additional commen	ts about the ease of	navigating to this pa	age below:
L				
6. Please navi	gate to any resource	that could help a ch	nild struggling with	homework. Please
rate the ease	e of navigating to th	is page.		
1	2	3	4	5

Please prov	ide any additional co	omments about th	e ease of navigating	to this page below	v:
7. Plea	se list any issues you	ı encountered wh	ile using the app be	low:	
8. Plea	se leave any addition	nal comments abo	out the app or surve	y below:	
		Web			
1. Afte ————————————————————————————————————	er reviewing the Web	osite, please rate i	ts usefulness.	5	
lease prov	ide any additional co	omments about th	e website's usefulno	ess below:	
2. Afte	er reviewing the Web	osite, please rate i	ts visual appeal.		
1	2	3	4	5	
lease prov	ide any additional co	omments about th	e website's visual a	ppeal below:	

3. After reviewing the Website, please rate its organization.

1	2	3	4	5
Please provide any	additional comment	ts about the website	's organization belo	ow:
4. After review	ving the Website, pl	ease rate its navigal	pility.	
1	2	3	4	5
Please provide any	additional comment	ts about the website	's ability to be navi	gated below:
5. Please navig	gate to the page title o this page.	d "Worcester Housi	ing Authority". Ple	ase rate the ease of
1	2	3	4	5
Please provide any	additional comment	ts about the ease of	navigating to this pa	age below:
_	gate to any resource	-	nild struggling with	homework. Please
1	2	3	4	5
Please provide any	additional comment	ts about the ease of	navigating to this pa	age below:

7. Please list any issues you encountered while using the website below:

8. Please leave any additional comments about the website or survey below:	

Appendix F - Specific User Interview

We are a group of students from Worcester Polytechnic Institute in Massachusetts. We are conducting a survey of residents of Worcester to receive feedback on the mobile application and website we have developed. This research will be used by the Worcester Community Connections Coalition (WCCC) to improve the digital book of resources.

Your participation in this interview is completely voluntary and you may withdraw at any time. Please remember that your answers will remain anonymous. No names or identifying information will appear on the questionnaires or in any of the project reports or publications.

This is a collaborative project between the WCCC and WPI, and your participation is greatly appreciated. If interested, we can share a copy of our results with you at the end of the project.

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Mobile App

- 1. Do we have your permission to record this interview? The recording would only be used by the project group in order to improve the website and mobile app.
- 2. Please explore the app on your own for a few minutes.
- 3. How do you feel about the app's and its usage in your life, compared to other apps you use?
- 4. What is your general impression of the app's visual appeal, compared to other apps you use?
- 5. What is your general impression of the app's organization, compared to other apps you use?
- 6. How do you feel about the ease of navigating the app, compared to other apps you use?
- 7. Please navigate to the page titled "Worcester Housing Authority". How do you feel about the ease of navigating to this page, compared to other apps you use?
- 8. Please navigate to any resource that could help a child struggling with homework. How do you feel about the ease of navigating to this page, compared to other apps you use?
- 9. What crucial features, if any, do you feel are missing from the app?

- 10. Please describe any issues you encountered when using the app.
- 11. Do you have any additional comments, questions, or concerns about the app, or the project itself?

Website

- 1. Please explore the website on your own for a few minutes.
- 2. How do you feel about the website's and its usage in your life, compared to other websites you use?
- 3. What is your general impression of the website's visual appeal, compared to other websites you use?
- 4. What is your general impression of the website's organization, compared to other websites you use?
- 5. How do you feel about the ease of navigating the website, compared to other websites you use?
- 6. Please navigate to the page titled "Worcester Housing Authority". How do you feel about the ease of navigating to this page, compared to other websites you use?
- 7. Please navigate to any resource that could help a child struggling with homework. How do you feel about the ease of navigating to this page, compared to other websites you use?
- 8. What crucial features, if any, do you feel are missing from the website?
- 9. Please describe any issues you encountered when using the website.
- 10. Do you have any additional comments, questions, or concerns about the website, or the project itself?

Appendix G - Platform Maintainer Focus Group

We are a group of students from Worcester Polytechnic Institute in Massachusetts. We are conducting a focus group with members of the WCCC that may be maintaining the Blue Book application for feedback on the updating interface we have developed. This research will be used by our developers to improve the updating interface for the digital Blue Book platforms.

Your participation in this focus group is completely voluntary and you may withdraw at any time. Please remember that your answers will remain anonymous. No names or identifying information will appear on the questionnaires or in any of the project reports or publications.

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- 1. First, we want you to attempt this process with no guidance from us. This is to test the simplicity of the app, not your abilities, so do not worry if you are unable to get it right the first try. We will give you a brief explanation of the task we want you to complete, then we will observe your attempt to do so and ask for feedback when you are finished. (Brief explanation of task here; will be determined once backend prototype is complete)
- 2. What, if anything, was confusing or frustrating to you during your first attempt? Is there anything in particular you would like us to change?
- 3. What, if anything, did you like about the system during your first attempt? Are there any features you found particularly user friendly?
- 4. Now we are going to demonstrate how to update the app, step by step. Feel free to ask clarifying questions, as these will help us make changes to the system and construct our instruction manual when the time comes. Once the demo is complete, we are going to ask

you to attempt to update the system once again; this time, we will answer any questions you have along the way. We will once again be observing your attempt and asking for feedback when you are finished.

- 5. What, if anything, was confusing or frustrating to you during your second attempt? Is there anything else you would like us to change?
- 6. What, if anything, did you like about the system during your second attempt? Are there any more features you found particularly user friendly?
- 7. Finally, are there any changes you would have us make to this system that would make it easier for you to use? Bear in mind we may not be able to take all suggestions depending on the limitations of the architecture of the code.
- 8. Is there anything else you would like to share with us about your experience today?

Appendix H - Guide to Updating the Blue Book

CSV: This is how the information is stored for the website. It can be opened in any spreadsheet software, such as Microsoft Excel, and then saved to stay as a .csv file

Category name: is the name of the title related to the table of contents, unless there is a subcategory that appears. Then, the main title is separated with a colon (:) and then followed by any subcategory titles.

The page number in the Book: is only for the person who is updating the Blue Book, as it will not be shown on the website. It is useful when looking at the hard copy's Table of Contents to identify where a resource is in the spreadsheet/ CSV.

Name of resource: Almost all of the names of the resources were direct copies from the Blue Book itself. A few were grouped together or rearranged to cover more than one resource. Lastly, parentheses with abbreviations of the name of the resource were included in some of the resource names. Colons (:) were also used when names of resources had them in the Blue Book, which in most cases were for locations or subtitles.

Address: All addresses were taken directly from the Blue Book. The address box can include the address of a resource, the building and floor number, mailing and or shipping address, and the name of the resource in parentheses if there is more than one address. A semicolon (;) can be used to separate addresses in the box if the addresses fall under the same resource but are used for different reasons.

Phone number and/or extension: Phone numbers and extension lines were taken directly from the Blue Book. The phone number and extension boxes can include the phone number and extension (if needed) of a resource. The extension box will contain the letter "x" in front of the remaining numbers. The boxes can also include faxing numbers, texting or chat numbers, different languages lines, parentheses around the conversion of the lettering in some phone numbers to the numbers they represent, the name of the resource, name of a person of contact, or location in parentheses to identify the correct number if there is more than one number. A semicolon (;) can be used to separate numbers in the box if the phone numbers fall under the same resource but are used for different reasons. An ampersand (&) can be used to show multiple numbers that are for the same resource.

Zoom Call: This column only occurs within the Legal service page and the Health Insurance pages of the CSV. In these cells, a link to the zoom meeting is included as well as the meeting ID which is separated by a semicolon (;).

Website: Website links were taken directly from the Blue Book. Some of these links are live and can take the user directly to the website while other website links will have to be manually typed into a web browser in order to pull up the website. If there is more than one website link for a given resource, parentheses will either be placed around the name of the resource, name of a person of contact, or location directly after the website link to identify the correct website for the given resource. A semicolon (;) can be used to separate multiple website links in the box if the website falls under the same resource but is used for different reasons. An ampersand (&) can be used to show multiple websites that are for the same resource.

Person of contact: Person of contact information was directly taken from the Blue Book. If there is more than one person of contact for a given resource, parentheses will be placed around the person's position or title held at their organization, name of the resource, or location of the resource. A semicolon (;) can be used to separate contacts in the box if the website falls under the same resource but is used for different reasons. An ampersand (&) can be used to show multiple contacts that are for the same resource.

Email: Emails were taken directly from the Blue Book. Some of these email links are live and can take the user directly to their email on their computer while other email links will have to be manually typed into their email in order to reach out. If there are multiple email links for a given resource, parentheses will either be placed around the name of the resource, name of a person of contact or their title held at their organization, or location of the resource directly after the email link to identify the correct email for the given resource. A semicolon (;) can be used to separate multiple emails in the box if the email falls under the same resource but is used for different reasons. An ampersand (&) can be used to show multiple emails that are for the same resource.

Details: The details box of the CSV takes all of the extra information given for any resource (that does not fall under the previous categories) and includes it in this section. This tends to be the most filled box throughout the CSV as some resources can have lots of extra information, directions, and rules that a user will need to know. In order to organize all this information in one cell and or box, different symbols were used to fit the format of the Blue Book and website. Paragraphs can be directly placed into the cell and will show up exactly the same (as a paragraph) on the website. For bulleted information in the Blue Book, we replaced a bullet point with an Asterisk (*). So all of the extra information in the Blue Book in bulleted form can be placed into the CSV and just swap out the bullet point for the Asterisk. Then, for certain resources, the information not only has bullet points but also indented or sub-bullet points. To represent these bullets we changed the indented bullet point to an Asterisk directly followed by a Caret (*^) in the CSV. Lastly, for bullets followed directly by an Asterisk, the correct way to type this into the CSV is two Asterisks (**). All of these symbols can be seen in the key at the bottom of this guide.

Intro: In some pages and sections of the Blue Book, a brief introduction before the listing of the resources (e.g. After School Programs). These cells are much like the Detail cells. The intro cells can either be formatted as a paragraph or as bullet points. If it is a paragraph, it can be directly placed into the cell and will show up exactly the same (as a paragraph) on the website. If the intro is in bullet form, the bullets can be replaced with Asterisks. The same can be done if there are indented bullets (*^) or bullets with Asterisks (**). THE INFORMATION MUST BE PLACED INTO THE CELL DIRECTLY BELOW THE INTRO HEADER.

Extra: In some pages and sections of the Blue Book, subcategories or information not related to a specific resource pop up (e.g. Employment and training). For these specific occurrences, take the information and place it into the extra column as you continue down the CSV where it would go as if it were in the Book. DO NOT PLACE IT DIRECTLY UNDER THE EXTRAS HEADER. These extras will then have to be manually added, and can likely be added underneath the details. If a new line is needed, use "
br>" without the quotes in order to force a newline/line break.

Closing: In some pages and sections of the Blue Book, a brief conclusion is included at the bottom of resources (e.g. Child Care). These cells are much like the Detail and Intro cells. The Closing cells can either be formatted as a paragraph or as bullet points. If it is a paragraph, it can be directly placed into the cell and will show up exactly the same (as a paragraph) on the website. If the Closing is in bullet form, the bullets can be replaced with Asterisks. And the same can be done if there are indented bullets (*^) or bullets with Asterisks (**). THE INFORMATION MUST BE PLACED INTO THE CELL DIRECTLY BELOW THE CLOSING HEADER.

Key:

- * = Bullet point
- ** = A bullet point followed by an Asterisk
- * * = Indented or subcategory bullet point
- ;= Shows the separation of information presented that may fall under the same resource
- & = Shows the information that is presented, is related and falls under the same use for the same resource

Keys for CSV	Blue Book	CSV
Bullet point	•	*
Indented or sub-bullet point	0	*^
Bullet point with Asterisk	• *	**
Separate information	/ or different bullets	;
Related information	/ or same bullets	&
New Line/Line Break	New Line in a paragraph (not applicable to bullet points)	 br>

Appendix I – Back-End Developer Guide

Back-End Developer Guide

Introduction

Hello, and welcome to the back-end notes. This will cover the majority of the back-end HTML and JavaScript that was created for this project. This document is meant to act as documentation for this code, and not as a guide for how to update it.

File Structure

The majority of our work is contained in the public_html folder. This folder contains the JavaScripts used to process the data. There are sub folders as well. The table below shows what each folder is used for.

BlueBook	This contains the .html for all the Blue Book's categories
BlueBookMobile	This contains the .html for all the Mobile version of the Blue Book's categories
CSV	This folder contains the .csv files that list all the resources
images	This contains all the image files for our website
PDF	This contains the Blue Book physical book's PDF
videos	This contains any videos we use on our website

HTML Standard

The basic additions for the HTML are broken into five categories: Header, Intro, Resources, Custom, and Closing. For this, I will be using After_School_Programs.html as an example. Header

The header contains the code needed to run our additional scripts.

D3
4 <script src="https://d3js.org/d3.v5.min.js"></script>

This imports the D3 (https://d3js.org/) library we use to process the CSV information

Title, Stylesheet, and reference

This is the title of the specific webpage, as well as our custom Style Sheet used to format the buttons. Line 11 references our test page's URL, and this will need to be changed to suit the new website's file structure.

Page Title and File Name

374	<h1 align="center" id="FileName">After School Programs</h1> TITLE

This line is important. It not only displays the file, but also has the id of "FileName". This is used in our JavaScripts to know which CSV to reference. In this case, the file it would find would be "After School Programs.csv". Some sections which use a slash "/" in their name have two titles, with one being invisible and replacing the slash "/" with a dash "-", while a second title actually displays the dash, while not having the id of FileName.

Intro

375	<blueintro id="IntroContent"></blueintro>
376	
377	<script src="Intro.js"></script>
378	
379	

This creates a table to display the Intro content on. It uses the custom section name of BlueIntro, as well as the id of IntroContent, both of which will be used in the JavaScript. They are contained in a table, which is what we use to display the CSV information in.

Resources

380 381	<bluebook id="BookContent"></bluebook>
382	<script src="CSV_Reader.js"></script>
383	
384	

This uses the same format as the Intro, where the custom section of BlueBook with id BookContent is created, containing a table and the JavaScript.

Custom

386 387 388	<custom> <pre></pre></custom>
-------------------	-------------------------------

This is the section where any custom content will go. This is usually additional information. It is manually added and formatted.

Closing

	<u> </u>
396	<blueclosing id="ClosingContent"></blueclosing>
397	
398	<script src="Closing.js"></script>
399	
400	

This, again, uses the same features of the Intro and Book Content, with section BlueClosing and id ClosingContent.

Multiple Categories

For this section, we will be referencing Child Care.html

Buttons

382	<section_buttons></section_buttons>
383	<button class="center-mobile1" id="">View All</button>
384	
385	<button class="center-mobile1" id="Childcare Options for Low Income Private Pay Clients">Childcare Options</button>
386	for Low Income Private Pay Clients
387	
	<script src="CSV_Reader_Multi.js"></script>

This creates the custom section for Buttons, and is placed between BlueInto and BlueBook. Here, a button is manually created for each category listed in a CSVs category column. For Child Care, there are two categories: Child Care & Early Education, and Childcare Options for Low Income Private Pay Clients. The first button always has an id of "", meaning nothing - this will tell the CSV_Reader_Multi.js to show all the resources. The class is from our custom Style Sheet. Following the View All button, additional buttons are created for each category. The id must be the same as the category in the CSV, while the display name can differ slightly if needed for formatting reasons. The id of each button is the most important, as it is referenced by JavaScript. After the buttons are created, CSV_Reader_Multi.js is run, which changes the page data based on the category.

index.html/mobileHomePage

This page contains the introductory information from the Blue Book as well as the information and sponsor logos on the last several pages, in addition to the buttons that take you to the English and Spanish versions of the Online Blue Book and a How-To guide.

BlueBookOnline.html and BlueBookOnlineMobile.html

These pages hold the web and mobile version of the Table of Contents buttons for the Online Blue Book. The following lines of code run the Button_Maker_V2.js JavaScript file that automatically generates the categories buttons from Categories.csv.

Web:

Mobile:

How_To_Use.html

This page is relatively self explanatory, and the content (apart from the header and footer templates) is all manually entered. There are several short videos, screenshots, and small text snippets explaining various features of the website for the average user. Once new features like Search and What's New are completed, this page should be updated to reflect the new features. Admin features, such as CSV uploads or any future GUI updates should not be included on this page.

JavaScript

There are several JavaScripts that are used in our site. Below will cover the main ones: CSV_Reader_js, CSV_Reader_Multi.js, Intro.js, and Closing.js

CSV_Reader.js

This is the main script used to parse the CSV data and display it on the site. I will attempt to break it down line by line to explain what each part does.

```
1 var name = document.getElementById("FileName").innerHTML
2 // console.log()
3 d3.csv("CSV/"+name+".csv").then(function (data) {
```

Line 1 gets the FileName id from before, and sets it as the variable name. Line 2 is there for debugging purposes, and can be ignored. Line 3 uses D3 to load the CSV. It calls for the file by first loading the folder CSV, and then finding the file with the name we told it in FileName, with the .csv extension.

Line 4 creates the function runEnter, and defines it within the curly brackets {}. Line 5 sets the data as the output variable. Line 6 begins a for loop that will run until the whole CSV is

read. Line 7 uses D3 to create parts of the table to insert data to. It first finds the BlueBook custom section, selects the table, and creates a row and data cell. It then inserts the following HTML into the table:

```
"<hr>" + "<h1>" + (output[i]['Name of Resource']) + "</h1>" +
8
9
                           "<h2>" + (output[i]['Address']) + "</h2>" +
10
                           "<h2>" + "<a href=tel:" + (output[i]['Phone Number']) + ">" +
    (output[i]['Phone Number']) + "</a>" + "
                                                  " + (output[i]['Extension'])+"</h2>" +
11
                           "<h3>" + "<a href=https://" + (output[i]['Website']) + ">" +
    (output[i]['Website']) + "</a>" + "</h3>" +
                           "<h4>" + (output[i]['Person of Contact'])+ "
                                                                          " + "<a href=mailto:" +
12
    (output[i]['Email']) + ">" + (output[i]['Email']) + "</a>" + "</h4>" +
                           "" + (output[i]['Details']) + "") }
13
```

This is where the bulk of the data processing happens.

It starts by inserting a horizontal line, <hr> to separate each resource.

It then calls for the data in the Name of Resource column of the CSV, and styles it in the form of Header 1 <h1>.

This is repeated for the Address, which is formatted as Header 2 < h2>.

Afterwards, text is generated for the phone number. This still uses style <h2> but displays the phone number itself with a link to call the number, which is the part. Between the <a> and , it then displays the phone number as well. This makes it so the phone number, when clicked, calls the number listed. It then simply inserts a small space, and then displays the phone's extension before closing the Header 2.

The next line displays the website URL, using the same method as the phone number, except instead of "tel:" it uses "https://". This is displayed as a Header 3 < h3>

The second to last line of this section uses Header 4 < h4> to display the Name of the person of contact, followed by their email. This email is similarly linked like the phone number and website, using "matilto:" instead of tel or https. The final line simply displays the contents of the Details cell in a HTML paragraph section.

```
14 };
15 |
16 | runEnter();
17 });
```

This section closes out the runEnter function, and then runs the runEnter function before closing out the d3.csv section from the beginning.

```
setTimeout(function(){
19  var str = document.getElementById("BookContent").innerHTML;
20  str = str.replace(/\*\*/g, "*SingleAsterik");
21  str = str.replace(/\*\^/g, "<br>
22  str = str.replace(/\*\^/g, "<br>
33  str = str.replace(/SingleAsterik/g, "*");
```

```
document.getElementById("BookContent").innerHTML = str; }, 2000);
```

This is the final section of CSV_Reader.js. It sets a function() to run after a certain amount of time. This time is determined on line 25 in milliseconds. It is currently set to 2 seconds, but ideally would run right after runEnter() has fully completed.

Line 19 creates a string for the BookContent, and the following lines 20-22 reformat the section in accordance to the "Guide to Updating Blue Book" we have also provided. Line 20 sets any ** to *SingleAsterik. Line 21 sets any *^ to a line break, blank space, and then open bullet. Line 22 sets any * to a line break and then a bullet. Line 23 sets any SingleAsterik to a *. Finally, line 24 sets the BookContent to this new modified version.

CSV_Reader_Multi.js

This file is used to process any data that has multiple sections. This section will only detail the changes between CSV_Reader_Multi.js and CSV_Reader.js.

```
var name = document.getElementById("FileName").innerHTML

("button").click(function(){
    d3.select("BlueBook").select("table").html("");
    var SORT = $(this).attr('id');
    d3.csv("CSV/"+name+".csv").then(function (data) {
```

The change here is a new line 2, 3, and 4. Line 2 makes it so the function below runs when a button is clicked. Line3 sets the BlueBook table to be completely blank, so that the new data can then be displayed. Line4 creates the variable SORT, and sets it as the id of the button that was clicked.

The changes here are the new/modified lines 7, 8, and 9. Line 7 is for debugging, and can be ignored. Line 8 creates a new variable, filteredData, and sets it as any row of the CSV that contains the string defined in the variable SORT in the column of Category.

```
12
                                                 "<hr>" + "<h1>" + (output[i]['Name of Resource']) + "</h1>" +
                                                 "<h2>" + (output[i]['Address']) + "</h2>"
13
                                                 "<h2>" + "<a href=tel:" + (output[i]['Phone Number']) + ">" + (output[i]['Phone Number']) + "</a>" + "
      (output[i]['Extension'])+"</h2>" +
                                                 "<h3>" + "<a href=https://" + (output[i]['Website']) + ">" + (output[i]['Website']) + "</a>" + "</h3>" +
15
                                                 "<h4>" + (output[i]['Person of Contact'])+ "
                                                                                                " + " <a href=mailto:" + (output[i]['Email']) + " > " + (output[i]['Email']) + " </a > " +
16
      "</h4>"+
                                                 "" + (output[i]['Details']) + "") }
      }:
17
18
      runEnter();
```

Lines 12-30 function identically to CSV_Reader.js. Please refer to the previous section for an explanation.

Intro.js

This script is largely based on CSV_Reader.js.

```
var name = document.getElementById("FileName").innerHTML
1
2
    d3.csv("CSV/"+name+".csv").then(function (data) {
3
    function runEnter() {
4
            var output = data;
5
    {
6
                   d3.select("BlueIntro").select("table").insert("tr").insert("td").html(
                          "" + (output[0]['Intro']) + "") }
7
8
    };
9
10
    runEnter();
11
12
    setTimeout(function(){
    var str = document.getElementById("IntroContent").innerHTML;
13
    str = str.replace(/^*\*/g, "*SingleAsterik");
15
    str = str.replace(/^*\^/g, "<br> &nbsp; \circ ");
    str = str.replace(/^*/g, "<br>• ");
16
17
    str = str.replace(/SingleAsterik/g, "*");
    document.getElementById("IntroContent").innerHTML = str;
18
19
    }, 2000);
```

Lines 1-4 function the same as CSV_Reader.js, and at line 5 it deviates by not having a for loop. Instead, line 6 sets the content of BlueIntro's table to be the contents of the first data cell under the CSV's Intro column. The rest of the script functions identically to CSV_Reader.js, except with the id of Intro Content for the formatting.

Closing.js

```
var name = document.getElementById("FileName").innerHTML
d3.csv("CSV/"+name+".csv").then(function (data) {
function runEnter() {
    var output = data;
}
```

```
d3.select("BlueClosing").select("table").insert("tr").insert("td").html(
6
7
                           "<hr>" + "" + (output[0]['Closing']) + "") }
8
    };
9
10
    runEnter();
11
    });
12
    setTimeout(function(){
    var str = document.getElementById("ClosingContent").innerHTML;
13
14
    str = str.replace(/^*\'^*/g, "*SingleAsterik");
15
    str = str.replace(/^*\^/g, "<br> &nbsp; \circ ");
16
    str = str.replace(//*/g, "<br>• ");
17
    str = str.replace(/SingleAsterik/g, "*");
    document.getElementById("ClosingContent").innerHTML = str;
18
19
    }, 2000);
```

This code is identical to Intro.js, except it references the section Closing, the column in the CSV named Closing, and the id of ClosingContent.

Button_Maker_V2.js

Button_Maker_V2.js works very similarly to the previous CSV reading and writing functions, but has a more complicated loop contained within it. This is because a table is generated to hold all of the category buttons in an organized fashion. The variable j keeps track of how many columns have been generated in a row, and resets to 0 after counting 3 columns and triggers the generation of a new row in the table. Variable k is needed to keep track of which row the script is currently inserting buttons into, as otherwise it would continue to try putting new columns in the same row. Lines 10 and 15 then set the id of the current row equal to k. Line 18 then selects the current row by using the assigned id and adding the necessary html for the new column and button in the lines following 19, similarly to other previously explained JavaScript files.

```
4
    function runEnter() {
5
            console.log(data)
6
                    vari = 0
7
                    var k = "0a"
8
                    var output = data
9
                    let idRow1 = d3.select("BlueBook").select("table").insert("tr")
10
                                    idRow1. groups[0][0].id = k
11
                    for (var i = 0; i < data.length; i++) {
12
                            if(i == 3){
                                    k = (i/3) + "a"
13
                                    let idRow = d3.select("BlueBook").select("table").insert("tr")
14
15
                                    idRow. groups[0][0].id = k
16
                                    i=0
17
18
                            var trld = document.getElementByld(k)
19
                            d3.select(trld).insert("td").attr("width", "33%").html(
```

Button_Maker_Mobile.js

Button_Maker_Mobile.js is very similar to previous files, and is a bit less complicated than Button_Maker_V2.js because it uses a flexbox instead of a table. Lines 8 and 9 simply select the necessary div and line 10 generates the button code in html.

Closing Thoughts / Issues

I hope this small guide was helpful to those who will be working with our code.

Below I have listed some known issues that we were unable to solve in the allotted time frame:

- Multiple Phone Numbers, Emails, and Websites
 - The code for linking up the phone numbers, emails, and websites work well when there is a single one listed, but if there are multiple listed (separated by semicolons ; and ampersands &) it cannot distinguish between them. One possible solution is to have a separate column for each, but perhaps there is a way to do it without this.
- setTimeout
 - Currently, the JavaScript is just set to wait 2 seconds. If the replacement code runs before the runEnter() has finished, it will not work. Ideally, the setTimeout function would run directly after runEnter() has finished, but our team was unable to find a solution in the allotted time frame.
- Section Buttons
 - The formatting for these buttons does not display as nicely as the buttons on the home page. Ideally, they can use the same code used to create the Table of Contents buttons, but that was unable to be done in our time frame.

Closing Notes

The main essence of the CSV_Reader.js was learned/sourced from Jurgen Arias in his article, "Building a simple website that outputs results from a CSV using user's input", which can be found here: https://levelup.gitconnected.com/building-a-simple-website-that-outputs-results-from-a-csv-using-users-input-bfcb782ced45

The HTML and JavaScript files were all created in Adobe Dreamweaver, and occasionally edited in Notepad++. The development was done in Windows 10.

The test server was hosted using https://www.a2hosting.com/, but hopefully by the time the next IQP begins it will be possible to develop the Online Blue Book on the Seven Hills website itself.

If you have any questions on the content of this guide or the code, please reach out to Eli Breitbart Frischling at eli.breitbartfrischling@gmail.com, and Julia Meisser at jmeisser@wpi.edu.

$Appendix \ J-Final \ Website \ Screenshots$













